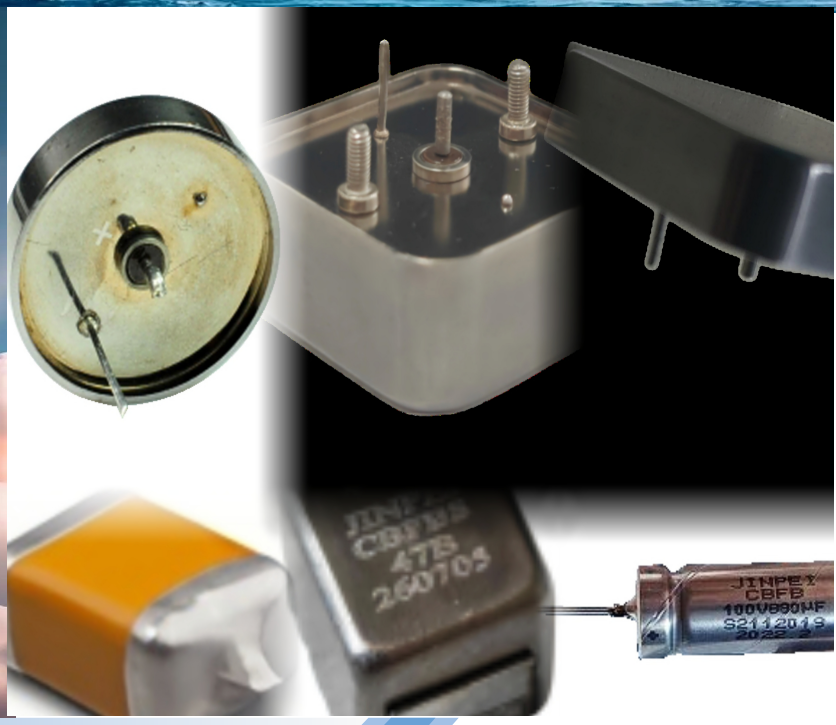






HIGH RELIABILITY TANTALUM CAPACITOR

JINPEI

MILITARY
QUALITY TRUST
JINPEI

www.sh-jinpei.com

version: BWDI02

JINPEI since 2005

WHO WE ARE

Specialzing in powder metallurgy, new materials and electronic components. Our core team members have years of experience in research and development at defense enterprises and were previously visiting scholars at the Debye Laboratory.
mastering cutting-edge industry technologies and a deep understanding of **capacitor** application scenarios.



Had been being highly recognized of meeting the demanding from high reliability and extreme harshness in the fields of national defense and military,commercial aerospace, oil drilling, healthcare, and communication.(comparing with MIL NASA).
Since 2005, Jinpei had been striving to become a long-term contract contractor of enterprises who own tens of thousands of employees.

CERTIFICATE



Mission

Making our customers no related problems from capacitor application .

Vision

Become the most trusted partner of customers

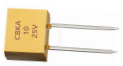
Value

Honesty | Positive | Inclusion | Achievement for others

CCONTENT

PICTURE	JINPEI	DESCRIPTION	KEMET	VISHAY	EVANS	AVX	EXXELIA	PAGE
	HIGH ENERGY TANTALUM HYBRID CAPACITOR							
	CBET	80~50,000uF, 10~125V, 175℃						5
	CBER	80~150,000uF, 10~125V, 150℃						13
	CBES	800~200,000uF, 10~125V, 150℃						25
	CBEQ	270~1,200,000uF, 10~500V, 150℃						31
	CBEP	400~225,000uF, 10~125V, 150℃						37
	CBEN	1,400~220,000uF,6~75V, 125℃		DLA15010	THS3			45
	CBEO	360~200,000uF,10~125V, 125℃			TDD			52
	CBEH	80~22,000uF,10~125V, 125℃		HE3 DLA 10011 HE5	THQA2, THQS2			56
	CBEG	3,000~24,000uF,50~80V, 125℃			THQ4 ,THQ5			61
	CBEF	2,200~23,000uF,10~125V, 125℃			THO4SM THO5SM			62
	CBEE	1,100~150,000uF, 10~125V, 125℃			THO3SM			63
	CBED	160~50,000uF, 10~125V, 125℃			THO1SM			65
	CBEC	2,200~230,000uF, 10~125V, 125℃			THO4 THO5			68
	CBEB	1,100~150,000uF, 10~125V, 125℃			THQ3			70
	CBEA	600~20,000uF, 10~125V, 125℃			THQ1			72
	CBEM	1,100~100,000uF, 10~125V, 125℃						75
	CBEL	600~230,000uF, 10~125V, 125℃						76
	CBEK	1,100~150,000uF, 10~125V, 125℃						79
	CBEJ	8,000~11,000uF, 50V, 125℃						81
	CBEI	150~4,700uF, 400~500V, 125℃						82
	AXIAL LEADS WET TANTALUM CAPACITOR							
	CBGH	47~680uF, 50~125V, 230℃		T11		TWA-X		87
	CBGC	1.7~2,200uF, 6~125V, 200℃		134D 135D		TWA-Y TWC-Y	CT79 CT79E HT200	89
	CBGD	10~680uF, 50~125V, 200℃						95
	CBGE	4~2,200uF, 6~63V, 200℃						97
	CBGF	1.7~1,200uF, 6~125V, 200℃						101
	CBGG	33~680uF, 50~75V, 200℃						105
	CBGY	3.3~1,000uF, 6.3~125V, 185℃						107
	CBGT	3.3~1,000uF, 6.3~100V, 175℃						108
	CBGW	2.2~1,000uF, 6.3~125V, 155℃						109

CCONTENT

PICTURE	JINPEI	DESCRIPTION	KEMET	VISHAY	EVEANS	AVX	EXXELIA	PAGE
	AXIAL LEADS WET TANTALUM CAPACITOR							
	CBFD	1.7~1,200uF, 6.0~125V		109D,138D M39006...				110
	CBFB	10~2,200uF, 15~125V,reverse 1.5V		STE	HC		39006/22 CLR79	113
	CBFA	1.7~1,200uF, 6.0~125V,reverse 3.0V		39006/22 CLR79	HC		39006/22 CLR79	116
	CBFC	6.8~2,200uF, 6.0~125V,reverse 3.0V	T266	39006/25 CLR81			CT79 CT79E	120
	CBDB	0.47~3,300uF, 6.3~125V,general						123
	CBDA	1.0~3,300uF, 6.3~125V,general		134D				130
	CBDAA	1.0~4,700uF, 6.3~125V,general		769D			CT9, CT9E	134
	CBDC	1.0~1,500uF, 6.3~125V,general		200D, 202D			CT4, CT4E	137
	CBDE	1.7~1,200uF, 6.0~125V,general		109D, 138D M39006/09/21/30			CT9CR	142
	AXIAL LEADS SOLID TANTALUM CAPACITOR							
	CBFF	0.047~470uF, 6.3~100V, reliability index	CSR13	150D				145
	CBFE	1.0~1,000uF, 6.3~100V,generalL					CTS1 CTS13	147
	CBDY	1.0~1,000uF, 6.3~100V,general					CTS21	150
	CBIA	0.22~220uF, 6.3~63V,non polar	CSR91					151
	RADIAL LEADS TANTALUM CAPACITOR							
	CBIB	0.22~150uF, 6.3~63V,non polar						152
	CBHA	0.22~1,000uF, 6.3~63V					CTS27	153
	CBHB	1.0~1,000uF, 6.3~125V					CTS41	156
	CBKA	0.047~1,000uF, 4.0~63V	T340					158
	POLYMER CHIP TANTALUM CAPACITOR SMD							
	CBAE	1.0~2,200uF, 2.5~25V, double 85	T492	T95, CWR11		TCJ,TCM		160
	CBAEA	0.1~2,200uF, 16~125V, failure rate grade	T521,T541	T96,T97		TCJ,TCM		172
	CBAFB	1.0~470uF, 2.7~100V, failure rate grade	T495			TPS		192
	WET TANTALUM HYBRID CAPACITOR							
	CBJB	10~1,000uF, 50~125V, 200°C		T22				195
	WET TANTALUM SMD CAPACITOR							
	CBJA	22~6,800uF, 10~125V		T24 DLA19001 / 20012				197
	HIGH RELIABLE COTS & CONFORMAL COATED POLYMER TANTALUM CAPACITOR							
	CBLA	1.0~2,200uF, 4~125V, 150°C		T95, T97		F95, F75 F72		200
	HIGH RELIABLE COTS & CONFORMAL COATED SOLID TANTALUM CAPACITOR							
	CBMA	4.7~680uF, 2.7~33V		T95				203

CBET

tantalum case, hermetic Seal,
high temperature 175℃

● Tantalum case, gas sealing
● High energy density per unit volume. It can play the role of a battery in energy conversion circuits and power pulse circuits,
providing functions such as energy storage, power-off delay and fi ltering for the circuit;
● Temperature range: -55 ℃ to +175 ℃ (apply reduced voltage when the temperature is between 85℃ and 175℃).
● Standad: GJB 733B-2011

Application

Suitable for DC, pulsating and low ripple circuits used in military electronic equipment with high reliability requirements,

such as aviation, aerospace, weapons, satellites and radars,oil drilling equipment

CBET is a hybrid capacitor composed of tantalum electrolytic capacitors and chemical capacitors, utilizing materials and processes capable of withstanding higher temperatures.
It can function as a battery in energy conversion circuits and power pulse circuits, enabling unlimited charge and discharge cycles.
It serves various roles in circuits, including power buff ering, energy absorption, energy replenishment, and power interruption delay.

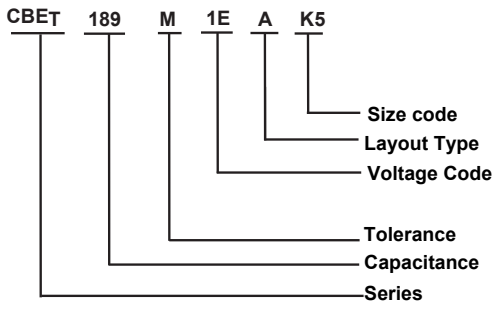




Out line dimension mm

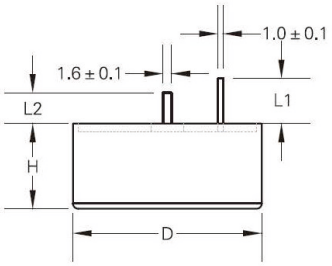
Series	size code	D±0.50	H±0.50	L1min	L2±0.76	D1±0.38	installation bracket
CBET	A1	Φ 12	8	7	5.84	4	A BC
	A2		10				
	A3		12				
	C1	Φ 16	8	7	5.84	5.08	A(A1 A2) B C
	C3		10				
	C5		12				
	C4		16				
	H1	Φ22	8	7	5.84	7.5	A(A1 A2) B C BL CL
	H3		10				
	K4	Φ36	8	7	5.84	10.16	A(A1 A2 A3) B C BL CL
	K5		10				

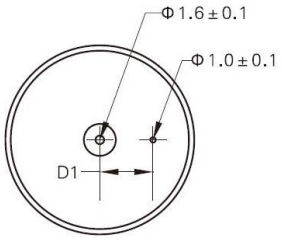
PART NUMBER EXAMPLE

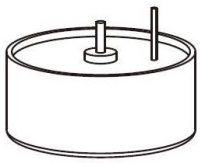


HIGH ENERGY HYBRID TANTALUM CAPACITOR

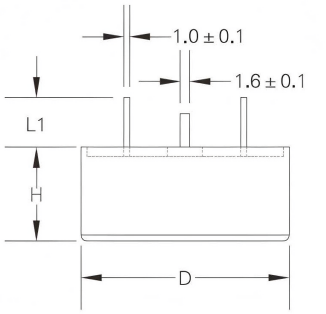
layout A

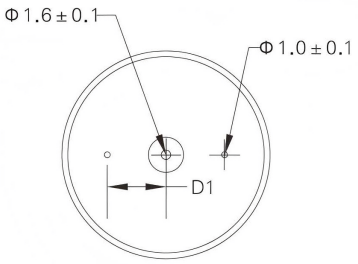


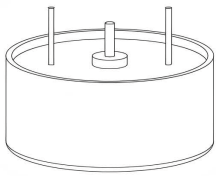




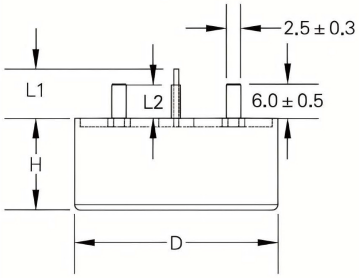
layout B

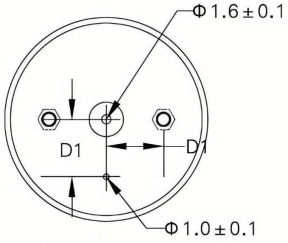


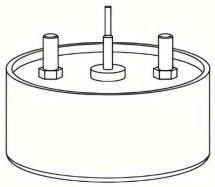




layout BL / two ∅2.5mm screws, no bracket required



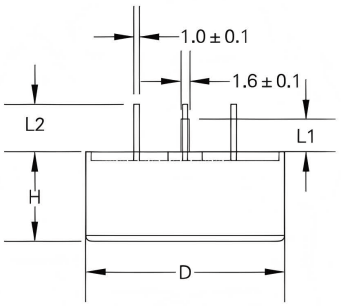


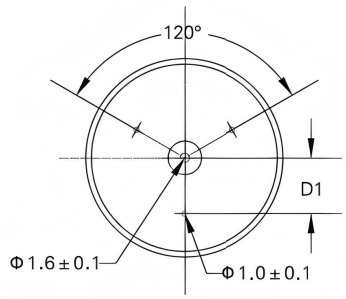


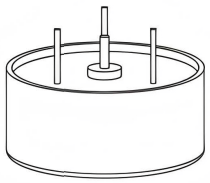
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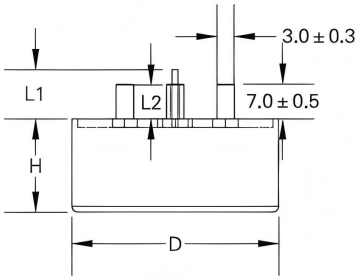
layout C

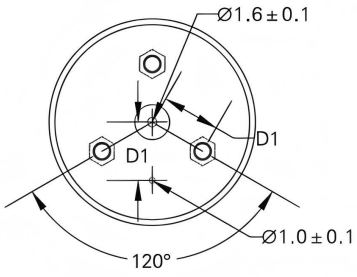


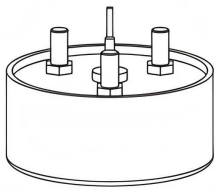




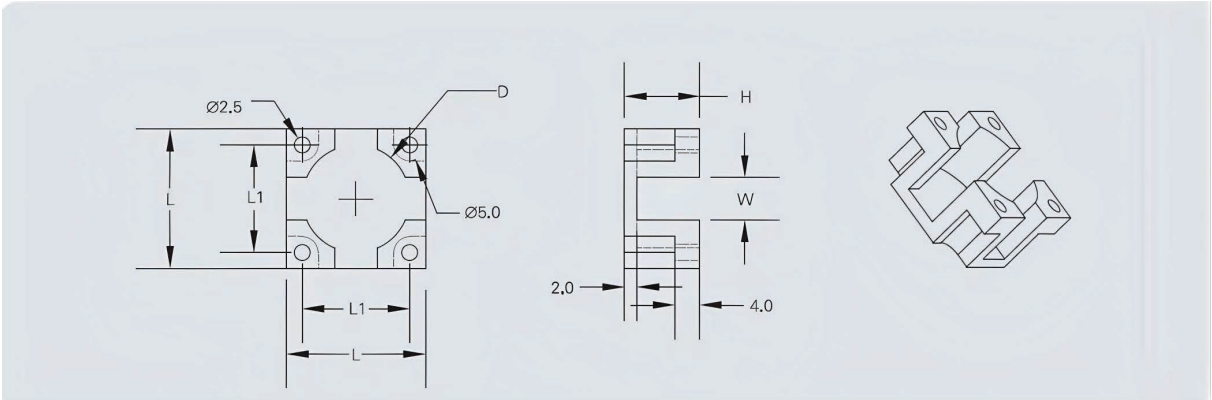
layout CL / three ∅3 .0mm screws, no bracket required







bracket & dimension A1 A2



dimension	D	L	L1	H	W
Φ16	16.5	22	17	8/12/16	6.7
Φ22	22.5	28	23	8/12/16	9
Φ36	36.5	37	32	8/12/16	11.3

HIGH ENERGY HYBRID TANTALUM CAPACITOR

PARAMETER SHEET

Dimension	Case code	Nominal Cr (μF)	MAX								
			Tgδ(%) 100Hz	ESR (Ω) 1kHz	Leakage current(μA)			Imp. (Ω) 100Hz	Capacitance change (%) 100Hz		
					25℃	125℃	175℃	-55℃	-55℃	125℃	175℃
Rated voltage (Ur)10V reduced voltage ≤ 50% Ur											
Φ12×8	A1	3000	120	0.42	50	400	500	10	-80	85	90
Φ12×10	A2	3600	120	0.36	60	480	600	8	-80	85	90
Φ12×12	A3	6000	120	0.3	100	800	1000	5	-80	85	90
Φ16×8	C1	6000	120	0.35	100	800	1000	8	-80	85	90
Φ16x10	C3	8000	120	0.3	14	112	140	7	-80	85	90
Φ16×12	C5	12000	120	0.25	200	1600	2000	5	-80	85	90
Φ16×16	C4	18000	120	0.2	240	1920	2400	4	-80	85	90
Φ22×8	H1	12000	130	0.15	120	960	1200	4.8	-80	85	90
Φ36×8	K4	40000	180	0.07	150	1200	1500	2	-80	80	80
Φ36×10	K5	50000	180	0.05	200	1600	2000	1.2	-80	80	85
Rated voltage (Ur) 16V reduced voltage ≤ 50% Ur											
Φ12×8	A1	1500	100	0.42	40	320	400	10	-80	85	90
Φ12×10	A2	1800	100	0.36	48	384	480	8	-80	85	90
Φ12×12	A3	3000	100	0.3	80	640	800	5	-80	85	90
Φ16×8	C1	4000	100	0.35	80	640	800	8	-80	85	90
Φ16×10	C3	5000	100	0.3	140	1120	1400	7	-80	85	90
Φ16×12	C5	8000	100	0.25	145	1160	1450	5	-80	85	90
Φ16×16	C4	12000	100	0.2	220	1760	2200	4	-80	85	90
Φ22×8	H1	7500	110	0.15	200	1600	2000	4.8	-80	85	90
Φ22×10	H3	10000	110	0.12	220	1760	2200	4	-80	85	90
Φ36×8	K4	24000	160	0.08	150	1200	1500	2	-80	75	80
Φ36×10	K5	30000	160	0.05	250	2000	2500	1.2	-80	75	80
Rated voltage (Ur) 25V reduced voltage ≤50% Ur											
Φ12×8	A1	1200	80	0.42	47	376	470	10	-75	80	85

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HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal Cr (μF)	MAX								
			Tgδ(%) 100Hz	ESR (Ω) 1kHz	Leakage current(μA)			Imp. (Ω) 100Hz	Capacitance change (%) 100Hz		
					25℃	125℃	175℃	-55℃	-55℃	125℃	175℃
Φ12×10	A2	1500	80	0.36	57	456	570	8	-75	80	85
Φ12×12	A3	2400	80	0.3	94	752	940	5	-75	80	85
Φ16×8	C1	2500	80	0.35	95	760	950	8	-75	80	85
Φ16×10	C3	3000	80	0.3	120	960	1200	7	-75	80	85
Φ16×12	C5	5000	80	0.25	170	1360	1700	5	-75	80	85
Φ16×16	C4	7500	80	0.2	250	2000	2500	4	-75	80	85
Φ22×8	H1	4500	85	0.15	180	1440	1800	4.8	-75	80	85
Φ22×10	H3	6000	85	0.12	250	2000	2500	4	-75	80	85
Φ36×8	K4	15000	120	0.08	150	1200	1500	2	-80	75	80
Φ36×10	K5	18000	120	0.05	250	2000	2500	1.2	-80	75	80
Rate d voltage (Ur) 35V reduced voltage ≤50% Ur											
Φ12×8	A1	800	50	0.42	44	352	440	12	-75	80	85
Φ12×10	A2	900	50	0.36	50	400	500	10	-75	80	85
Φ12×12	A3	1600	50	0.3	88	704	880	6	-75	80	85
Φ16×8	C1	1800	50	0.35	80	640	800	10	-75	80	85
Φ16×10	C3	2500	50	0.3	153	1224	1530	8	-75	80	85
Φ16x12	C5	3600	50	0.25	160	1280	1600	5	-75	80	85
Φ16×16	C4	5400	50	0.2	245	1960	2450	4	-75	80	85
Φ22×8	H1	4000	55	0.15	150	1200	1500	4.8	-75	80	85
Φ22×10	H3	5200	55	0.12	200	1600	2000	4	-75	80	85
Φ36×8	CE1	9000	90	0.08	150	1200	1500	2	-80	75	80
Φ36×10	CE2	12000	90	0.05	250	2000	2500	1.2	-80	75	80
Rated voltage (Ur) 50V reduced voltage ≤ 50% Ur											
Φ12×8	A1	550	40	0.42	44	352	440	13	-75	70	75
Φ12×10	A2	700	40	0.36	53	424	530	11	-75	70	75

HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal Cr (μF)	MAX								
			Tgδ(%) 100Hz	ESR (Ω) 1kHz	Leakage current(μA)			Imp. (Ω) 100Hz	Capacitance change (%) 100Hz		
					25℃	125℃	175℃	-55℃	-55℃	125℃	175℃
Φ12×12	A3	1100	40	0.3	88	704	880	7	-75	70	75
Φ16×8	C1	1100	40	0.35	70	560	700	11	-75	70	75
Φ16x10	C3	1500	40	0.3	125	1000	1250	9	-75	70	75
Φ16×12	C5	2200	40	0.25	140	1120	1400	5	-75	70	75
Φ16×16	C4	3300	40	0.2	210	1680	2100	5	-75	70	75
Φ22×8	H1	2500	45	0.15	180	1440	1800	6	-75	70	75
Φ22×10	H3	3000	45	0.12	200	1600	2000	5	-75	70	75
Φ36×8	K4	6000	65	0.1	150	1200	1500	5	-85	65	70
Φ36×10	K5	8000	65	0.07	200	1600	2000	3	-85	65	70
Rated voltage (Ur) 63V reduced voltage ≤ 50% Ur											
Φ12×8	A1	400	30	0.45	40	320	400	17	-70	70	75
Φ12×10	A2	500	30	0.42	47	376	470	14	-70	70	75
Φ12×12	A3	800	30	0.35	79	632	790	8	-70	70	75
Φ16×8	C1	500	30	0.4	42	336	420	14	-70	70	75
Φ16×10	C3	600	30	0.35	63	504	630	12	-70	70	75
Φ16×12	C5	1000	40	0.29	120	960	1200	8	-70	70	75
Φ16×16	C4	1500	30	0.25	130	1040	1300	5	-70	70	75
Φ22×8	H1	1000	35	0.22	100	800	1000	6	-70	70	75
Φ22×10	H3	1300	35	0.18	120	960	1200	5	-70	70	75
Φ36×8	K4	3000	45	0.15	170	1360	1700	5	-75	65	70
Φ36×10	K5	4000	45	0.1	200	1600	2000	3	-75	65	70
Rated voltage (Ur) 80V reduced voltage ≤ 50% Ur											
Φ12x8	A1	300	25	0.46	40	320	400	17	-65	70	75
Φ12×10	A2	360	25	0.42	48	384	480	14	-65	70	75
Φ12×12	A3	600	25	0.35	80	640	800	8	-65	70	75

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HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal Cr (μF)	MAX								
			Tgδ(%) 100Hz	ESR (Ω) 1kHz	Leakage current(μA)			Imp. (Ω) 100Hz	Capacitance change (%) 100Hz		
					25℃	125℃	175℃	-55℃	-55℃	125℃	175℃
Φ16×8	C1	400	25	0.4	44	352	440	14	-65	70	75
Φ16×10	C3	500	25	0.35	70	560	700	12	-65	70	75
Φ16×12	C5	800	25	0.29	88	704	880	8	-65	70	75
Φ16×16	C4	1200	25	0.25	130	1040	1300	5	-65	70	70
Φ22×8	H1	800	30	0.22	110	880	1100	6	-65	70	70
Φ22×10	H3	1100	30	0.18	130	1040	1300	5	-65	70	70
Φ36×8	K4	2000	40	0.15	200	1600	2000	5	-65	50	65
Φ36×10	K5	3000	40	0.1	400	3200	4000	3	-65	50	65
Rated voltage (Ur) 100V reduced voltage ≤50% Ur											
Φ12×8	A1	250	25	0.53	38	304	380	24	-55	65	70
Φ12×10	A2	300	25	0.48	45	360	450	20	-55	65	70
Φ12×12	A3	500	25	0.4	75	600	750	12	-55	65	70
Φ16×8	C1	150	25	0.46	26	208	260	20	-55	65	70
Φ16×10	C3	180	25	0.4	31	248	310	17	-55	65	70
Φ16×12	C5	300	25	0.33	50	400	500	12	-55	65	70
Φ16×16	C4	450	25	0.35	80	640	800	5	-55	65	70
Φ22×8	H1	300	25	0.43	50	400	500	6	-55	65	70
Φ22×10	H3	400	25	0.36	80	640	800	5	-55	65	70
Φ36×8	K4	900	35	0.18	200	1600	2000	8	-50	55	60
Φ36×10	K5	1200	35	0.13	200	1600	2000	4.8	-50	55	60
Rated voltage(Ur)125V reduced voltage ≤50% Ur											
Φ16×8	C1	80	20	0.7	12	96	120	20	-30	45	50
Φ16×10	C3	100	20	0.5	28	224	280	17	-30	45	50
Φ16×12	C5	160	20	0.42	28	224	280	12	-30	45	50
Φ16×16	C4	240	20	0.4	50	400	500	5	-30	45	50

HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal Cr (μF)	MAX								
			Tgδ(%) 100Hz	ESR (Ω) 1kHz	Leakage current(μA)			Imp. (Ω) 100Hz	Capacitance change (%) 100Hz		
					25℃	125℃	175℃	-55℃	-55℃	125℃	175℃
Φ22×8	H1	220	25	0.56	30	240	300	6	-30	45	50
Φ22×10	H3	300	25	0.48	40	320	400	5	-30	45	50
Φ36×8	K4	800	35	0.3	200	1600	2000	8	-40	15	20
Φ36×10	K5	1100	35	0.2	300	2400	3000	6	-40	15	20

Measurement conditions

1. Capacity and loss: Measurement frequency 100Hz, AC signal 1V, DC bias 2.2V;

2. Leakage current: Rated voltage, charging time 5 minutes;

3. Equivalent series resistance: Measurement frequency 1KHz, AC signal 1V, DC bias 2.2V.

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CBER

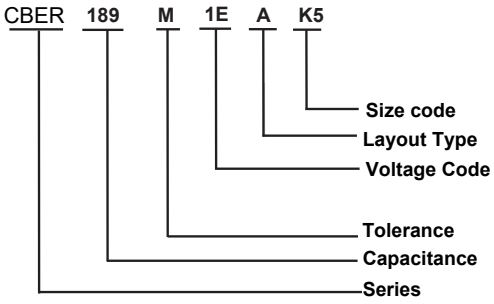
tantalum case, hermetic Seal,
high temperature 150℃

CBER is a hybrid capacitor composed of tantalum electrolytic capacitors and chemical capacitors, utilizing materials and processes capable of withstanding higher temperatures,
with a maximum operating temperature of 150℃. It can function as a battery in energy conversion circuits and power pulse circuits,
enabling unlimited charge and discharge cycles to provide power buffering, energy absorption, energy replenishment, and power interruption delay for circuits.

- High energy density per unit volume, allowing it to serve as a battery in energy conversion and power pulse circuits by providing energy storage, power interruption delay, and filtering functions;
- Operating temperature range: -55℃ to +150℃ (category voltage applied when operating between 85℃ and 150℃);
- Standard: GJB 733B-2011

Application
This product is suitable for DC, pulsating, and low-ripple circuits in military electronics and oil drilling equipment with high reliability requirements,
such as aviation, aerospace, weapons, satellites, and radar systems.

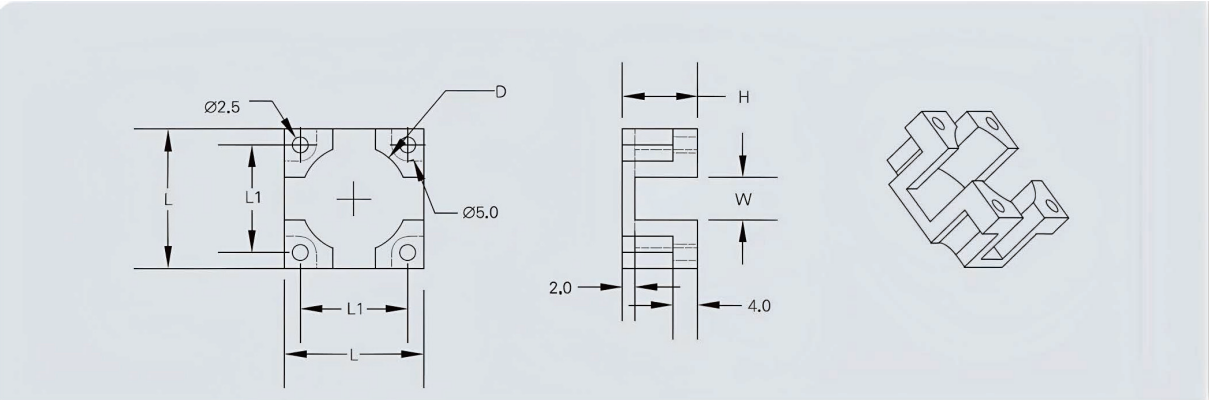
PART NUMBER EXAMPLE







bracket & dimension A1 A2



A1

dimension	D	L	L1	H	W
Φ16	16.5	22	17	8/12/16	6.7
Φ22	22.5	28	23	8/12/16	9
Φ36	36.5	37	32	8/12/16	11.3

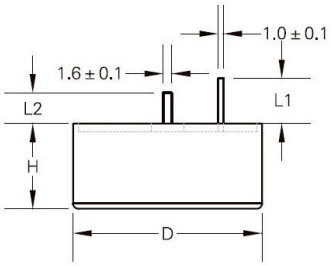
HIGH ENERGY HYBRID TANTALUM CAPACITOR

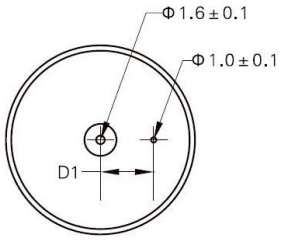
DIMENSION

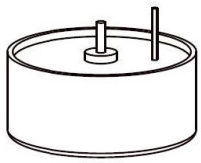
Series	Case cde	D±0.50	H±0.50	L1 min	L2±0.76	D1±0.38	installation bracket
CBER	A1	Φ12	8	7	5.84	4	A、B、C
	A2		10				
	A3		12				
	C1	Φ16	8	7	5.84	5.08	A (A1、A2)、B、C
	C3		10				
	C3		12				
	C4		16				
	H1	Φ22	8	7	5.84	7.5	A (A1、A2)、B、C、BL、CL
	H3		10				
	H2		12				
	H4		16				
	H5		18				
	H6		20				
	K4	Φ36	8	7	5.84	10.16	A (A1、A2、A3)、B、C、BL、CL
	K5		10				
	K1		12				
	K2		16				
	K6		18				
	K7		20				
	K8		24				

HIGH ENERGY HYBRID TANTALUM CAPACITOR

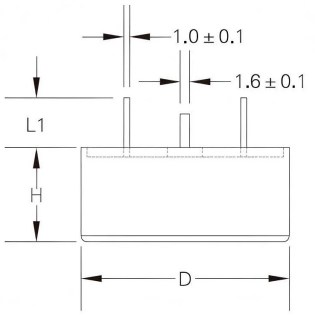
layout A

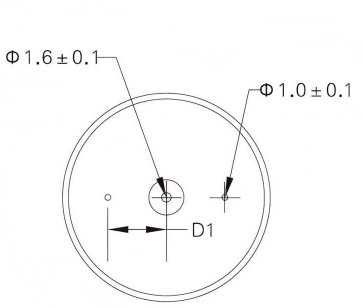


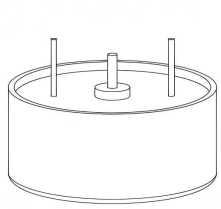




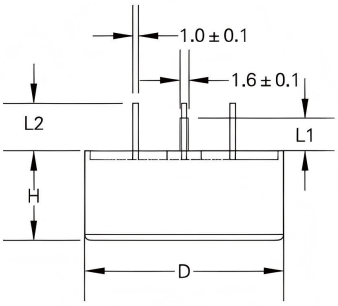
layout B

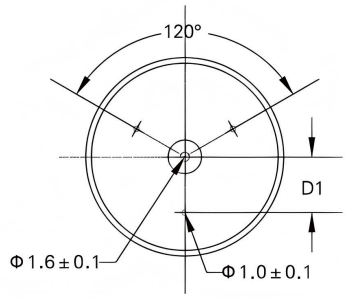


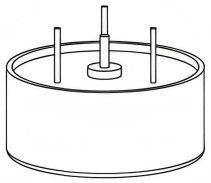




layout C

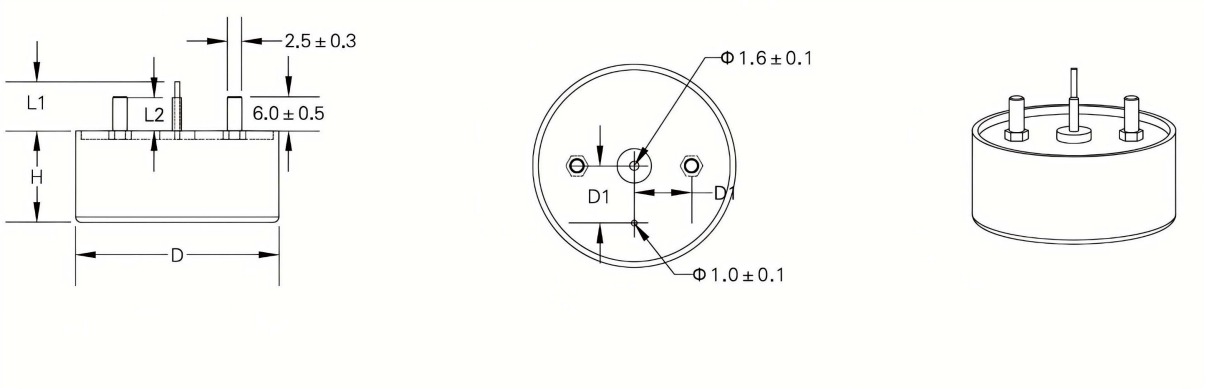




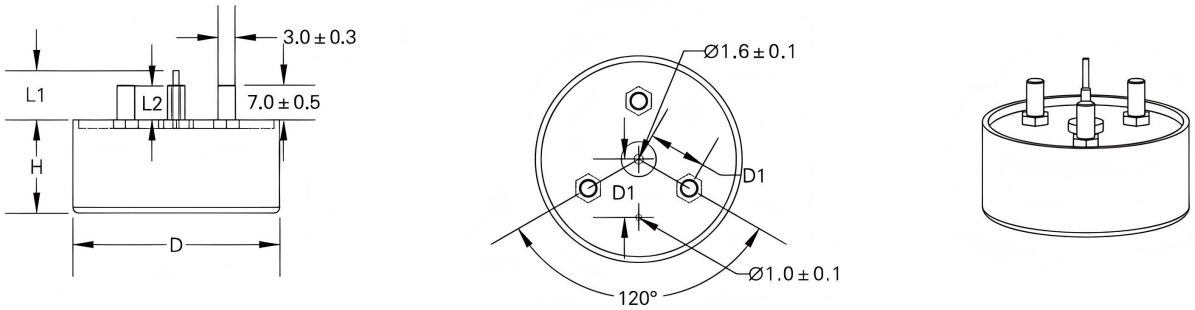


HIGH ENERGY HYBRID TANTALUM CAPACITOR

layout BL / two ∅2.5mm screws, no bracket required



layout CL / three ∅3 .0mm screws, no bracket required



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HIGH ENERGY HYBRID TANTALUM CAPACITOR

PARAMETER SHEET

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%）	ESR （Ω）	Leak current（μA）			Imp.（Ω） 100Hz	Capacitance change （%）100Hz		
			100Hz	1kHz	25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Rated voltage (Ur) 10V, category voltage Uc 6V, surge voltage (Us) 11V											
Φ12×8	A1	3000	120	0.42	50	400	500	10	-80	85	90
Φ12×10	A2	3600	120	0.36	60	480	600	8	-80	85	90
Φ12×12	A3	6000	120	0.3	100	800	1000	5	-80	85	90
Φ16×8	C1	6000	120	0.35	100	800	1000	8	-80	85	90
Φ16×10	C2	8000	120	0.3	14	112	140	7	-80	85	90
Φ16×12	C3	12000	120	0.25	200	1600	2000	5	-80	85	90
Φ16×16	C4	18000	120	0.2	240	1920	2400	4	-80	85	90
Φ22×8	H1	12000	130	0.15	120	960	1200	4.8	-80	85	90
Φ22×10	H3	16000	130	0.12	200	1600	2000	4	-80	85	90
Φ22×12	H2	24000	130	0.1	240	1920	2400	2.4	-80	85	90
Φ22×16	H4	36000	130	0.06	360	2880	3600	1.6	-80	85	90
Φ22×18	H5	48000	130	0.04	400	3200	4000	1.44	-80	85	90
Φ22×20	H6	48000	130	0.04	480	3840	4800	1.2	-80	85	90
Φ36×8	K4	40000	180	0.07	150	1200	1500	2	-80	80	80
Φ36×10	K5	50000	180	0.05	200	1600	2000	1.2	-80	80	85

HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%）	ESR （Ω）	Leak current（μA）			Imp.（Ω） 100Hz	Capacitance change （%）100Hz		
			100Hz	1kHz	25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Φ36×12	K1	80000	180	0.03	300	2400	3000	1	-80	80	80
Φ36×16	K2	120000	180	0.03	400	3200	4000	1	-80	80	85
Φ36×18	K6	150000	190	0.025	400	3200	4000	1	-80	80	85
Rated voltage(Ur)16V category voltageUc9.6V surge voltage(Us)17.6V											
Φ12×8	A1	1500	100	0.42	40	320	400	10	-80	85	90
Φ12×10	A2	1800	100	0.36	48	384	480	8	-80	85	90
Φ12×12	A3	3000	100	0.3	80	640	800	5	-80	85	90
Φ16×8	C1	4000	100	0.35	80	640	800	8	-80	85	90
Φ16×10	C3	5000	100	0.3	140	1120	1400	7	-80	85	90
Φ16×12	C5	8000	100	0.25	145	1160	1450	5	-80	85	90
Φ16×16	C4	12000	100	0.2	220	1760	2200	4	-80	85	90
Φ22×8	H1	7500	110	0.15	200	1600	2000	4.8	-80	85	90
Φ22×10	H3	10000	110	0.12	220	1760	2200	4	-80	85	90
Φ22×12	H2	15000	110	0.1	400	3200	4000	2.4	-80	85	90
Φ22×16	H4	22500	110	0.06	600	4800	6000	1.6	-80	85	90
Φ22×18	H5	30000	110	0.04	700	5600	7000	1.44	-80	85	90
Φ22×20	H6	30000	110	0.04	800	6400	8000	1.2	-80	85	90
Φ36×8	K4	24000	160	0.08	150	1200	1500	2	-80	75	80
Φ36×10	K5	30000	160	0.05	250	2000	2500	1.2	-80	75	80
Φ36×12	K1	48000	165	0.03	300	2400	3000	1	-80	80	80
Φ36×16	K2	72000	165	0.03	400	3200	4000	1	-80	80	80
Φ36×18	K6	90000	170	0.025	400	3200	4000	1	-80	80	80
Φ36×20	K7	96000	170	0.025	500	4000	5000	1	-80	80	80
Φ36×24	K8	120000	170	0.025	600	4800	6000	1	-80	85	90
Rated voltage(Ur)25V category voltageUc15V surge voltage(Us)27.5V											

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HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR (μF)	MAX.								
			Tg δ (%)	ESR (Ω)	Leak current (μA)			Imp. (Ω)	Capacitance change (%)		
			100Hz	1kHz	25℃	125℃	150℃	100Hz -55℃	-55℃	125℃	150℃
Φ12×8	A1	1200	80	0.42	47	376	470	10	-75	80	85
Φ12×10	A2	1500	80	0.36	57	456	570	8	-75	80	85
Φ12×12	A3	2400	80	0.3	94	752	940	5	-75	80	85
Φ16×8	C1	2500	80	0.35	95	760	950	8	-75	80	85
Φ16×10	C2	3000	80	0.3	120	960	1200	7	-75	80	85
Φ16×12	C3	5000	80	0.25	170	1360	1700	5	-75	80	85
Φ16×16	C4	7500	80	0.2	250	2000	2500	4	-75	80	85
Φ22×8	H1	4500	85	0.15	180	1440	1800	4.8	-75	80	85
Φ22×10	H3	6000	85	0.12	250	2000	2500	4	-75	80	85
Φ22×12	H2	9000	85	0.1	360	2880	3600	2.4	-75	80	85
Φ22×16	H4	13500	85	0.06	450	3600	4500	1.6	-75	80	85
Φ22×18	H5	18000	85	0.04	450	3600	4500	1.44	-75	80	85
Φ22×20	H6	18000	85	0.04	600	4800	6000	1.2	-75	80	85
Φ36×8	K4	15000	120	0.08	150	1200	1500	2	-80	75	80
Φ36×10	K5	18000	120	0.05	250	2000	2500	1.2	-80	75	80
Φ36×12	K1	30000	130	0.03	300	2400	3000	1	-70	70	80
Φ36×16	K2	45000	130	0.03	400	3200	4000	1	-70	70	80
Φ36×18	K6	54000	140	0.035	500	4000	5000	1	-70	70	80
Φ36×20	K7	60000	140	0.025	500	4000	5000	1	-70	70	80
Φ36×24	K8	75000	140	0.025	600	4800	6000	1	-75	80	85
Rated voltage(Ur)35V category voltageUc21V surge voltage(Us)38.5V											
Φ12×8	A1	800	50	0.42	44	352	440	12	-75	80	85
Φ12×10	A2	900	50	0.36	50	400	500	10	-75	80	85
Φ12×12	A3	1600	50	0.3	88	704	880	6	-75	80	85
Φ16×8	C1	1800	50	0.35	80	640	800	10	-75	80	85

HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR（μF）	MAX.								
			Tg δ（%）	ESR（Ω）	Leak current（μA）			Imp.（Ω）	Capacitance change（%）100Hz		
			100Hz	1kHz	25℃	125℃	150℃	100Hz -55℃	-55℃	125℃	150℃
Φ16×10	C2	2500	50	0.3	153	1224	1530	8	-75	80	85
Φ16×12	C3	3600	50	0.25	160	1280	1600	5	-75	80	85
Φ16×16	C4	5400	50	0.2	245	1960	2450	4	-75	80	85
Φ22×8	H1	4000	55	0.15	150	1200	1500	4.8	-75	80	85
Φ22×10	H3	5200	55	0.12	200	1600	2000	4	-75	80	85
Φ22×12	H2	8000	55	0.1	200	1600	2000	2.4	-75	80	85
Φ22×16	H4	12000	55	0.06	250	2000	2500	1.6	-75	80	85
Φ22×18	H5	15600	55	0.04	300	2400	3000	1.44	-75	80	85
Φ22×20	H6	16000	55	0.04	400	3200	4000	1.2	-75	80	85
Φ36×8	K4	9000	90	0.08	150	1200	1500	2	-80	75	80
Φ36×10	K5	12000	90	0.05	250	2000	2500	1.2	-80	75	80
Φ36×12	K1	18000	95	0.03	300	2400	3000	1	-70	70	80
Φ36×16	K2	27000	95	0.03	400	3200	4000	1	-70	70	80
Φ36×18	K6	36000	100	0.035	400	3200	4000	1	-70	70	80
Φ36×20	K7	36000	100	0.025	500	4000	5000	1	-70	70	80
Φ36×24	K8	45000	100	0.025	500	4000	5000	1	-75	80	85
Rated voltage(Ur)50V category voltageUc30V surge voltage(Us)55V											
Φ12×8	A1	550	40	0.42	44	352	440	13	-75	70	75
Φ12×10	A2	700	40	0.36	53	424	530	11	-75	70	75
Φ12×12	A3	1100	40	0.3	88	704	880	7	-75	70	75
Φ16×8	C1	1100	40	0.35	70	560	700	11	-75	70	75
Φ16×10	C2	1500	40	0.3	125	1000	1250	9	-75	70	75
Φ16×12	C3	2200	40	0.25	140	1120	1400	5	-75	70	75
Φ16×16	C4	3300	40	0.2	210	1680	2100	5	-75	70	75
Φ22×8	H1	2500	45	0.15	180	1440	1800	6	-75	70	75

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HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%）	ESR （Ω）	Leak current（μA）			Imp.（Ω） 100Hz	Capacitance change （%）100Hz		
			100Hz	1kHz	25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Φ22×10	H3	3000	45	0.12	200	1600	2000	5	-75	70	75
Φ22×12	H2	5000	45	0.1	300	2400	3000	3	-75	70	75
Φ22×16	H4	7500	45	0.06	350	2800	3500	2	-75	70	75
Φ22×18	H5	9000	45	0.04	400	3200	4000	1.8	-75	70	75
Φ22×20	H6	10000	45	0.04	400	3200	4000	1.5	-75	70	75
Φ36×8	K4	6000	65	0.1	150	1200	1500	5	-85	65	70
Φ36×10	K5	8000	65	0.07	200	1600	2000	3	-85	65	70
Φ36×12	K1	12000	70	0.04	300	2400	3000	2.5	-60	60	70
Φ36×16	K2	18000	70	0.04	400	3200	4000	1.5	-60	60	70
Φ36×18	K6	24000	75	0.035	400	3200	4000	1.5	-60	60	70
Φ36×20	K7	24000	75	0.025	500	4000	5000	1.5	-60	60	70
Φ36×24	K8	30000	75	0.025	600	4800	6000	1.5	-75	70	75
Rated voltage(Ur) 63V categoryvoltageUc 37.8V surge voltage(Us) 69.3V											
Φ12×8	A1	400	30	0.45	40	320	400	17	-70	70	75
Φ12×10	A2	500	30	0.42	47	376	470	14	-70	70	75
Φ12×12	A3	800	30	0.35	79	632	790	8	-70	70	75
Φ16×8	C1	500	30	0.4	42	336	420	14	-70	70	75
Φ16×10	C3	600	30	0.35	63	504	630	12	-70	70	75
Φ16×12	C5	1000	40	0.29	120	960	1200	8	-70	70	75
Φ16×16	C4	1500	30	0.25	130	1040	1300	5	-70	70	75
Φ22×8	H1	1000	35	0.22	100	800	1000	6	-70	70	75
Φ22×10	H3	1300	35	0.18	120	960	1200	5	-70	70	75
Φ22×12	H2	2000	35	0.15	160	1280	1600	3	-70	70	75
Φ22×16	H4	3000	35	0.09	200	1600	2000	2	-70	70	75
Φ22×18	H5	3900	35	0.06	240	1920	2400	1.8	-70	70	75

HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR (μF)	MAX.								
			Tg δ (%)	ESR (Ω)	Leak current (μA)			Imp. (Ω)	Capacitance change (%)		
			100Hz	1kHz	25℃	125℃	150℃	100Hz -55℃	-55℃	125℃	150℃
Φ22×20	H6	4000	35	0.06	300	2400	3000	1.5	-70	70	75
Φ36×8	K6	3000	45	0.15	170	1360	1700	5	-75	65	70
Φ36×10	K5	4000	45	0.1	200	1600	2000	3	-75	65	70
Φ36×12	K1	6000	50	0.06	300	2400	3000	2.5	-50	60	70
Φ36×16	K2	9000	50	0.05	400	3200	4000	1.5	-50	60	70
Φ36×18	K6	12000	55	0.035	400	3200	4000	1.5	-50	60	70
Φ36×20	K7	12000	55	0.035	400	3200	4000	1.5	-50	60	70
Φ36×24	K8	15000	55	0.035	500	4000	5000	1.5	-70	70	75
Rated voltage(Ur)80V category voltageUc48V surge voltage(Us)88V											
Φ12×8	A1	300	25	0.46	40	320	400	17	-65	70	75
Φ12×10	A2	360	25	0.42	48	384	480	14	-65	70	75
Φ12×12	A3	600	25	0.35	80	640	800	8	-65	70	75
Φ16×8	C1	400	25	0.4	44	352	440	14	-65	70	75
Φ16×10	C2	500	25	0.35	70	560	700	12	-65	70	75
Φ16×12	C3	800	25	0.29	88	704	880	8	-65	70	75
Φ16×16	C4	1200	25	0.25	130	1040	1300	5	-65	70	70
Φ22×8	H1	800	30	0.22	110	880	1100	6	-65	70	70
Φ22×10	H3	1100	30	0.18	130	1040	1300	5	-65	70	70
Φ22×12	H2	1600	30	0.15	220	1760	2200	3	-65	70	70
Φ22×16	H4	2400	30	0.09	330	2640	3300	2	-65	70	70
Φ22×18	H5	3300	30	0.06	400	3200	4000	1.8	-65	70	70
Φ22×20	H6	3300	30	0.06	440	3520	4400	1.5	-65	70	70
Φ36×8	K4	2000	40	0.15	200	1600	2000	5	-65	50	65
Φ36×10	K5	3000	40	0.1	400	3200	4000	3	-65	50	65
Φ36×12	K1	4000	40	0.06	500	4000	5000	2.5	-30	55	65

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HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%）	ESR （Ω）	Leak current（μA）			Imp.（Ω） 100Hz	Capacitance change （%）100Hz		
			100Hz	1kHz	25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Φ36×16	K2	6000	40	0.05	500	4000	5000	2.0	-50	55	65
Φ36×18	K6	8000	45	0.04	500	4000	5000	2	-30	55	65
Φ36×20	K7	8000	45	0.035	500	4000	5000	2	-30	55	65
Φ36×24	K8	10000	45	0.035	600	4800	6000	2	-65	70	70
Rated voltage(Ur)100V category voltageUc60V surge voltage(Us)110V											
Φ12×8	A1	250	25	0.53	38	304	380	24	-55	65	70
Φ12×10	A2	300	25	0.48	45	360	450	20	-55	65	70
Φ12×12	A3	500	25	0.4	75	600	750	12	-55	65	70
Φ16×8	C1	150	25	0.46	26	208	260	20	-55	65	70
Φ16×10	C3	180	25	0.4	31	248	310	17	-55	65	70
Φ16×12	C5	300	25	0.33	50	400	500	12	-55	65	70
Φ16×16	C4	450	25	0.35	80	640	800	5	-55	65	70
Φ22×8	H1	300	25	0.43	50	400	500	6	-55	65	70
Φ22×10	H3	400	25	0.36	80	640	800	5	-55	65	70
Φ22×12	H2	600	25	0.3	100	800	1000	3	-55	65	70
Φ22×16	H4	900	25	0.18	150	1200	1500	2	-55	65	70
Φ22×18	H5	1200	25	0.12	180	1440	1800	1.8	-55	65	70
Φ22×20	H6	1200	25	0.1	200	1600	2000	1.5	-55	65	70
Φ36×8	K4	900	35	0.18	200	1600	2000	8	-50	55	60
Φ36×10	K5	1200	35	0.13	200	1600	2000	4.8	-50	55	60
Φ36×12	K1	1800	35	0.08	500	4000	5000	4	-25	50	60
Φ36×16	K2	2700	35	0.07	500	4000	5000	2	-35	50	60
Φ36×18	K6	3600	40	0.05	500	4000	5000	2	-25	50	60
Φ36×20	K7	3600	40	0.035	500	4000	5000	2	-25	50	60
Φ36×24	K8	4500	40	0.035	750	6000	7500	2	-55	65	70

HIGH ENERGY HYBRID TANTALUM CAPACITOR

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%）	ESR （Ω）	Leak current（μA）			Imp.（Ω） 100Hz	Capacitance change （%）100Hz		
			100Hz	1kHz	25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Rated voltage(Ur)125V category voltageUc75V surge voltage(Us)137.5V											
Φ16×8	C1	80	20	0.7	12	96	120	20	-30	45	50
Φ16×10	C2	100	20	0.5	28	224	280	17	-30	45	50
Φ16×12	C3	160	20	0.42	28	224	280	12	-30	45	50
Φ16×16	C4	240	20	0.4	50	400	500	5	-30	45	50
Φ22×8	H1	220	25	0.56	30	240	300	6	-30	45	50
Φ22×10	H3	300	25	0.48	40	320	400	5	-30	45	50
Φ22×12	H2	440	25	0.4	60	480	600	3	-30	45	50
Φ22×16	H4	660	25	0.24	80	640	800	2	-30	45	50
Φ22×18	H5	900	25	0.16	80	640	800	1.8	-30	45	50
Φ22×20	H6	880	25	0.13	150	1200	1500	1.5	-30	45	50
Φ36×8	K4	800	35	0.3	200	1600	2000	8	-40	15	20
Φ36×10	K5	1100	35	0.2	300	2400	3000	6	-40	15	20
Φ36×12	K1	1600	35	0.15	300	2400	3000	5	-40	15	20
Φ36×16	K2	2400	35	0.1	400	3200	4000	2.5	-30	10	20
Φ36×18	K6	3300	35	0.075	500	4000	5000	2.5	-20	10	20
Φ36×20	K7	3300	35	0.05	500	4000	5000	2.5	-20	10	20
Φ36×24	K8	4000	35	0.05	600	4800	6000	2.5	-30	45	50

Measurement Conditions

1. Capacitance and Loss: Measurement frequency 100 Hz, AC signal 1 V, DC bias 2.2 V;

2. Leakage Current: Rated voltage, charging time 5 minutes;

3. Equivalent Series Resistance: Measurement frequency 1 kHz, AC signal 1 V, DC bias 2.2 V.

CBES

flange , tantalum case, hermetic Seal,
high temperature 150℃

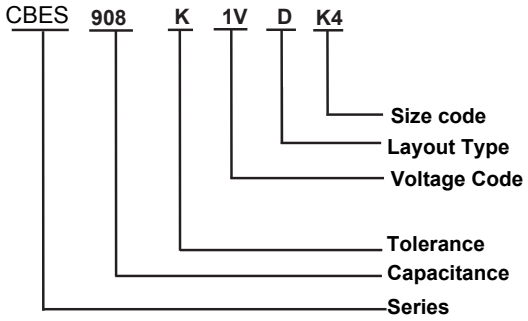
● High energy density, capable of functioning as a battery in energy conversion circuits and power pulse circuits, providing functions such as energy storage, power outage delay, and filtering for the circuits;
● Temperature range: -55℃ to +150℃ (applying the category voltage during use from 85℃ to 150℃).
● Standard: GJB 733B-201

Application

Suitable for DC, pulsating and low ripple circuits used in military electronics with high reliability requirements such as aviation, aerospace,
weapons, satellites, radars, and oil drilling equipment.

CBES is a hybrid capacitor composed of tantalum electrolytic capacitors and chemical capacitors. Its maximum operating temperature is 150℃.
It can play the role of a battery in energy conversion circuits and power pulse circuits. It can be charged and discharged infinitely, serving functions such as power buffering, energy absorption, energy replenishment, and power-off delay for the circuit.

PART NUMBER EXAMPLE



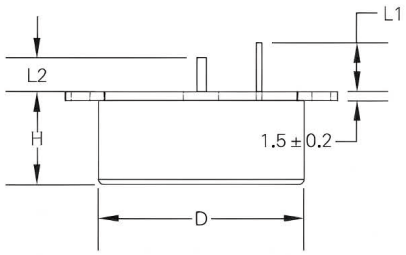


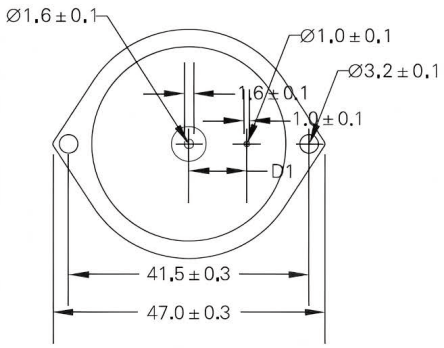
DIMENSION

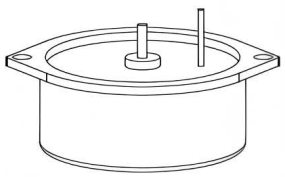
Series	Case	D±0.50	H±0.50	L1min	L2±0.76	D1±0.38	Layout
CBES	K4	Φ36	8	7	5.84	10.16	E
	K5		10				
	K1		12				
	K2		16				
	K6		18				
	K7		20				
	K8		24				

HIGH ENERGY HYBRID TANTALUM CAPACITOR

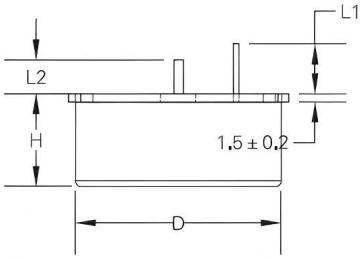
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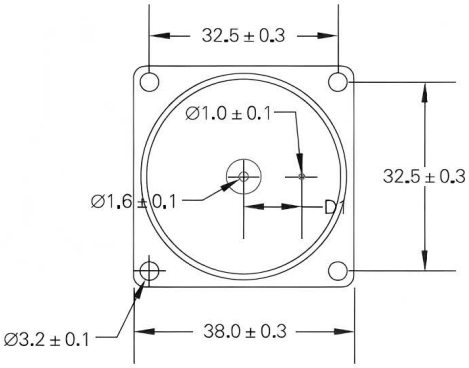


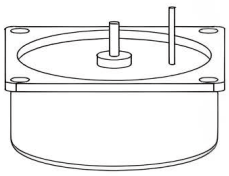




layout E







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CBES

PARAMETER SHEET

Dimension	Case code	Cap. （μF）	MAX.								
			Tg% 100Hz	ESR （Ω） 1kHz	Leak current uA			Imp.（Ω） 100Hz	Capacitance change（%）100Hz		
					25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Rated voltage (Ur)10V category voltage (Uc)6V surge voltage(Us)11V											
Φ36×8	K4	40000	180	0.07	150	1200	1500	2	-80	80	80
Φ36×10	K5	50000	180	0.05	200	1600	2000	1.2	-80	80	80
Φ36×12	K1	80000	180	0.03	300	2400	3000	1	-80	80	85
Φ36×16	K2	120000	180	0.03	400	3200	4000	1	-80	80	85
Φ36×18	K6	150000	190	0.025	400	3200	4000	1	-80	80	85
Φ36×20	K7	160000	190	0.025	500	4000	5000	1	-80	80	85
Φ36×24	K8	200000	190	0.025	500	4000	5000	1	-80	85	90
Rated voltage (Ur)16V category voltage (Uc)9.6V surge voltage(Us)17.6V											
Φ36×8	K4	24000	160	0.08	150	1200	1500	2.0	-80	75	80
Φ36×10	K5	30000	160	0.05	250	2000	2500	1.2	-80	75	80
Φ36×12	K1	48000	165	0.03	300	2400	3000	1.0	-80	80	80
Φ36×16	K2	72000	165	0.03	400	3200	4000	1.0	-80	80	80
Φ36×18	K6	90000	170	0.025	400	3200	4000	1.0	-80	80	80
Φ36×20	K7	96000	170	0.025	500	4000	5000	1.0	-80	80	80
Φ36×24	K8	120000	170	0.025	600	4800	6000	1.0	-80	85	90
Rated voltage (Ur)25V category voltage (Uc)15V surge voltage(Us)27.5V											
Φ36×8	K4	15000	120	0.08	150	1200	1500	2.0	-80	75	80
Φ36×10	K5	18000	120	0.05	250	2000	2500	1.2	-80	75	80
Φ36×12	K1	30000	130	0.03	300	2400	3000	1.0	-70	70	80

CBES

Dimension	Case code	Cap. （μF）	MAX.								
			Tg% 100Hz	ESR （Ω） 1kHz	Leak current uA			Imp.（Ω） 100Hz	Capacitance change（%）100Hz		
					25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Φ36×16	K2	45000	130	0.03	400	3200	4000	1.0	-70	70	80
Φ36×18	K6	54000	140	0.035	500	4000	5000	1.0	-70	70	80
Φ36×20	K7	60000	140	0.025	500	4000	5000	1.0	-70	70	80
Φ36×24	K8	75000	140	0.025	600	4800	6000	1.0	-75	80	85
Rated voltage (Ur)35V category voltage (Uc)21V surge voltage(Us)38.5V											
Φ36×8	K4	9000	90	0.08	150	1200	1500	2.0	-80	75	80
Φ36×10	K5	12000	90	0.05	250	2000	2500	1.0	-80	75	80
Φ36×12	K1	18000	95	0.03	300	2400	3000	1.0	-70	70	80
Φ36×16	K2	27000	95	0.03	400	3200	4000	1.0	-70	70	80
Φ36×18	K6	36000	100	0.035	400	3200	4000	1.0	-70	70	80
Φ36×20	K7	36000	100	0.025	500	4000	5000	1.0	-70	70	80
Φ36×24	K8	45000	100	0.025	500	4000	5000	1.0	-75	80	85
Rated voltage (Ur)50V category voltage (Uc)30V surge voltage(Us)55V											
Φ36×8	K4	6000	65	0.10	150	1200	1500	5.0	-85	65	70
Φ36×10	K5	8000	65	0.07	200	1600	2000	3.0	-85	65	70
Φ36×12	K1	12000	70	0.04	300	2400	3000	2.5	-60	60	70
Φ36×16	K2	18000	70	0.04	400	3200	4000	1.5	-60	60	70
Φ36×18	K6	24000	75	0.035	400	3200	4000	1.5	-60	60	70
Φ36×20	K7	24000	75	0.025	500	4000	5000	1.5	-60	60	70
Φ36×24	K8	30000	75	0.025	600	4800	6000	1.5	-75	70	75
Rated voltage (Ur)63V category voltage (Uc)37.8V surge voltage(Us)69.3V											
Φ36×8	K4	3000	45	0.15	170	1360	1500	5.0	-85	65	70
Φ36×10	K5	4000	45	0.10	200	1600	2000	3.0	-85	65	70
Φ36×12	K1	6000	50	0.06	300	2400	3000	2.5	-60	60	70
Φ36×16	K2	9000	50	0.05	400	3200	4000	1.5	-60	60	70

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Dimension	Case code	Cap. （μF）	MAX.								
			Tg% 100Hz	ESR （Ω） 1kHz	Leak current uA			Imp.（Ω） 100Hz	Capacitance change（%）100Hz		
					25℃	125℃	150℃	-55℃	-55℃	125℃	150℃
Φ36×18	K6	12000	55	0.035	400	3200	4000	1.5	-60	60	70
Φ36×20	K7	12000	55	0.035	400	4000	5000	1.5	-60	60	70
Φ36×24	K8	15000	55	0.035	500	4800	6000	1.5	-75	70	75
Rated voltage (Ur)80V category voltage (Uc)48V surge voltage(Us)88V											
Φ36×8	K4	2000	40	0.15	200	1600	2000	5	-65	50	65
Φ36×10	K5	3000	40	0.1	400	3200	4000	3	-65	50	65
Φ36×12	K1	4000	40	0.06	500	4000	5000	2.5	-30	55	65
Φ36×16	K2	6000	40	0.05	500	4000	5000	2	-50	55	65
Φ36×18	K6	8000	45	0.04	500	4000	5000	2	-30	55	65
Φ36×20	K7	8000	45	0.035	500	4000	5000	2	-30	55	65
Φ36×24	K8	10000	45	0.035	600	4800	6000	2	-65	70	70
Rated voltage (Ur)100V category voltage (Uc)60V surge voltage(Us)110V											
Φ36×8	K4	900	35	0.18	200	1600	2000	8	-50	55	60
Φ36×10	K5	1200	35	0.13	200	1600	2000	4.8	-50	55	60
Φ36×12	K1	1800	35	0.08	500	4000	5000	4	-25	50	60
Φ36×16	K2	2700	35	0.07	500	4000	5000	2	-35	50	60
Φ36×18	K6	3600	40	0.05	500	4000	5000	2	-25	50	60
Φ36×20	K7	3600	40	0.035	500	4000	5000	2	-25	50	60
Φ36×24	K8	4500	40	0.035	750	6000	7500	2	-55	65	70
Rated voltage (Ur)125V category voltage (Uc)675V surge voltage (Us)137.5V											
Φ36×8	K4	800	35	0.3	200	1600	2000	8.0	-40	15	20
Φ36×10	K5	1100	35	0.2	300	2400	3000	6.0	-40	15	20
Φ36×12	K1	1600	35	0.15	300	2400	3000	5.0	-40	15	20
Φ36×16	K2	2400	35	0.1	400	3200	4000	2.5	-30	10	20
Φ36×18	K6	3300	35	0.075	500	4000	5000	2.5	-30	10	20

CBES

Dimension	Case code	Cap. （μF）	MAX.								
			Tg% 100Hz	ESR （Ω） 1kHz	Leak current uA			Imp.（Ω） 100Hz -55℃	Capacitance change（%）100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
Φ36×20	K7	3300	35	0.05	500	4000	5000	2.5	-30	10	20
Φ36×24	K8	4000	35	0.05	600	4800	6000	2.5	-30	45	50

Measurement conditions

1. Capacity and loss: Measurement frequency 100HZ, AC signal 1V, DC bias 2.2V;

2. Leakage current: Rated voltage, charging time 5 minutes;

3. Equivalent series resistance: Measurement frequency 1KHZ, AC signal 1V, DC bias 2.2V。

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CBEQ

high temperature 150℃

● High-strength insulated metal housing packaging, rectangular shape, one-way output, modular structure, with polarity;
● Temperature range: -55℃ to +150℃ (category voltage should be applied when the temperature is between 85℃ and 150℃);
● Standard: GJB 733B-201

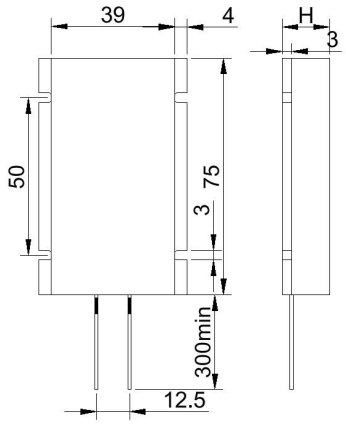
Application

It is applicable to the circuits of military electronic equipment with high reliability requirements such as aviation, aerospace,
weapons, satellites, radars, as well as oil drilling equipment and high-end civilian equipment. It can be used for energy storage,
power failure delay, filtering and power compensation.

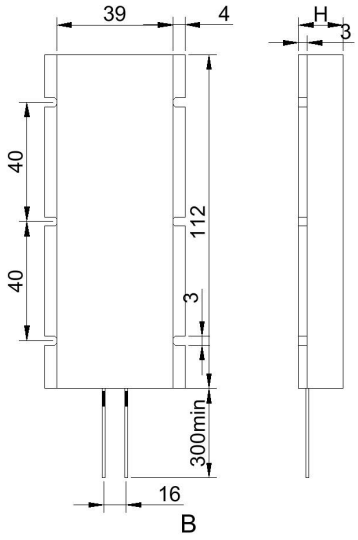
CBEQ is a hybrid capacitor composed of tantalum electrolytic capacitors and chemical capacitors. Its maximum operating temperature is 150℃.
It can play the role of a battery in energy conversion circuits and power pulse circuits. It can be charged and discharged infinitely,
serving functions such as power buffering, energy absorption, energy replenishment, and power-off delay for the circuit.



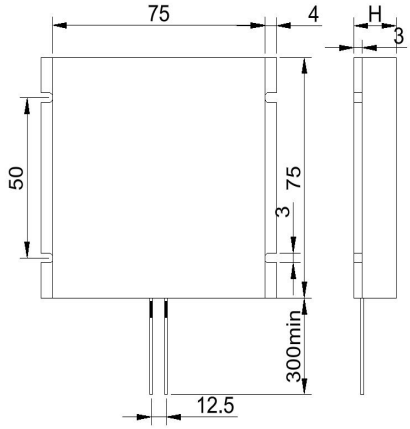
OUTLINE



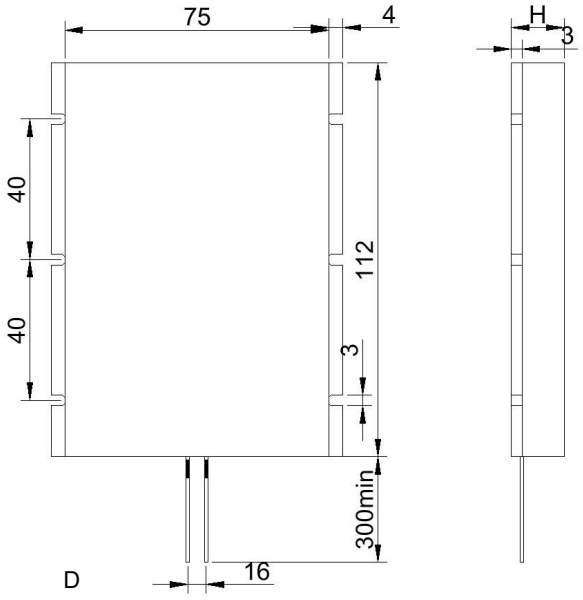
A



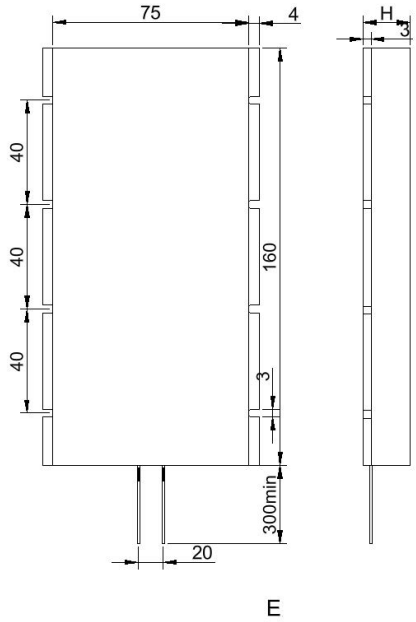
B



C



D



E

CBEQ

Dimension （±1mm)				
Series	Case code	L (mm)	W (mm)	H (mm)
CBEQ	A1	75	39	14
	A2	75	39	18
	A3	75	39	23
	A4	75	39	25
	B1	112	39	14
	B2	112	39	18
	B3	112	39	23
	B4	112	39	25
	C1	75	75	14
	C2	75	75	18
	C3	75	75	23
	C4	75	75	25
	D1	112	75	14
	D2	112	75	18
	D3	112	75	23
	D4	112	75	25
	E1	160	75	14
	E2	160	75	18
	E3	160	75	23
	E4	160	75	25

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PARAMETER SHEET

Case code	L*W*H	Ur （V）	Nominal Cr （uF）	ESR 1kHz	LC（μA）	weight（g）
A3	75*39*23	10	400000	0.025	600	300
B3	112*39*23	10	600000	0.025	900	450
C3	75*75*23	10	800000	0.025	1200	600
D3	112*75*23	10	1200000	0.025	1800	900
E3	160*75*23	16	1600000	0.025	2400	1200
A3	75*39*23	16	240000	0.025	600	300
B3	112*39*23	16	360000	0.025	900	450
C3	75*75*23	16	480000	0.025	1200	600
D3	112*75*23	16	720000	0.025	1800	900
E3	160*75*23	25	960000	0.025	2400	1200
A3	75*39*23	25	140000	0.025	600	300
B3	112*39*23	25	210000	0.025	900	450
C3	75*75*23	25	280000	0.025	1200	600
D3	112*75*23	25	420000	0.025	1800	900
E3	160*75*23	25	560000	0.025	2400	1200
A3	75*39*23	35	96000	0.025	600	300
B3	112*39*23	35	140000	0.025	900	450
C3	75*75*23	35	200000	0.025	1200	600
D3	112*75*23	35	280000	0.025	1800	900
E3	160*75*23	35	400000	0.025	2400	1200
A3	75*39*23	50	60000	0.025	800	320
B3	112*39*23	50	90000	0.025	1200	480
C3	75*75*23	50	120000	0.025	1600	640
D3	112*75*23	50	180000	0.025	2400	960
E3	160*75*23	50	240000	0.025	3200	1280
A3	75*39*23	63	32000	0.035	800	320
B3	112*39*23	63	48000	0,035	1200	480

CBEQ

Case code	L*W*H	Ur （V）	Nominal Cr （uF）	ESR 1kHz	LC（μA）	weight（g）
C3	75*75*23	63	64000	0,035	1600	640
D3	112*75*23	63	96000	0.035	2400	960
E3	160*75*23	63	130000	0,035	3200	1280
A3	75*39*23	80	22000	0.035	1000	320
B3	112*39*23	80	33000	0.035	1500	480
C3	75*75*23	80	44000	0.035	2000	640
D3	112*75*23	80	66000	0,035	3000	960
E3	160*75*23	80	88000	0,035	4000	1280
A3	75*39*23	100	15000	0.035	1000	320
B3	112*39*23	100	22000	0,035	1500	480
C3	75*75*23	100	30000	0.035	2000	640
D3	112*75*23	100	44000	0.035	3000	960
E3	160*75*23	100	60000	0.035	4000	1280
A3	75*39*23	110	12000	0.045	1000	320
B3	112*39*23	110	18000	0.045	1500	480
C3	75*75*23	110	24000	0.045	2000	640
D3	112*75*23	110	36000	0.045	3000	960
E3	160*75*23	110	48000	0.045	4000	1280
A3	75*39*23	125	9000	0.05	1000	320
B3	112*39*23	125	13000	0.05	1500	480
C3	75*75*23	125	18000	0.05	2000	640
D3	112*75*23	125	26000	0.05	3000	960
E3	160*75*23	125	36000	0.05	4000	1280
A1	75*39*14	150	1500	0.15	300	200
A2	75*36*18	150	3000	0.12	400	250
A3	75*39*23	150	4500	0.08	500	300
A4	75*39*25	150	6000	0.07	500	320

CBEQ

Case code	L*W*H	Ur （V）	Nominal Cr （uF）	ESR 1kHz	LC（μA）	weight（g）
C4	75*75*25	150	12000	0.07	1000	640
E4	160*75*25	150	24000	0.04	2000	1280
A1	75*39*14	200	950	0.25	200	200
A2	75*36*18	200	1900	0.12	400 250	250
A3	75*39*23	200	2800	0.1	500	300
A4	75*39*25	200	3700	0.08	500	320
C4	75*75*25	200	7400	0.07	1000	640
E4	160*75*25	200	15000	0.04	2000	1280
A1	75*39*14	250	550	0.4	200	200
A2	75*36*18	250	1100	0.17	400	250
A3	75*39*23	250	1600	0.15	500	300
A4	75*39*25	250	2200	0.1	500	320
C4	75*75*25	250	4400	0.1	1000	640
E4	160*75*25	250	8800	0.05	2000	1280
B1	112*39*14	300	630	0.375	200	300
B2	112*39*18	300	1200	0.18	400	350
B3	112*39*23	300	1800	0.15	500	450
B4	112*39*25	300	2500	0.1	500	480
D3	112*75*23	300	3750	0.15	1000	900
D4	112*75*25	300	5000	0.1	1000	960
C1	75*75*14	400	500	0.4	200	350
C2	75*75*18	400	950	0.24	400	450
C3	75*75*23	400	1250	0.2	500	600
C4	75*75*25	400	1800	0.14	500	640
E3	160*75*23	400	2450	0.12	1000	1200
E4	160*75*25	400	3600	0.14	1000	1280

CBEQ

Case code	L*W*H	Ur （V）	Nominal Cr （uF）	ESR 1kHz	LC（μA）	weight（g）
C1	75*75*14	500	270	1	200	350
C2	75*75*18	500	550	0.425	400	450
C3	75*75*23	500	820	0.375	500	600
C4	75*75*25	500	1100	0.25	500	640
E4	160*75*25	500	2200	0.25	1000	1280

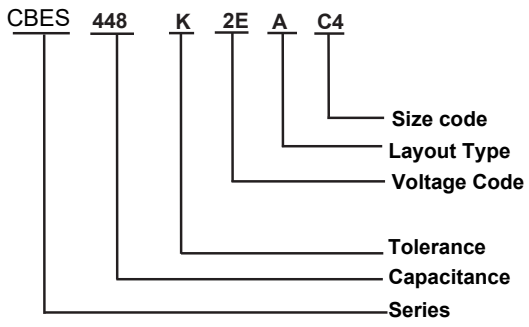
Measurement conditions

1. Capacity and loss: Measurement frequency 100HZ, AC signal 1V, DC bias 2.2V;

2. Leakage current: Rated voltage, charging time 5 minutes;

3. Equivalent series resistance: Measurement frequency 1KHZ, AC signal 1V, DC bias 2.2V.

PART NUMBER EXAMPLE



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CBEP

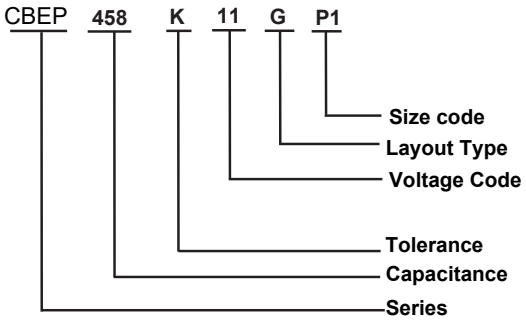
tantalum case, hermetic Seal,
high temperature 150℃

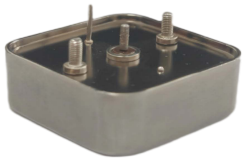
CBEP is a hybrid capacitor composed of tantalum electrolytic capacitors and chemical capacitors, utilizing materials and processes capable of withstanding higher temperatures,
with a maximum operating temperature of 150°C. It can function as a battery in energy conversion circuits and power pulse circuits, enabling unlimited charge and discharge cycles.
It serves various roles in circuits, including power buffering, energy absorption, energy replenishment, and power interruption delay.

- The energy density per unit volume is high, and it can play the role of a battery in energy conversion circuits and power pulse circuits, providing functions such as energy storage, power failure delay, and filtering for the circuits;
- Temperature range: -55℃ to +150℃ (when using the category voltage, apply it within 85℃ to 150℃).
- Standard: GJB 733B-201

Application
Suitable for DC, pulsating and low ripple circuits used in military electronic equipment with high reliability requirements such as aviation, aerospace, weapons, satellites, radars, and oil drilling equipment.

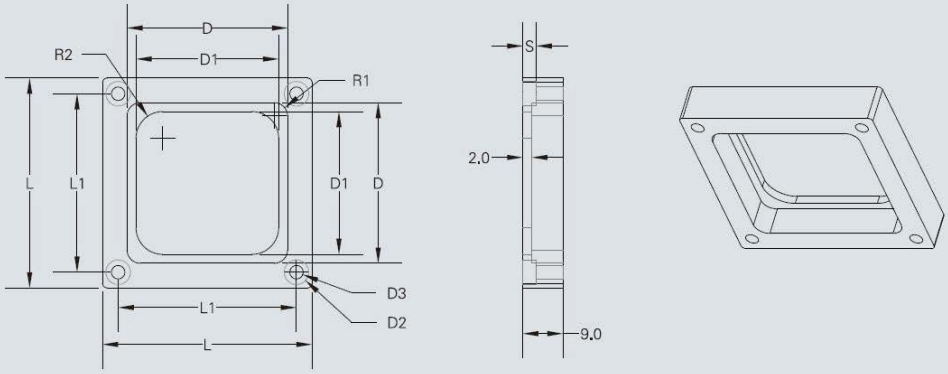
PART NUMBER EXAMPLE







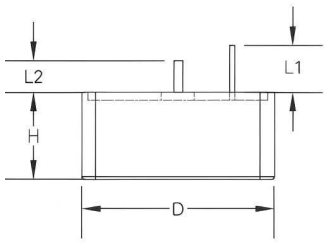
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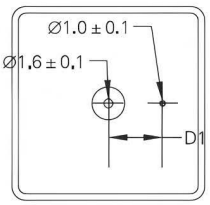


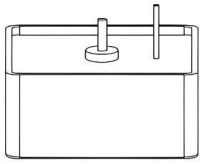
Dimension	D	L	L1	D1	D2	D3	R1	R2	S
20×20	20.5	30	24	16	5.5	3	2	4	2
36×36	36	47	39	32	7	5	4	6	3

CBEP

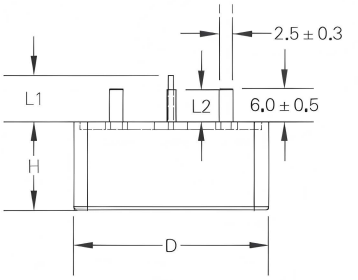
layout F

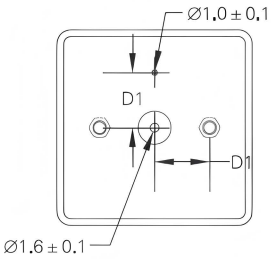


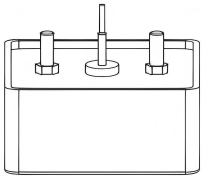




layout G / two ∅2.5mm screws no bracket requied







DIMENSION

Series	Case	D±0.50	H±0.50	L1min	L2±0.76	D1±0.38	installation bracket
CBEP	Q1	20	8	7	5.84	6	F（F1）、G
	Q2		10				
	Q3		12				
	Q4		16				
	Q5		18				
	Q6		20				
	P1	36	8	7	5.84	10.16	
	P2		10				
	P3		12				
	P4		16				
	P5		18				
	P6		20				
	P7		24				

PARAMETER SHEET

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%） 100Hz	ESR （Ω） 1kHz	Leak current（μA）			Imp.（Ω） 100Hz -55℃	Capacitance change（%） 100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
Rated voltage (Ur) 10V, category voltage Uc 6V , surge voltage (Us)11V											
36×36×8	P1	45000	130	0.1	300	2400	3000	3	-80	85	90
36×36×10	P2	60000	130	0.08	400	3200	4000	1.8	-80	85	90
36×36×12	P3	90000	130	0.05	500	4000	5000	1.5	-80	85	90
36×36×16	P4	135000	130	0.04	600	4800	6000	1	-80	80	85
36×36×18	P5	180000	130	0.025	600	4800	6000	1	-80	80	85
36×36×20	P6	180000	130	0.025	700	5600	7000	1	-80	85	90
36×36×24	P7	225000	130	0.025	700	5600	7000	1	-80	85	90
Rated voltage(Ur)16V category voltageUc9.6V surge voltage(Us)17.6V											
20×20×8	Q1	9000	110	0.25	110	880	1100	8	-80	85	90
20×20×10	Q2	11000	110	0.2	200	1600	2000	4.8	-80	85	90
20×20×12	Q3	18000	110	0.1	220	1760	2200	4	-80	85	90
20×20×16	Q4	27000	110	0.1	330	2640	3300	2.7	-80	85	90
20×20×18	Q5	33000	110	0.07	600	4800	6000	2.7	-80	85	90
20×20×20	Q6	36000	110	0.07	440	3520	4400	2	-80	85	90
36×36×8	P1	35000	110	0.1	200	1600	2000	3	-80	85	90
36×36×10	P2	45000	110	0.08	300	2400	3000	1.8	-80	85	90
36×36×12	P3	70000	110	0.05	300	2400	3000	1.5	-80	85	90
36×36×16	P4	105000	110	0.04	400	3200	4000	1	-80	80	80
36×36×18	P5	135000	110	0.025	500	4000	5000	1	-80	80	80
36×36×20	P6	140000	110	0.025	500	4000	5000	1	-80	85	90
36×36×24	P7	175000	110	0.025	600	4800	6000	1	-80	85	90

CBEP

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%） 100Hz	ESR （Ω） 1kHz	Leak current（μA）			Imp.（Ω） 100Hz -55℃	Capacitance change（%） 100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
Rated voltage(Ur)25V category voltageUc15V surge voltage(Us)27.5V											
20×20×8	Q1	5000	85	0.25	125	1000	1250	8	-75	80	85
20×20×10	Q2	6000	85	0.2	180	1440	1800	4.8	-75	80	85
20×20×12	Q3	10000	85	0.1	250	2000	2500	4	-75	80	85
20×20×16	Q4	15000	85	0.1	350	2800	3500	2.7	-75	80	85
20×20×18	Q5	18000	85	0.07	350	2800	3500	2.7	-75	80	85
20×20×20	Q6	20000	85	0.07	500	4000	5000	2	-75	80	85
36×36×8	P1	18000	85	0.15	200	1600	2000	3	-75	80	85
36×36×10	P2	25000	85	0.11	300	2400	3000	1.8	-75	80	85
36×36×12	P3	36000	85	0.07	400	3200	4000	1.5	-70	70	80
36×36×16	P4	54000	85	0.06	500	4000	5000	1	-70	70	80
36×36×18	P5	72000	85	0.035	600	4800	6000	1	-70	70	80
36×36×20	P6	72000	85	0.025	600	4800	6000	1	-75	80	85
36×36×24	P7	90000	85	0.025	700	5600	7000	1	-75	80	85
Rated voltage(Ur)35V category voltageUc21V surge voltage(Us)38.5V											
20×20×8	Q1	3500	55	0.25	120	960	1200	8	-75	80	85
20×20×10	Q2	4500	55	0.2	200	1600	2000	4.8	-75	80	85
20×20×12	Q3	7000	55	0.1	240	1920	2400	4	-75	80	85
20×20×16	Q4	10500	55	0.1	360	2880	3600	2.7	-75	80	85
20×20×18	Q5	13500	55	0.07	400	3200	4000	2.7	-75	80	85
20×20×20	Q6	14000	55	0.07	480	3840	4800	2	-75	80	85
36×36×8	P1	12000	55	0.15	300	2400	3000	3	-75	80	85
36×36×10	P2	16000	55	0.11	300	2400	3000	1.8	-75	80	85
36×36×12	P3	24000	55	0.07	400	3200	4000	1.5	-75	80	85

CBEP

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%） 100Hz	ESR （Ω） 1kHz	Leak current（μA）			Imp.（Ω） 100Hz -55℃	Capacitance change（%） 100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
36×36×16	P4	36000	55	0.06	400	3200	4000	1	-70	70	80
36×36×18	P5	48000	55	0.035	400	3200	4000	1	-70	70	80
36×36×20	P6	48000	55	0.025	500	4000	5000	1	-75	80	85
36×36×24	P7	60000	55	0.025	600	4800	6000	1	-75	80	85
Rated voltage(Ur)50V category voltageUc30V surge voltage(Us)55V											
20×20×8	Q1	2600	45	0.25	100	800	1000	10	-75	70	75
20×20×10	Q2	3500	45	0.2	150	1200	1500	6	-75	70	75
20×20×12	Q3	5200	45	0.1	200	1600	2000	5	-75	70	75
20×20×16	SC4	7800	45	0.1	300	2400	3000	3.3	-75	70	75
20×20×18	SC5	10500	45	0.07	300	2400	3000	3.3	-75	70	75
20×20×20	SC6	11000	45	0.07	400	3200	4000	2.5	-75	70	75
36×36×8	P1	7500	45	0.15	200	1600	2000	4.5	-75	70	75
36×36×10	P2	11000	45	0.11	300	2400	3000	2.7	-75	70	75
36×36×12	P3	15000	45	0.07	300	2400	3000	2.25	-75	70	75
36×36×16	P4	22500	45	0.06	400	3200	4000	1.5	-60	60	70
36×36×18	P5	33000	45	0.035	400	3200	4000	1.5	-60	60	70
36×36×20	P6	30000	45	0.025	500	4000	5000	1.5	-75	70	75
36×36×24	P7	37500	45	0.025	600	4800	6000	1.5	-75	70	75
Rated voltage(Ur)63V category voltageUc37.8V surge voltage(Us)69.3V											
20×20×8	Q1	1600	35	0.35	60	480	600	10	-70	70	75
20×20×10	Q2	2200	35	0.3	80	640	800	6	-70	70	75
20×20×12	Q3	3200	35	0.2	120	960	1200	5	-70	70	75
20×20×16	Q4	4800	35	0.10	160	1280	1600	3.3	-70	70	75
20×20×18	Q5	6400	35	0.16	160	1280	1600	3.3	-70	70	75

CBEP

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%） 100Hz	ESR （Ω） 1kHz	Leak current（μA）			Imp.（Ω） 100Hz -55℃	Capacitance change（%） 100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
20×20×20	Q6	6400	35	0.1	250	2000	2500	2.5	-70	70	75
36×36×8	P1	4500	35	0.15	250	2000	2500	4.5	-70	70	75
36×36×10	P2	6000	35	0.11	300	2400	3000	2.7	-70	70	75
36×36×12	P3	9000	35	0.07	300	2400	3000	2.25	-70	70	75
36×36×16	P4	13500	35	0.06	400	3200	4000	1.5	-50	60	70
36×36×18	P5	18000	35	0.035	500	4000	5000	1.5	-50	60	70
36×36×20	P6	18000	35	0.035	500	4000	5000	1.5	-70	70	75
36×36×24	P7	22500	35	0.035	600	4800	6000	1.5	-70	70	75
Rated voltage(Ur)80V category voltageUc48V surge voltage(Us)88V											
20×20×8	Q1	1100	30	0.36	65	520	650	10	-65	70	70
20×20×10	Q2	1500	30	0.3	80	640	800	6	-65	70	70
20×20×12	Q3	2200	30	0.15	120	960	1200	5	-65	70	70
20×20×16	Q4	3300	30	0.16	160	1280	1600	3.3	-65	70	70
20×20×18	Q5	4500	30	0.1	160	1280	1600	3.3	-65	70	70
20×20×20	Q6	4400	30	0.1	250	2000	2500	2.5	-65	70	70
36×36×8	P1	2600	30	0.150	250	2000	2500	6	-65	70	70
36×36×10	P2	3500	30	0.120	300	2400	3000	3.6	-65	70	70
36×36×12	P3	5200	30	0.070	300	2400	3000	3	-65	70	70
36×36×16	P4	7800	30	0.060	400	3200	4000	2	-30	55	60
36×36×18	P5	10500	30	0.040	500	4000	5000	2	-30	55	65
36×36×20	P6	11000	30	0.035	500	4000	5000	2	-65	70	70
36×36×24	P7	13000	30	0.035	600	4800	6000	2	-65	70	70
Rated voltage(Ur)100V category voltageUc60V surge voltage(Us)110V											
20×20×8	Q1	600	25	0.7	40	320	400	10	-55	65	70

CBEP

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%） 100Hz	ESR （Ω） 1kHz	Leak current （μA）			Imp.（Ω） 100Hz -55℃	Capacitance change （%） 100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
20×20×10	Q2	800	25	0.6	60	480	600	6	-55	65	70
20×20×12	Q3	1200	25	0.3	80	640	800	5	-55	65	70
20×20×16	Q4	1800	25	0.3	120	960	1200	3.3	-55	65	70
20×20×18	Q5	2400	25	0.2	120	960	1200	3.3	-55	65	70
20×20×20	Q6	2400	25	0.2	160	1280	1600	2.5	-55	65	70
36×36×8	P1	1600	25	0.2	200	1600	2000	6	-55	65	70
36×36×10	P2	2200	25	0.15	250	2000	2500	3.6	-55	65	70
36×36×12	P3	3200	25	0.1	300	2400	3000	3	-55	65	70
36×36×16	P4	4800	25	0.08	400	3200	4000	2	-25	50	60
36×36×18	P5	6400	25	0.05	500	4000	5000	2	-25	50	60
36×36×20	P6	6400	25	0.035	600	4800	6000	2	-55	65	70
36×36×24	P7	8000	25	0.035	600	4800	6000	2	-55	65	70
Rated voltage(Ur)125V category voltageUc75V surge voltage(Us)137.5V											
20×20×8	Q1	400	25	0.700	30	240	300	10	-30	45	50
20×20×10	Q2	500	25	0.600	40	320	400	6	-30	45	50
20×20×12	Q3	800	25	0.400	60	480	600	5	-30	45	50
20×20×16	Q4	1200	25	0.400	80	640	800	3.3	-30	45	50
20×20×18	Q5	1500	25	0.270	80	640	800	3.3	-30	45	50
20×20×20	Q6	1600	25	0.270	150	1200	1500	2.5	-30	45	50
36×36×8	P1	1200	25	0.250	150	1200	1500	7.5	-30	45	50
36×36×10	P2	1500	25	0.200	200	1600	2000	4.5	-30	45	50
36×36×12	P3	2400	25	0.120	200	1600	2000	3.75	-30	45	50
36×36×16	P4	3600	25	0.100	300	2400	3000	2.5	-20	10	20
36×36×18	P5	4500	25	0.065	400	3200	4000	2.5	-20	10	20

CBEP

Dimension	Case code	Nominal CR （μF）	MAX.								
			Tg δ （%） 100Hz	ESR （Ω） 1kHz	Leak current（μA）			Imp.（Ω） 100Hz -55℃	Capacitance change（%） 100Hz		
					25℃	125℃	150℃		-55℃	125℃	150℃
36×36×20	P6	4800	25	0.050	400	3200	4000	2.5	-30	45	50
36×36×24	P7	6000	25	0.050	500	4000	5000	2.5	-30	45	50

Measurement conditions

1. Capacity and loss: Measurement frequency 100HZ, AC signal 1V, DC bias 2.2V

2. Leakage current: Rated voltage, charging time 5 minutes

3. Equivalent series resistance: Measurement frequency 1KHZ, AC signal 1V, DC bias 2.2V

CBEN series
High Energy Tantalum Hybrid Capacitor

Hermetic sealed & Military standard





❖ Characteristics and Application

- All tantalum case, hermetic sealed, square, small size, radial leads, Polarized
- This product is made up of tantalum capacitor and electrochemical capacitor
- Stable electric performance, high reliability, long life, large energy density per unit volume, store much energy.
- Used as battery in Energy conversion circuit and power pulse circuit, Perform Energy storage,filter, power-off delay in circuit.
- Standard:GJB733A-96,QJ/PWV500-2013,QJ/PWV519-2013,QJ/PWV518-2013

❖ Technical Performance

Temperature range:-55℃~+125℃(>85℃ use derated voltage)
Store environment temperature: -62℃~+130℃
Capacitance tolerance: K=±10%；M=±20%；Q=-10%~+30%

❖ Mechanical Performance Characteristics

Mechanical Performance Characteristics		
Item	Test and Condition	Method and Requirement
Thermal shock	GJB360B-2009, method 107, test condition A	-55℃~125℃
(Pules)Shock	GJB360B-2009, method 213, test condition G	Final peak saw-to th shock, last 11ms, peak50g
Vibration-high frequency	GJB360B-2009, method 204, test condition D	Accelerated sped 20g, frequency range, 10-2000Hz
Vibration-random	GJB360A-96, method 214, test conditionl-D	The acceleration rot mean square value as 12g,1.5h
Resistance to solder heat	GJB360B-2009, method 210，test condition B	The capacitor must withstand solder dipping of the terminals at 260 ℃ for 10 s.The capacitor must notbe visibly damaged and the electrical characteristics must not be af ected.
Solderability	GJB360B-2009, method 208	
Terminal strength	GJB360B-2009, method 208，test condition A	The capacitor terminals must withstand a 14N pul for 30s. The capacitor must not be visibly damaged and the electrical characteristics must not beaf ected.
Part markings		Marks should be clearly marked on the circumference of the case of capacitor.

HIGH ENERGY HYBRID TANTALUM CAPACITOR

CBEN series

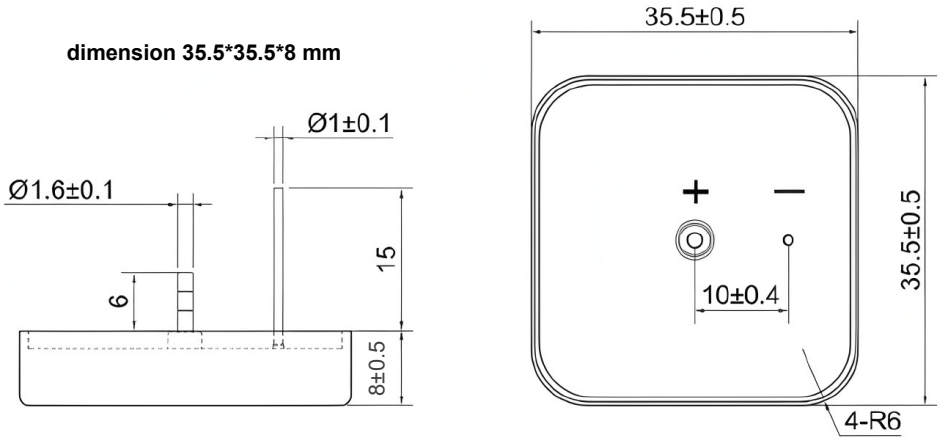
❖ Environmental Characteristics

Environmental Characteristics		
Item	Test and Condition	Method and Requirement
Hermeticity	GJB360B,menthod112,test condition D	The capacitor surface shall have no continuous bubbles within 20s from it dipped into fluorocarbon oil, two areas are not included (a. the gaps between positive tantalum wires and sleeves b. gaps between stainless steel and tantalum shell). Test should keep on if there are bubbles from the two areas to check bubbles stop or go on after 5min. Hermeticity unqualified if it still bubbling stopped and check areas around positive wire and bubbling areas with PH paper. The capacitor hermeticity unqualified if
Moisture resistance	GJB360,method106	PH paper turn red as acidic.
Altitude	GJB360B,method 105， test condition E	6V polarity Height: 45720m Air pressure: 0.15kPa,

Table 1 CBEN High Energy Tantalum Hybrid Capacitor characteristics and size: 35.5×35.5×8mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ(%) 100Hz	ESR (Ω) 1KHz	Max DCL. (μA)		IMP. (Ω)	Cap.change (%)		Max. Weight
						25℃	85℃ 125℃	100Hz -55℃	-55℃	+85℃	(9)
10	6	11	55000	180	0.05	170	1020	1.0	-75	140	65
16	9.5	17.6	35000	150	0.05	170	1020	1.0	-70	140	65
25	15	27.5	25000	120	0.05	170	1020	1.0	-65	120	65
35	20	38.5	14000	90	0.065	170	1020	1.0	-50	120	65
50	30	55	10000	65	0.07	200	1200	1.2	-45	120	65
63	38	70	5000	45	0.10	200	1200	1.4	-40	80	70
80	48	88	3300	40	0.10	200	1200	1.4	-30	80	70
85	51	93.5	3000	40	0.12	220	1320	1.6	-30	80	70
100	60	110	2200	35	0.13	220	1320	1.2	-25	60	75
110	66	121	2000	35	0.20	220	1320	2.0	-20	50	75
125	75	138	1400	35	0.20	220	1320	2.4	-18	50	80

dimension 35.5*35.5*8 mm



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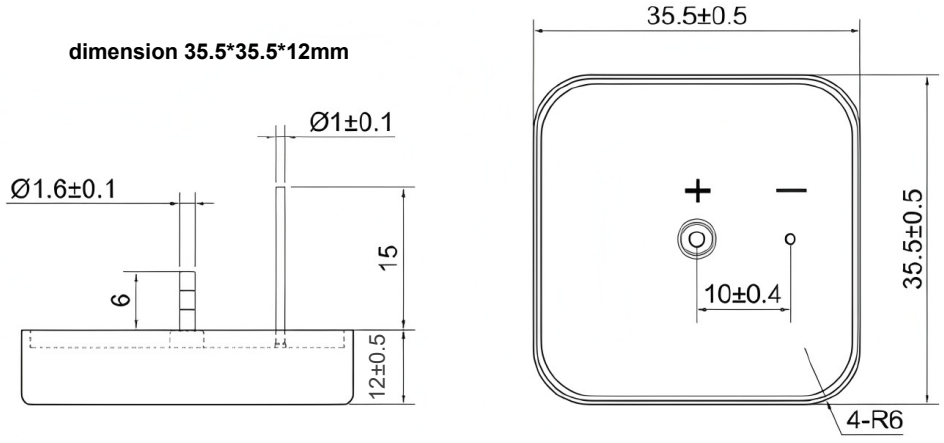
HIGH ENERGY HYBRID TANTALUM CAPACITOR

CBEN series

Table 2 CBEN High Energy Tantalum Hybrid Capacitor characteristics and size: 35.5×35.5×12mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ(%) 100Hz	ESR (Ω) 1KHz	Max DCL. (μA)		IMP. (Ω)	Cap.change (%)		Max. Weight
						25℃	85℃ 125℃	100Hz -55℃	-55℃	+85℃	(9)
10	6	11	120000	180	0.04	400	2400	1	-80	160	90
16	9.5	17.6	86000	165	0.04	400	2400	1	-80	160	90
25	15	27.5	50000	130	0.045	400	2400	1	-75	160	90
35	20	38.5	33000	95	0.05	400	2400	1	-70	160	90
50	30	55	20000	70	0.05	500	3000	12	-55	135	90
63	38	70	10000	50	0.05	500	3000	1.4	-45	90	95
80	48	88	6800	40	0.06	600	3600	1.6	-40	90	95
85	51	93.5	6000	40	0.07	600	3600	1.6	40	90	95
100	60	110	4500	35	0.08	600	3600	1.8	-30	80	100
110	66	121	4000	35	0.08	600	3600	2.0	-25	60	100
125	75	138	2800	30	0.08	600	3600	2.4	-25	50	110

dimension 35.5*35.5*12mm



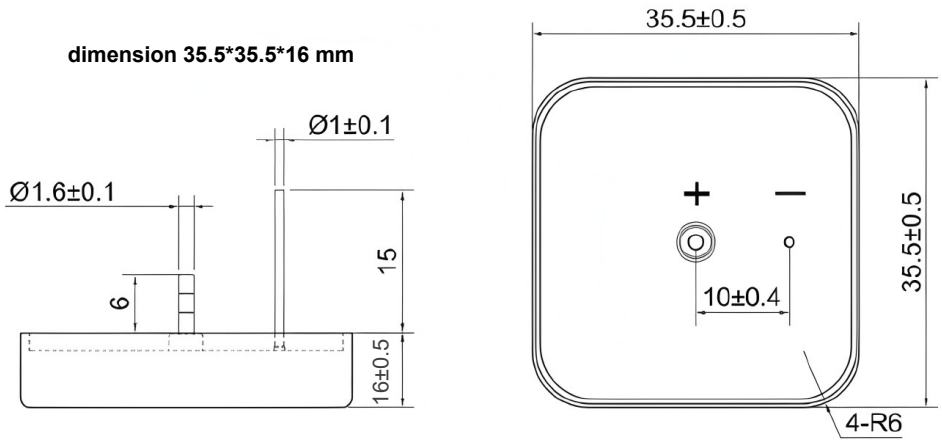
HIGH ENERGY HYBRID TANTALUM CAPACITOR

CBEN series

Table 3 CBEN High Energy Tantalum Hybrid Capacitor characteristics and size: 35.5×35.5×16mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ(%) 100Hz	ESR (Ω) 1KHz	Max DCL. (μA)		IMP. (Ω)	Cap.change (%)		Max. Weight
						25℃	85℃ 125℃	100Hz -55℃	-55℃	+85℃	(9)
10	6	11	200000	180	0.025	400	2400	1	-80	160	123
16	9.5	17.6	130000	165	0.025	400	2400	1	-80	160	123
25	15	27.5	75000	130	0.035	400	2400	1	-75	160	123
35	20	38.5	50000	95	0.035	400	2400	1	-70	160	123
50	30	55	30000	70	0.035	500	3000	1.2	-55	135	123
63	38	70	16000	50	0.035	500	3000	1.4	-45	90	125
80	48	88	10000	40	0.04	600	3600	1.6	-40	90	125
85	51	93.5	9000	40	0.05	600	3600	1.6	-40	90	125
100	60	110	7000	35	0.05	600	3600	1.8	-30	80	130
110	66	121	6000	35	0.075	600	3600	2.0	-25	60	130
125	75	138	4200	30	0.065	600	3600	2.4	-25	50	140

dimension 35.5*35.5*16 mm



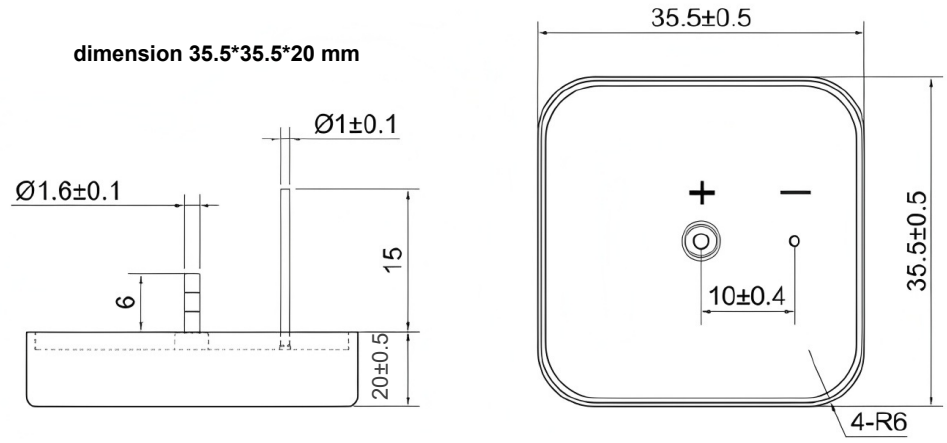
HIGH ENERGY HYBRID TANTALUM CAPACITOR

CBEN series

Table 2 CBEN High Energy Tantalum Hybrid Capacitor characteristics and size: 35.5×35.5×20mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ(%) 100Hz	ESR (Ω) 1KHz	Max DCL. (μA)		IMP. (Ω)	Cap.change (%)		Max. Weight
						25℃	85℃ 125℃	100Hz -55℃	-55℃	+85℃	(9)
10	6	11	220000	190	0.025	500	3000	1.0	-80	160	148
16	9.5	17.6	140000	170	0.025	500	3000	1.0	-80	160	148
25	15	27.5	100000	140	0.03	500	3000	1.0	-75	160	148
35	20	38.5	56000	100	0.03	500	3000	1.0	-70	160	148
50	30	55	40000	75	0.03	600	3600	1.2	-60	160	148
63	38	70	20000	55	0.035	600	3600	1.4	-50	100	150
80	48	88	14000	45	0.04	700	4200	1.6	-40	100	150
85	51	93.5	12000	45	0.04	700	4200	1.6	-40	100	150
100	60	110	9000	40	0.05	700	4200	1.8	-30	80	155
110	66	121	8000	40	0.06	700	4200	1.8	-25	60	155
125	75	138	5600	35	0.06	700	4200	2.0	-25	50	165

dimension 35.5*35.5*20 mm



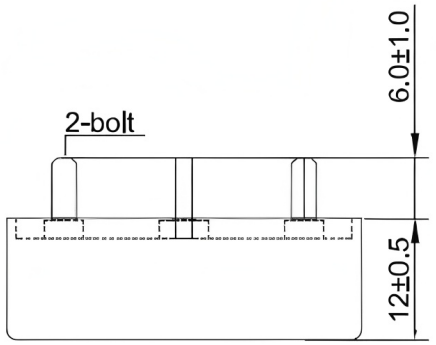
HIGH ENERGY HYBRID TANTALUM CAPACITOR

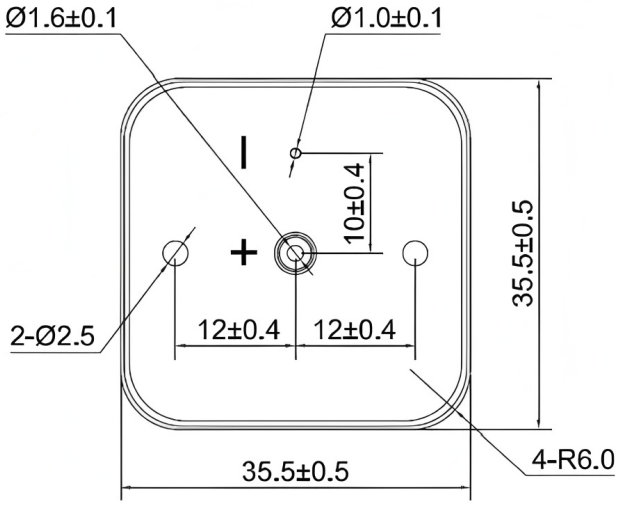
CBEN series

❖ Optional Bolt Mount

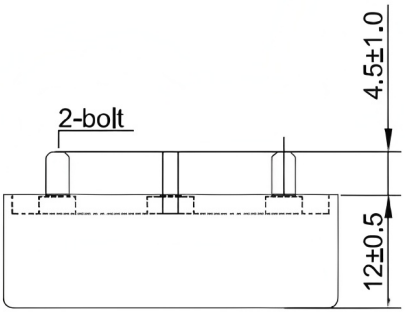
Module	Leads and bolt height/mm
Type A	6.0±1.0
Type B	4.5±1.0

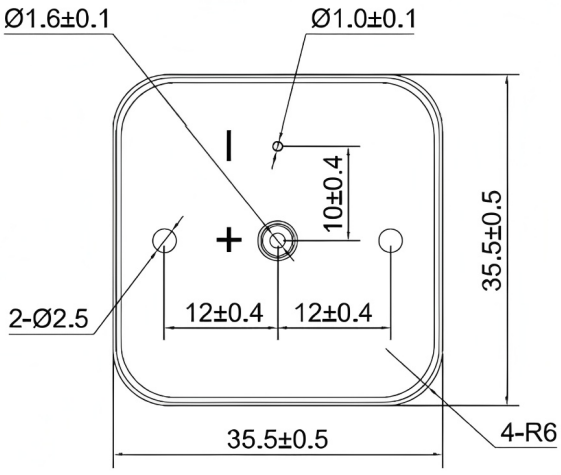
Type A





Type B

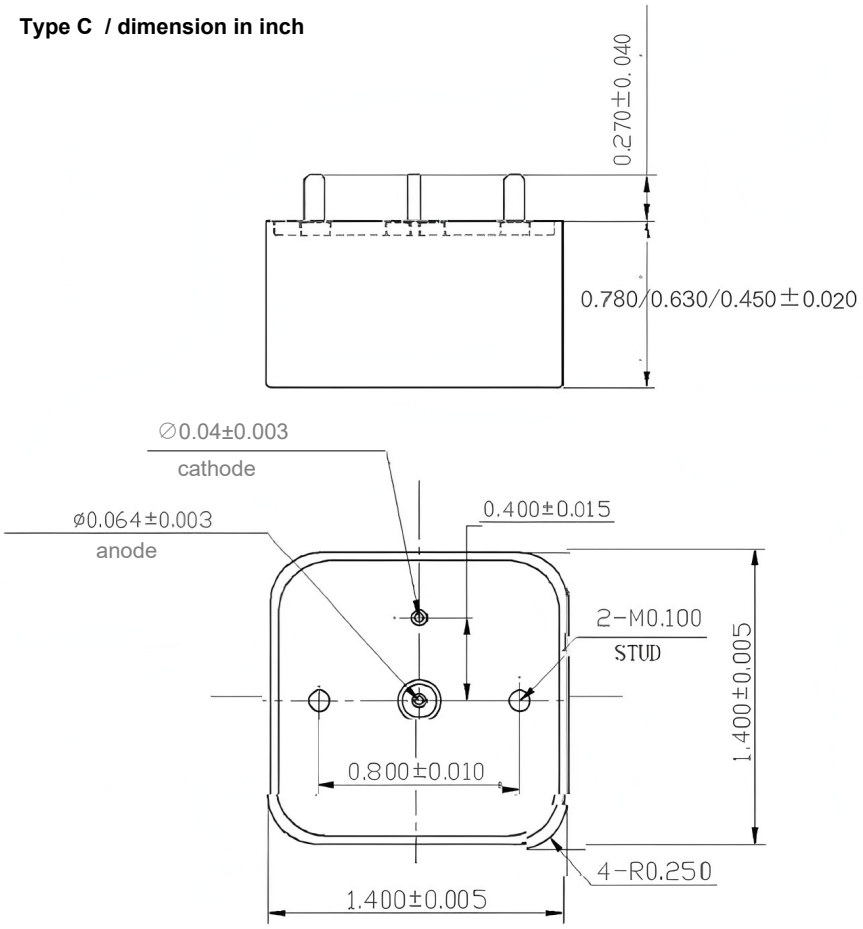




HIGH ENERGY HYBRID TANTALUM CAPACITOR

CBEN series

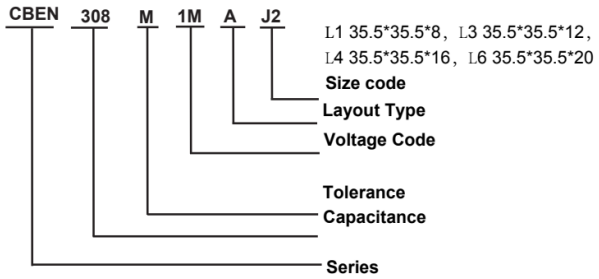
Type C / dimension in inch



Notes

- Tantalum capacitors can't been measured by multimeter. (Easily cause irreversible damage and lead to reject when reversed polarity)
- Capacitance, DF measure frequency: 100Hz,DC offset voltage U.=$2.2^{0}_{-1.0}$V,Exchange offset voltage U~=$1.0^{0}_{-0.5}$V(effective value), measure method is by series equivalent circuit.
- Measure the leakage current at 125℃, please use derated voltage. DCL read at 5 minute.
- Special size and big capacitance products, please negotiate with us.

PART NUMBER EXAMPLE



CBEO series Low DF

High Energy Tantalum Hybrid Capacitor

Hermetic sealed & Military standard





❖ Characteristics and application

- All tantalum case, hermetic sealed, square, small size, radial leads, Polarized
- This product is made up of tantalum capacitor and electrochemical capacitor
- Stable electric performance, high reliability, long life, large energy density per unit volume, store much energy.
- Used as battery in Energy conversion circuit and power pulse circuit, Perform Energy storage,filter, power-off delay in circuit. Widely use in aircraft,radar,ship,tank,satellite,aerospace equipment etc.
- Standard：GJB733B-2011 & Q/RT0.464.222-2015

❖ Technical Performance

Temperature range: -55℃~+125℃（+125℃ use derated voltage） Store environment temperature: -62℃~+130℃

Capacitance tolerance: K=±10%；M=±20%；Q=-10%~+30%

PART NUMBER EXAMPLE

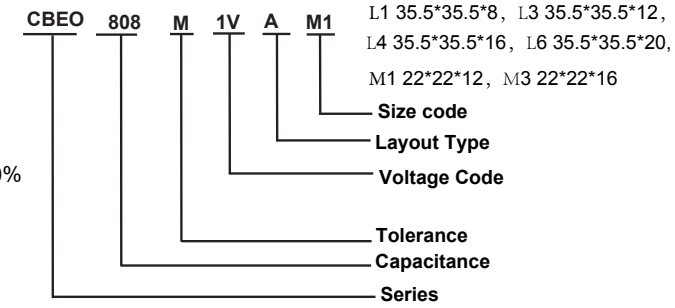


Table 1 CBEO High Energy Tantalum Hybrid Capacitor characteristics and size: φ22x22x12mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage （V）	Cap. （μF ）	tgδ(%) 100Hz	ESR （Ω） 1KHz	Max.DCL. (μA)		IMP. （Ω） 100Hz -55℃	Cap. change （%）		Max. Weight (g)
						25℃	85℃ 125℃		-55℃	+85℃	
10	6	11	24000	90	0.25	350	2100	6	-75	140	45
16	9	17.6	16000	80	0.25	400	2400	6	-75	140	45
25	15	27.5	11500	70	0.25	500	3000	6	-70	130	45
35	20	38.5	8000	60	0.25	500	3000	6	-65	120	45
50	30	55	5400	55	0.3	500	3000	7.5	-55	110	45
63	38	70	3000	45	0.3	300	1800	9	-50	70	50
80	48	88	1960	40	0.3	300	1800	10	-45	70	50
85	51	93.5	1720	40	0.3	300	1800	10	-45	70	50
100	60	110	1000	35	0.4	150	900	12	-35	65	55
110	66	121	540	25	0.4	150	900	14	-30	45	55
125	75	138	360	25	0.5	150	900	16	-25	45	55

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CBEO series Low DF

Dimension drawing 1 φ22x22x12mm

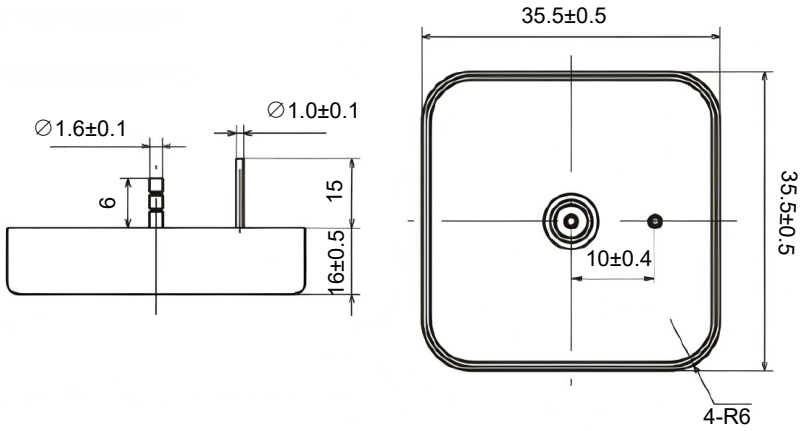
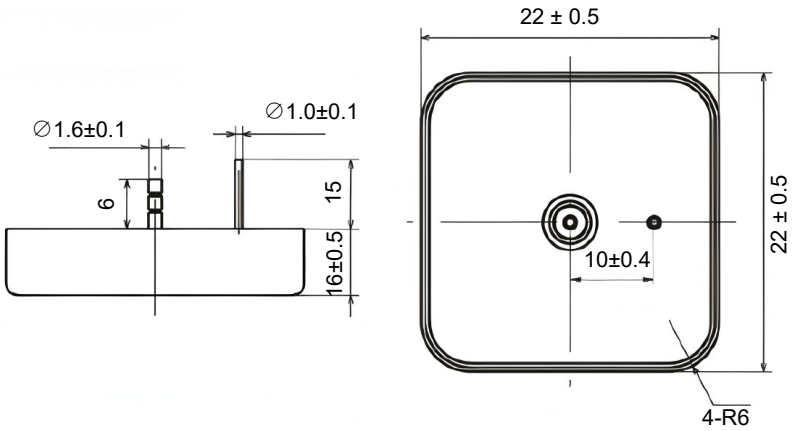


Table 2 CBEO High Energy Tantalum Hybrid Capacitor Characteristics and Size: φ22x22x16mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage （V）	Cap. （μF ）	tgδ(%) 100Hz	ESR （Ω） 1KHz	Max.DCL. (μA)		IMP. （Ω） 100Hz -55℃	Cap. change （%）		Max. Weight (g)
						25℃	85℃ 125℃		-55℃	+85℃	
10	6	11	36000	90	0.25	350	2100	5	-75	140	55
16	9	17.6	24500	80	0.25	400	2400	5	-75	140	55
25	15	27.5	17000	70	0.25	500	3000	5	-70	130	55
35	20	38.5	12000	60	0.25	500	3000	5	-65	120	55
50	30	55	8200	55	0.3	500	3000	6.5	-55	110	55
63	38	70	4500	45	0.3	300	1800	8	-50	70	60
80	48	88	3000	40	0.3	300	1800	9	-45	70	60
85	51	93.5	2600	40	0.3	300	1800	9	-45	70	60
100	60	110	1 500	35	0.4	150	900	11	-35	65	65
110	66	121	820	25	0.4	150	900	13	-30	45	65
125	75	138	540	25	0.5	150	900	15	-25	45	65

Dimension drawing 2 **φ22x22x16mm**

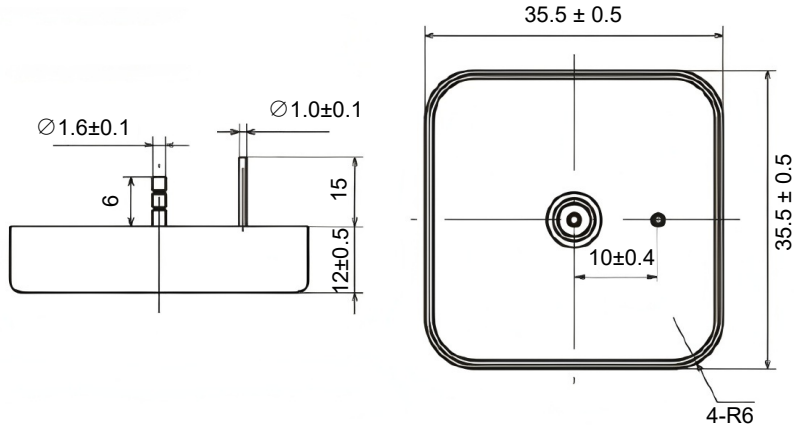


CBEO series Low DF

Table 3 CBEK High Energy Tantalum Hybrid Capacitor Characteristics and Size: φ35.5x35.5x12mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage （V）	Cap. （μF ）	tgδ(%) 100Hz	ESR （Ω） 1KHz	Max.DCL. (μA)		IMP. （Ω） 100Hz -55℃	Cap. change （%）		Max. Weight (g)
						25℃	85℃ 125℃		-55℃	+85℃	
10	6	11	120000	160	0.04	400	2400	0.5	-60	100	90
16	9	17.6	82000	150	0.04	400	2400	0.5	-60	100	90
25	15	27.5	50000	110	0.045	400	2400	0.5	-60	100	90
35	20	38.5	33000	65	0.05	400	2400	0.5	-50	95	90
50	30	55	20000	55	0.05	500	3000	0.6	-40	85	90
63	38	70	10000	40	0.05	500	3000	0.8	-30	60	95
80	48	88	6800	30	0.06	600	3600	1.2	-28	50	95
85	51	93.5	6000	20	0.07	600	3600	1.4	-28	45	95
100	60	110	3600	20	0.07	600	3600	1.6	-20	35	100
110	66	121	3000	15	0.08	600	3600	1.8	-20	30	100
125	75	138	2000	15	0.08	600	3600	2.0	-20	30	100

Dimension drawing 3 **φ35.5x35.5x12mm**

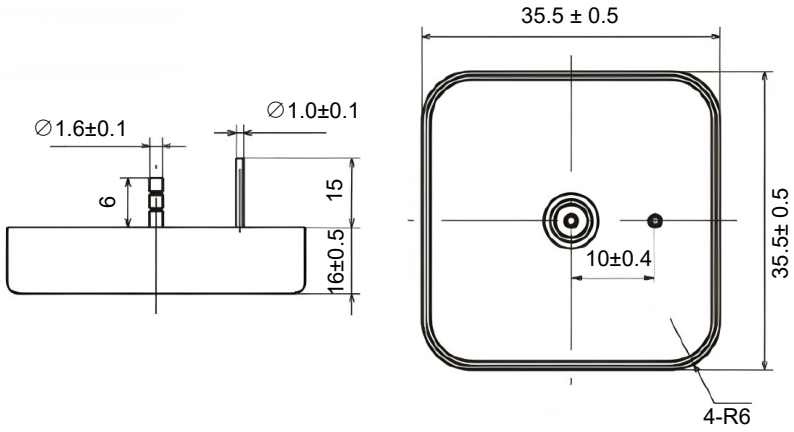


CBEO series Low DF

Table 4 CBEK High Energy Tantalum Hybrid Capacitor Characteristics and Size: φ35.5x35.5x16mm

Rated Voltage (V)	Derated Voltage (V)	Surge Voltage （V）	Cap. （μF ）	tgδ(%) 100Hz	ESR （Ω） 1KHz	Max.DCL. (μA)		IMP. （Ω） 100Hz -55℃	Cap. change （%）		Max. Weight (g)
						25℃	85℃ 125℃		-55℃	+85℃	
10	6	11	200000	160	0.025	400	2400	0.5	-60	100	123
16	9	17.6	120000	150	0.025	400	2400	0.5	-60	100	123
25	15	27.5	75000	110	0.035	400	2400	0.5	-60	100	123
35	20	38.5	50000	65	0.035	400	2400	0.5	-50	95	123
50	30	55	30000	55	0.035	500	3000	0.6	-40	85	123
63	38	70	16000	40	0.035	500	3000	0.8	-30	60	125
80	48	88	10000	30	0.04	600	3600	1.2	-28	50	125
85	51	93.5	9000	20	0.05	600	3600	1.4	-28	45	125
100	60	110	5400	20	0.05	600	3600	1.6	-20	35	130
110	66	121	4500	15	0.065	600	3600	1.8	-20	30	130
125	75	138	3000	15	0.065	600	3600	2.0	-20	30	130

Dimension drawing 4 **φ35.5x35.5x16mm**



Notes：

- Tantalum capacitors can't been measured by multimeter.(Easily cause irreversible damage and lead to reject when reversed polarity);
- Capacitance, DF measure frequency: 100Hz,DC offset voltage $U_{-}=2.2^{0}_{1.0}$V,Exchange offset voltage $U_{\sim}=1.0^{0}_{-0.5}$V(effective value), measure method is by series equivalent circuit.
- Measure the leakage current at 125℃,please use derated voltage. DCL. value read at 5 minute.
- Special size and big capacitance products, please consult with us.

CBEH

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with screws, convenient to fix.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor.
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delaycircuit.

SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q:(-10%~+30%), K: (±10%), M: (±20%)





Dimensions(Unit:mm)

Case Code	D (mm)	H (mm)	Lead Length	
			Positive Pole	Negative Pole
A	12	9	4	6
B1	15	8	4	12
B2	15	8	2.3	2.3
C1	16	8	6	6
C2	16	8	4	4
D1	16	12	6	6
D2	16	12	4	4
E1	16	16	6	6
E2	16	16	4	4
F	19	10	2.6	2.6
G	19	18	6	6

CBEH

Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Case Code
						25℃	85℃	-55℃	
10 1A	6	11	10000	125	0.35	60	480	5.2	B1/B2
			10000	120	0.2	50	400	4.6	C1/C2
			15000	120	0.2	100	800	3.6	D1/D2
			22000	120	0.1	160	1200	3.4	E1/E2
16 2A	9.5	17.6	2200	120	0.8	28	220	20	A
			5000	105	0.35	60	480	5.0	B1/B2
			6200	100	0.2	50	400	4.4	C1/C2
			9000	100	0.2	100	800	3.6	D1/D2
			13500	100	0.1	160	1200	3.4	E1/E2
25 1E	15	27.5	1800	100	0.6	35	280	28	A
			3800	85	0.35	60	480	4.8	B1/B2
			3800	80	0.2	50	400	4.6	C1/C2
			4200	80	0.2	50	400	4.4	C1/C2
			6000	80	0.2	100	800	3.6	D1/D2
			9000	80	0.1	160	1200	3.4	E1/E2
30 1U	18	33	3000	85	0.4	60	480	5.2	B1/B2
			3400	80	0.25	50	400	4.8	C1/C2
35 1V	20	38.5	820	60	1.2	20	160	30	A
			2500	55	0.4	60	480	4.6	B1/B2
			2500	50	0.25	50	400	4.4	C1/C2
			4600	50	0.2	100	800	3.8	D1/D2
			7000	50	0.1	160	1200	3.4	E1/E2
40 1G	24	44	100	30	2.8	4	30	40	A
			500	50	2.0	10	80	20	A
			1000	35	1.0	20	160	10	A
50 1H	30	55	680	40	1.2	28	220	12.8	A
			1000	40	0.3	35	325	5.4	C1/C2
			1400	40	0.25	50	400	5.2	C1/C2
			1500	45	0.4	60	480	5.0	B1/B2
			1500	40	0.25	50	400	4.0	C1/C2
			1600	40	0.25	50	400	4.0	C1/C2
			2800	40	0.2	100	800	2.8	D1/D2
			4200	40	0.1	160	1200	2.1	E1/E2
			8000	40	0.06	200	1600	1.2	G
60 1I	36	66	875	40	0.35	50	400	8.0	C1/C2
			980	45	0.5	60	480	7.6	B1/B2
			1000	40	0.35	50	400	7.0	C1/C2
63 1J	38	70	470	30	0.35	30	240	12.8	C1/C2
			500	35	1.4	25	200	10.6	A
			610	30	0.35	42	336	8.2	C1/C2
			1000	30	0.4	60	480	7.6	B1/B2
			1200	30	0.25	80	640	6.8	D1/D2
			1800	30	0.15	100	800	4.2	E1/E2
			2200	25	0.4	120	960	3.0	E1/E2
			2200	25	0.4	120	960	2.8	F

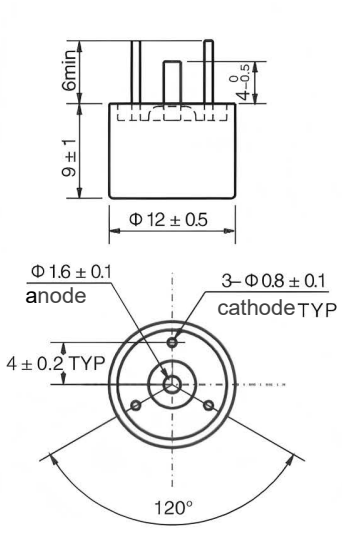
CBEH

Electrical Characteristics

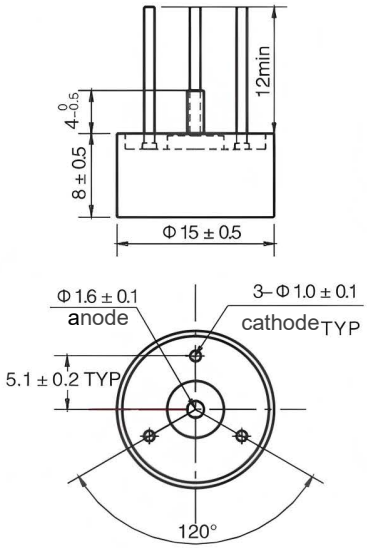
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA) 25℃	DCL (μA) 85℃	Impedance at (Ω) 100Hz -55℃	Case Code
75 1M	45	82.5	565	20	0.5	50	400	9.0	C1/C2
			630	25	0.6	60	480	8.2	B1/B2
			700	20	0.5	50	400	8.0	C1/C2
			1400	20	0.15	105	945	7.5	D1/D2
			1400	20	0.15	105	945	7.5	E1/E2
80 1K	48	88	220	30	1.6	14	110	20	A
			500	25	0.35	44	352	10	C1/C2
			600	25	0.30	48	384	12	D1/D2
			1000	25	0.25	88	704	8.0	D1/D2
			1500	25	0.15	130	1084	6.2	E1/E2
100 2A	60	110	100	25	2.2	8	65	40	A
			180	25	0.4	26	208	18	C1/C2
			360	25	0.8	50	400	32	C1/C2
			360	25	0.35	50	400	16	D1/D2
			540	25	0.3	80	640	14	E1/E2
110 2F	66	121	130	20	0.45	15	120	30	C1/C2
			260	20	0.35	30	240	18	D1/D2
			390	20	0.3	50	400	16	E1/E2
125 2Q	75	138	68	20	2.6	8	65	40	A
			100	20	0.5	12	100	30	C1/C2
			210	20	1.25	50	224	36	C1/C2
			200	20	0.4	28	224	18	D1/D2
			300	20	0.3	42	336	16	E1/E2

Dimensions (Unit:mm)

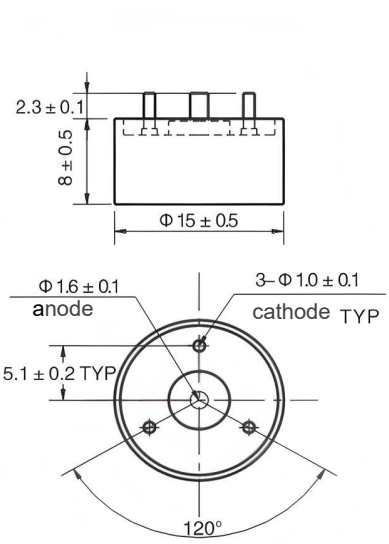
Case Code: A Φ12x9 Layout



Case Code: B1 Φ15x8 Layout



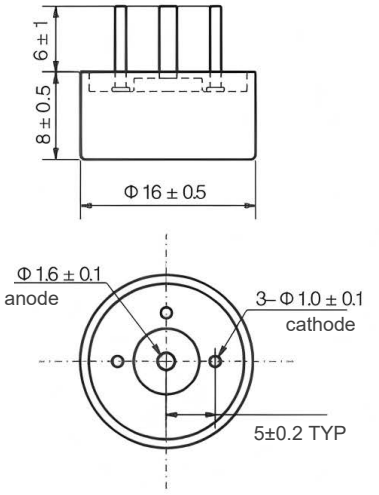
Case Code: B2 Φ15x8 Layout



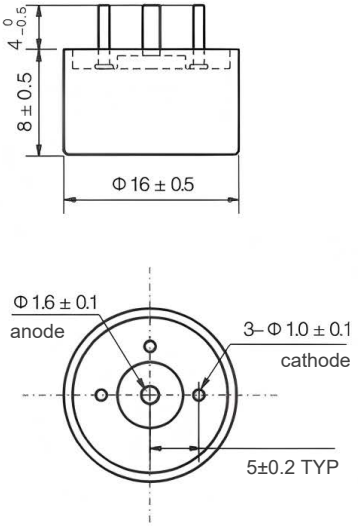
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Dimensions(Unit:mm)

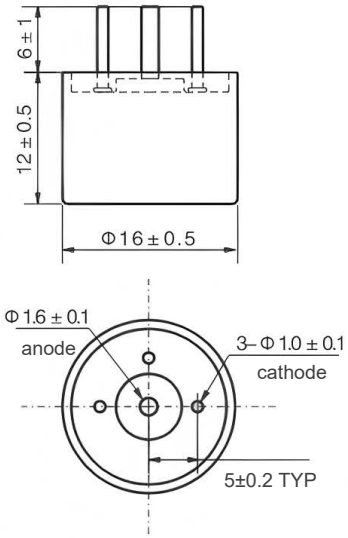
Case Code: C1 Φ16x8 Layout



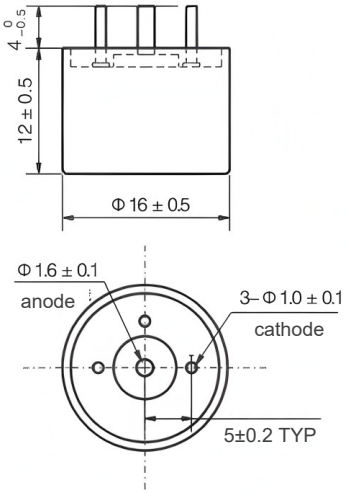
Case Code: C2 Φ16x8 Layout



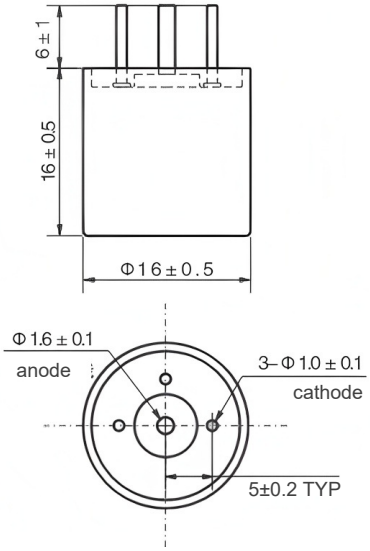
Case Code: D1 Φ16x12 Layout



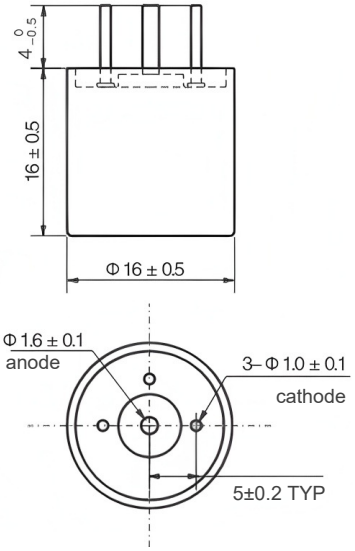
Case Code: D2 Φ16x12 Layout



Case Code: E1 Φ16x16 Layout



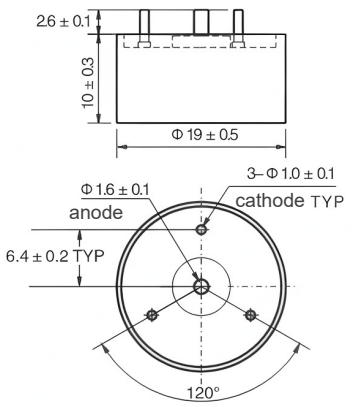
Case Code: E2 Φ16x16 Layout



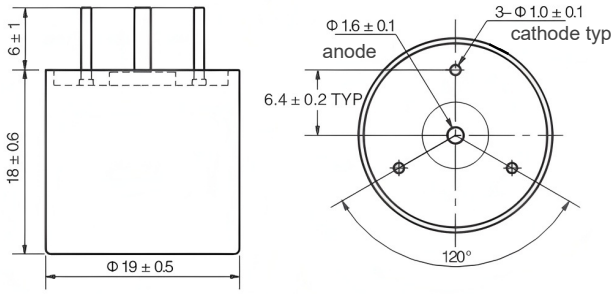
CBEH

Dimensions(Unit:mm)

Case Code: F Φ19x10 Layout



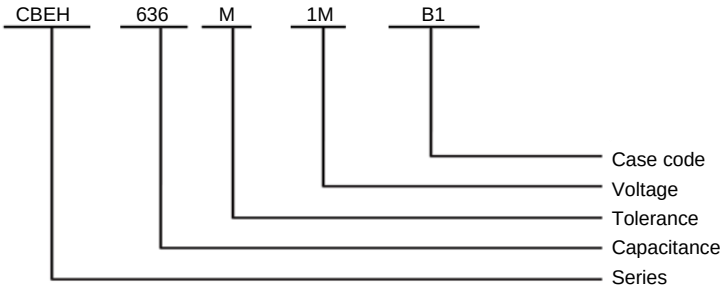
Case Code: G Φ19x18 Layout



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{\sim}=2.2^{0}_{-1.0}V$, $U_{\sim}=1.0^{0}_{-0.5}V$ Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

PART NUMBER EXAMPLE



CBEG

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with 3 screws 120° angle structureconvenient to fix.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy, Nominal Capacitance is higher than CBEG series.
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q:(-10%~+30%), K: (±10%), M: (±20%)





Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH	h	h1
						25 ℃	85℃	-55℃	-55℃	+85℃	(mm)	(mm)	(mm)
50 1H	30	55	24000	70	0.035	400	2400	1.2	-55	+135	35.5x16	8±0.5	6±0.5
75 1M	45	82.5	3000	20	0.06	200	1200	1.6	-15	+30	35.5x10	8±0.5	12min
75 1M	45	82.5	10000	40	0.06	500	3000	1.6	-45	+95	35.5x16	8±0.5	14±0.5
80 1K	40	88	5600	40	0.06	500	3000	1.6	-40	+90	35.5x12	6±0.5	6±0.5

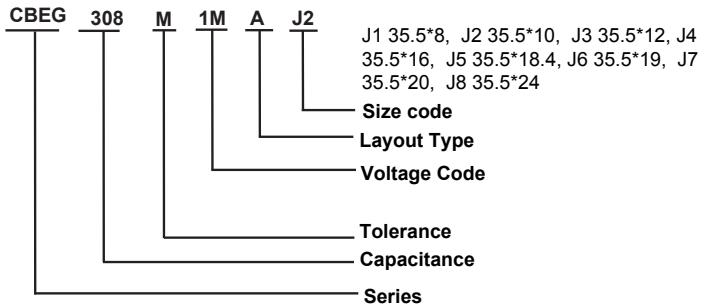
Dimensions(Unit:mm)



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{_}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

PART NUMBER EXAMPLE



CBEF

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with screws, convenient to fix Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy, Nominal Capacitance is higher than CBEF series
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.



SPECIFICATIONS

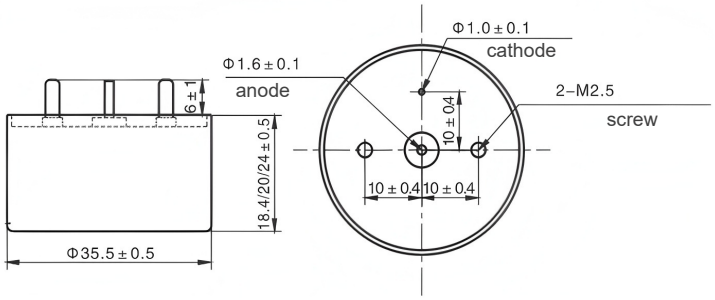
Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)

Electrical Characteristics

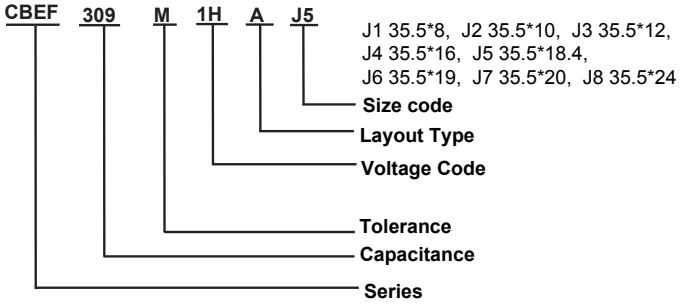
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	+85℃	(mm)
10 1A	6	11	200000 230000	190	0.025	300	1800	1	-80	+160	35.5x20 35.5x24
16 1C	9.5	17.6	120000 140000	170	0.025	300	1800	1	-80	+160	35.5x20 35.5x24
25 1E	15	27.5	70000 86000	140	0.025	300	1800	1	-75	+160	35.5x20 35.5x24
35 1V	20	38.5	50000 60000	100	0.025	300	1800	1	-70	+160	35.5x20 35.5x24
50 1H	30	55	30000 30000 32000 33000 33000	75	0.025	400	2400	1.2	-60	+160	35.5x18.4 35.5x20 35.5x20 35.5x20 35.5x24
63 1J	38	70	16000 18000	55	0.035	400	2400	1.4	-50	+100	35.5x20 35.5x24
80 1K	48	88	11000 13000	45	0.035	500	2500	1.6	-40	+100	35.5x20 35.5x24
100 2A	60	110	4800 6000 7500	40	0.035	500	2500	1.8	-30	+80	35.5x20 35.5x20 35.5x24
125 2Q	75	138	2200 4500 4700 2800 4500 4700	35	0.050	500	2500 3000 3000 2500 3000 3000	2.4 2.5 2.4 2.4 2.0 2.0	-25 -25 -25 -20 -25 -25	+50 +50 +50 +40 +45 +45	35.5x20 35.5x20 35.5x20 35.5x24 35.5x24 35.5x24

Dimensions (unit: mm)

Φ35.5x18.4/20/24 Layout



PART NUMBER EXAMPLE



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{=}=2.20^{0}_{-1.0}V$, $U_{\sim}=1.0^{0}_{-0.5}V$ Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

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CBEE

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with screws, convenient to fix.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy, Nominal Capacitance is higher than CBEE series
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)



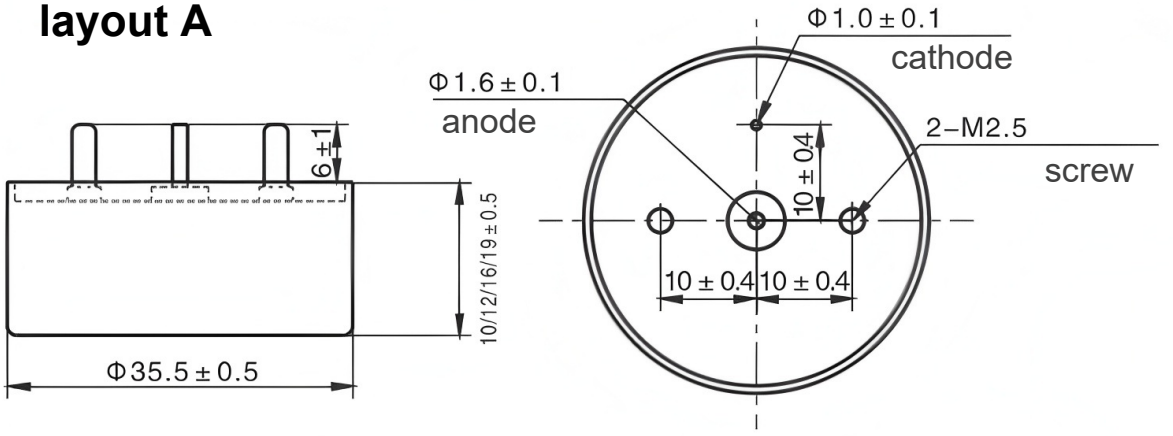


Electrical Characteristics

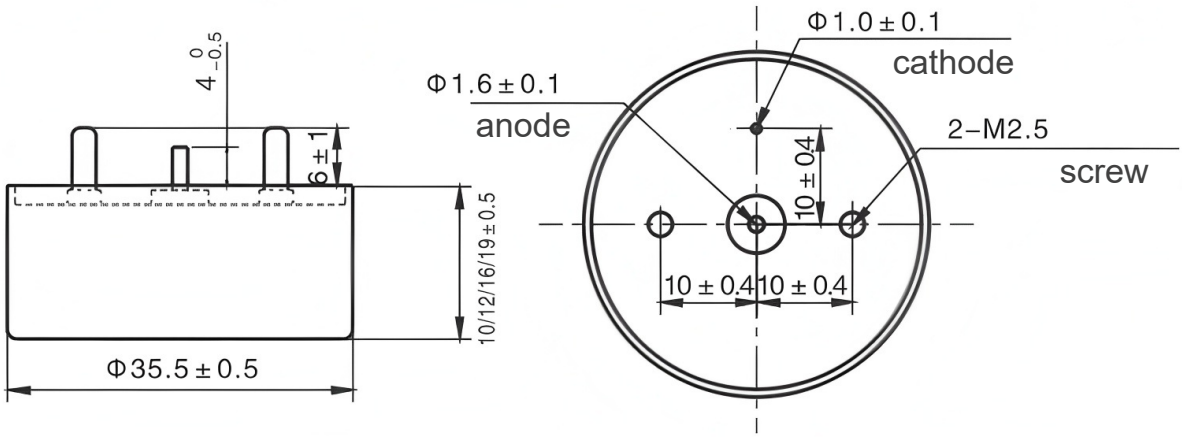
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25 ℃	85℃, 125℃	-55℃	-55℃	+85℃	(mm)
10 1A	6	11	100000 150000	180	0.035 0.025	300	1800	1	-80	+160	35.5x12 35.5x16
16 1C	9.5	17.6	60000 90000	165	0.035 0.025	300	1800	1	-80	+160	35.5x12 35.5x16
25 1E	15	27.5	36000 54000	130	0.04 0.035	300	1800	1	-75	+160	35.5x12 35.5x16
35 1V	20	38.5	24000 36000	95	0.04 0.035	300	1800	1	-70	+160	35.5x12 35.5x16
50 1H	30	55	11000 12000 16000 18000 24000	65 65 70 70 70	0.1 0.1 0.04 0.04 0.035	300 300 400 400 400	2400	1.2	-60 -60 -55 -55 -55	+120 +120 +135 +135 +135	35.5x10 35.5x12 35.5x12 35.5x12 35.5x16
63 1J	38	70	8000 12000	50	0.04 0.035	400	2400	1.4	-45	+90	35.5x12 35.5x16
80 1K	48	88	5600 8200	40	0.06 0.04	500	3000	1.6	-40	+90	35.5x12 35.5x16
100 2A	60	110	2400 3800 3600 5700	35	0.08 0.05 0.05 0.05	500	3000	1.8	-30	+80	35.5x12 35.5x12 35.5x16 35.5x16
110 2F	66	121	1200 1800 3000 4500	35	0.08 0.075 0.075 0.075	500	3000	2	-25	+60	35.5x12 35.5x16 35.5x16 35.5x16
125 2Q	75	138	1100 1600 2200 3300 3300	30	0.08 0.075 0.075 0.05 0.05	500	3000	2.4 2.4 2.4 2.4 2.2	-25 -25 -25 -25 -20	+50 +50 +50 +50 +45	35.5x12 35.5x16 35.5x12 35.5x16 35.5x19

CBEE

layout A



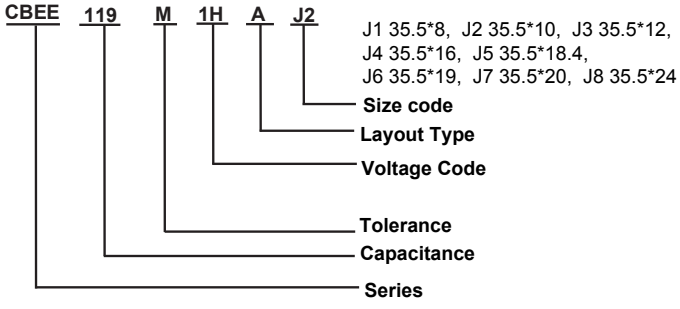
layout B



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{_}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

PART NUMBER EXAMPLE



CBED

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with screws, convenient to fix.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.



SPECIFICATIONS

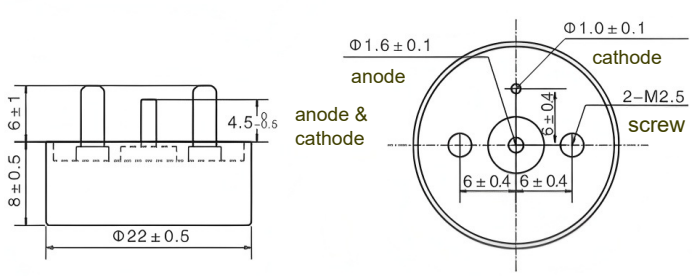
Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)

◆ Table 1: Electrical Characteristics and Size : 22x8 H1 (Fig. 1)

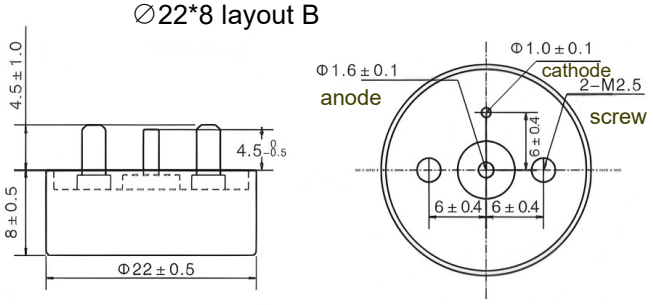
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	+85℃	(mm)
10	6	11	8000	80	0.3	100	600	8	-80	+160	22x8
16	9.5	17.6	7000	70	0.3	125	750	8	-80	+160	22x8
25	15	27.5	5000	60	0.3	150	900	8	-75	+150	22x8
35	20	38.5	3500	50	0.3	150	900	8	-70	+140	22x8
50	30	55	2500	46	0.3	155	930	9.6	-60	+120	22x8
63	38	70	1200	35	0.4	85	510	11.2	-50	+80	22x8
80	48	88	860	30	0.4	90	540	12.8	-40	+80	22x8
100	60	110	400	25	0.5	25	150	14.4	-30	+60	22x8
110	66	121	200	20	0.5	25	150	16	-25	+50	22x8
125	75	138	160	20	0.6	25	150	19.2	-20	+50	22x8

Dimension mm

∅22*8 layout A



∅22*8 layout B



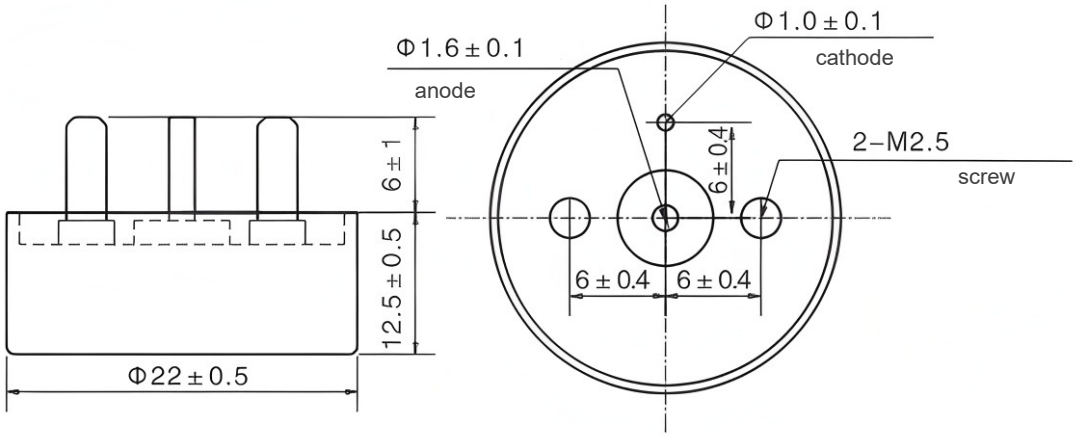
CBED

◆ **Table 2: Electrical Characteristics and Size : 22x12.5 H2 (Fig. 2)**

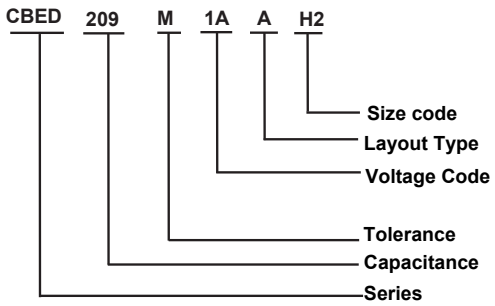
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	+85℃	(mm)
10 1A	6	11	20000	90	0.1	150	900	2.5	-80	+160	22x12.5
16 1C	9.5	17.6	18000	80	0.1	150	900	2.5	-80	+160	22x12.5
25 1E	15	27.5	13000	70	0.1	150	900	2.5	-75	+150	22x12.5
35 1V	20	38.5	9000	60	0.1	170	1000	2.5	-70	+140	22x12.5
50 1H	30	55	6800	65	0.1	170	1000	1.2	-45	+120	22x12.5
63 1J	38	70	2800	55	0.2	170	1000	3.5	-50	+80	22x12.5
80 1K	48	88	2000	45	0.2	200	1200	3.5	-40	+80	22x12.5
100 2A	60	110	1000	40	0.2	200	1200	4.0	-30	+60	22x12.5
110 2F	66	121	800	30	0.2	200	1200	4.0	-25	+50	22x12.5
125 2Q	75	138	600	30	0.3	200	1200	4.0	-20	+50	22x12.5

Dimension mm

22*12.5 layout



PART NUMBER EXAMPLE



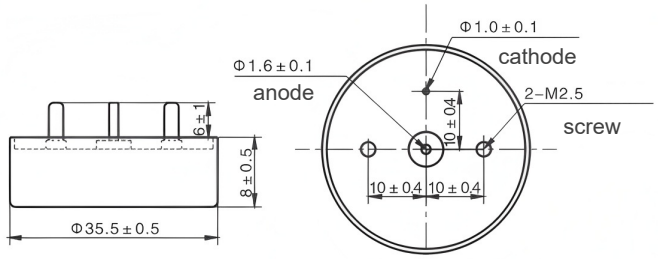
CBED

◆ **Table 3: Electrical Characteristics and Size : 35.5x8 J1 (Fig. 3)**

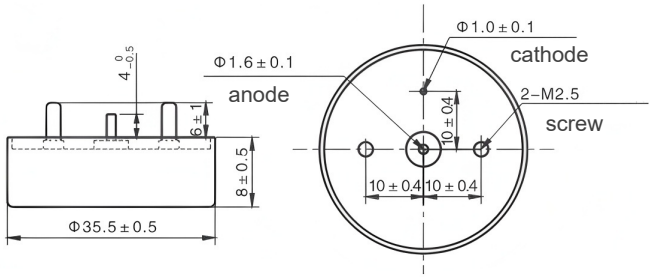
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	+85℃	(mm)
10	6	11	50000	180	0.05	150	900	1	-75	+140	35.5x8
16	9.5	17.6	30000	160	0.05	150	900	1	-70	+140	35.5x8
25	15	27.5	18000	120	0.05	150	900	1	-65	+120	35.5x8
35	20	38.5	12000	90	0.065	150	900	1	-50	+120	35.5x8
50	30	55	8000 9000	65	0.07	170	1000	1.2	-40 -45	+120	35.5x8
63	38	70	1800 4000	40 45	0.200 0.100	126 170	1000	1.4	-20 -30	+60 +80	35.5x8
80	48	88	1600 2800	20 40	0.15 0.1	100 200	1000 1200	1.6	-20 -30	+60 +80	35.5x8
100	60	110	1200 1900	35	0.125	200	1200	1.8	-25	+60	35.5x8
110	66	121	580 1500	35	0.200	200	1200	2	-20	+50	35.5x8
125	75	138	560 1100	35	0.200	200	1200	2.4	-15	+50	35.5x8

Dimension mm

35.5*8 layout A



35.5*8 layout B



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{_}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

CBEC

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance.
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance is higher than CBEC series.
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)





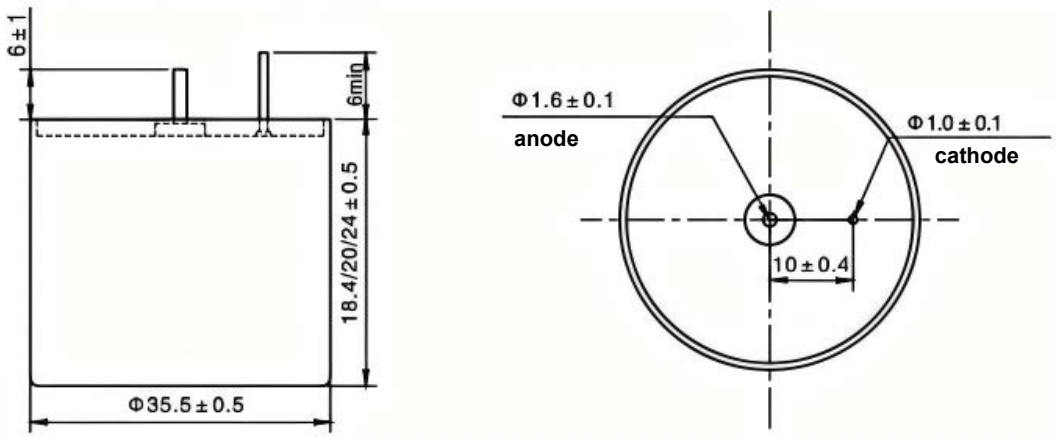
◆ Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz)	Capacitance Change at (%)		Dimensions DxH (mm)
						25℃	85℃, 125℃	-55℃	-55℃	85℃	
10 1A	6	11	200000 230000	190	0.025	300	1800	1	-80	+160	35.5x20 35.5x24
16 1C	9.5	17.6	120000 140000	170	0.025	300	1800	1	-80	+160	35.5x20 35.5x24
25 1E	15	27.5	70000 86000	140	0.025	300	1800	1	-75	+160	35.5x20 35.5x24
35 1V	20	38.5	50000 60000	100	0.025	300	1800	1	-70	+160	35.5x20 35.5x24
50 1H	30	55	30000 30000 32000 33000 33000	75	0.025	400	2400	1.2	-60	+160	35.5x18.4 35.5x20 35.5x20 35.5x20 35.5x24
63 1J	38	70	16000 18000	55	0.035	400	2400	1.4	-50	+100	35.5x20 35.5x24
80 1K	48	88	11000 13000	45	0.035	500	2500	1.6	-40	+160	35.5x20 35.5x24
100 2A	60	110	4800 6000 7500	40	0.035	500	2500	1.8	-30	+80	35.5x20 35.5x20 35.5x24
125 2Q	75	138	2200 4500 4700 2800 4500 4700	35	0.050	500	2500 3000 3000 2500 3000 3000	2.4 2.5 2.4 2.4 2.0 2.0	-25 -25 -25 -20 -25 -25	+50 +50 +50 +40 +45 +45	35.5x20 35.5x20 35.5x20 35.5x24 35.5x24 35.5x24

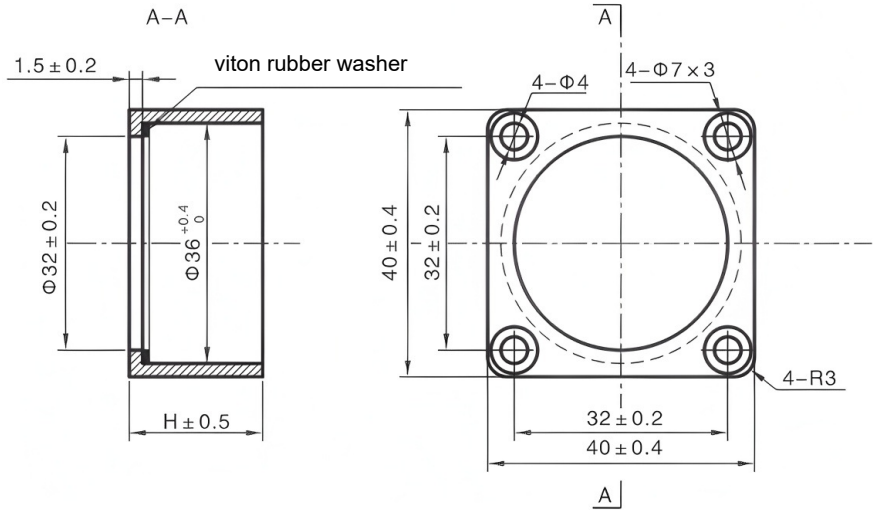
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Dmensions (unit: mm)

Φ35.5x18.4/20/24 Layout (A Type)



Φ35.5x18.4/20/24 Mounting bracket

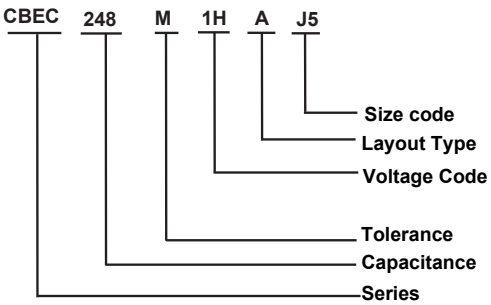


Dimensions (mm) code	H ± 0.5 mm
Φ35.5x18.4 J5	18.5
Φ35.5x20 J7	20
Φ35.5x24 J8	24

Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{_}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

PART NUMBER EXAMPLE



CBEB

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance.
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance is higher than CBEB series.
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)





◆ Electrical Characteristics

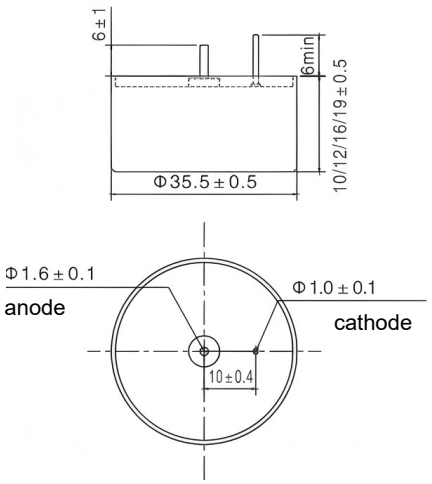
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA) 25℃	DCL (μA) 85℃, 125℃	Impedance at (Ω) 100Hz) -55℃	Capacitance Change at (%) -55℃	Capacitance Change at (%) 85℃	Dimensions DxH (mm)
10 1A	6	11	100000 150000	180	0.035 0.025	300	1800	1	-80	+160	35.5x12 35.5x16
16 1C	9.5	17.6	60000 90000	165	0.035 0.025	300	1800	1	-80	+160	35.5x12 35.5x16
25 1E	15	27.5	36000 54000	130	0.04 0.035	300	1800	1	-75	+160	35.5x12 35.5x16
35 1V	20	38.5	24000 36000	95	0.04 0.035	300	1800	1	-70	+160	35.5x12 35.5x16
50 1H	30	55	11000 12000 16000 18000 24000	65 65 70 70 70	0.1 0.1 0.04 0.04 0.035	300 300 400 400 400	2400	1.2	-60 -60 -55 -55 -55	+120 +120 +135 +135 +135	35.5x10 35.5x12 35.5x12 35.5x12 35.5x16
63 1J	38	70	8000 12000	50	0.04 0.035	400	2400	1.4	-45	+90	35.5x12 35.5x16
80 1K	48	88	5600 8200	40	0.06 0.04	500	3000	1.6	-40	+90	35.5x12 35.5x16
100 2A	60	110	2400 3800 3600 5700	35	0.08 0.05 0.05 0.05	500	3000	1.8	-30	+80	35.5x12 35.5x12 35.5x16 35.5x16
110 2F	66	121	1200 1800 3000 4500	35	0.08 0.075 0.075 0.075	500	3000	2	-25	+60	35.5x12 35.5x16 35.5x16 35.5x16
125 2Q	75	138	1100 1600 2200 3300 3300	30	0.08 0.075 0.075 0.05 0.05	500	3000	2.4 2.4 2.4 2.4 2.2	-25 -25 -25 -25 -20	+50 +50 +50 +50 +45	35.5x12 35.5x16 35.5x12 35.5x16 35.5x19

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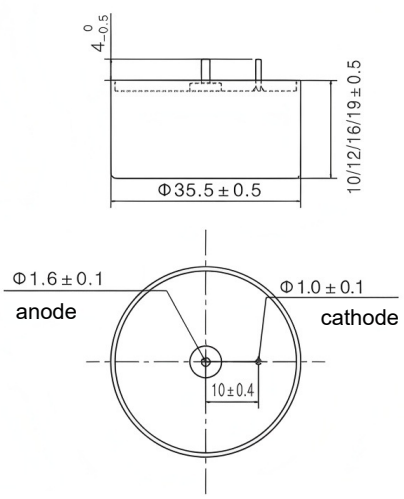
CBEB

Dimensions (unit: mm)

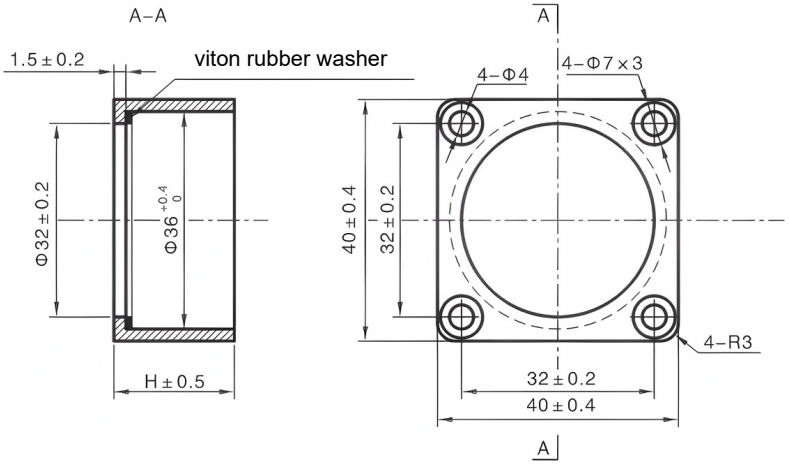
Φ35.5x10/12/16/19 Layout (A Type)



Φ35.5x10/12/16/19 Layout (B Type)



Φ35.5x10/12/16/19 Mounting bracket

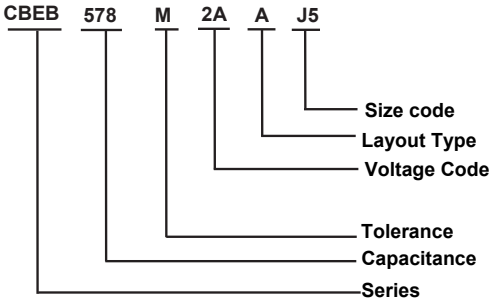


Dimensions (mm) code	H ± 0.5 mm
Φ35.5x10 J2	10.3
Φ35.5x12 J3	12
Φ35.5x16 J4	16
Φ35.5x19 J6	20

Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{_}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

PART NUMBER EXAMPLE



CBEA:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance.
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

S P E C I F I C A T I O N S

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)



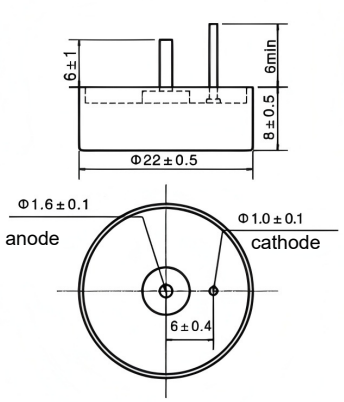
◆ Table 1: Electrical Characteristics and Size : 22x8 H1 (Fig. 1)

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz)	Capacitance Change at (%)		Dimensions DxH (mm)
						25℃	85℃, 125℃	-55℃	-55℃	85℃	
10 1A	6	11	8000	80	0.3	100	600	8	-80	+160	22x8
16 1C	9.5	17.6	7000	70	0.3	125	750	8	-80	+160	22x8
25 1E	15	27.5	5000	60	0.3	150	900	8	-75	+150	22x8
35 1V	20	38.5	3500	50	0.3	150	900	8	-70	+140	22x8
50 1V	30	55	2500	46	0.3	155	930	9.6	-60	+120	22x8
63 1J	38	70	1200	35	0.4	85	510	11.2	-50	+80	22x8
80 1K	48	88	860	30	0.4	90	540	12.8	-40	+80	22x8
100 2A	60	110	400	25	0.5	25	150	14.4	-30	+60	22x8
110 2F	66	121	200	20	0.5	25	150	16	-25	+50	22x8
125 2Q	75	138	160	20	0.6	25	150	19.2	-20	+50	22x8

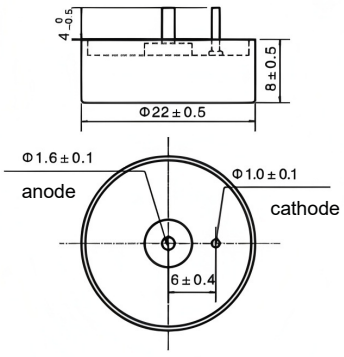
Dimensions (unit: mm)

Fig. 1

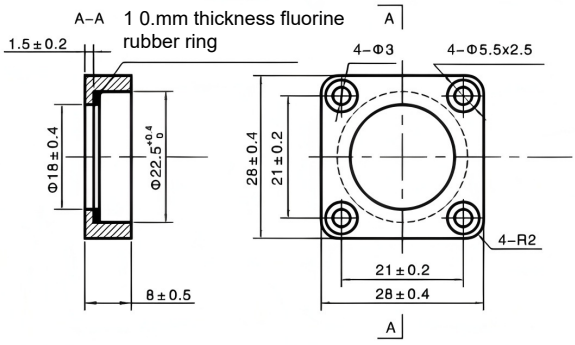
Φ22x8 Layout (A Type)



Φ22x8 Layout (B Type)

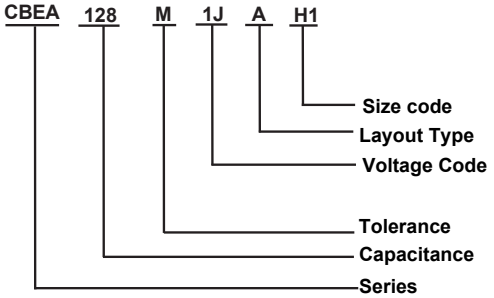


Φ22x8 Mounting bracket



Please visit our website to get more update data, those data & specification are subject to change without notice.

PART NUMBER EXAMPLE



CBEA

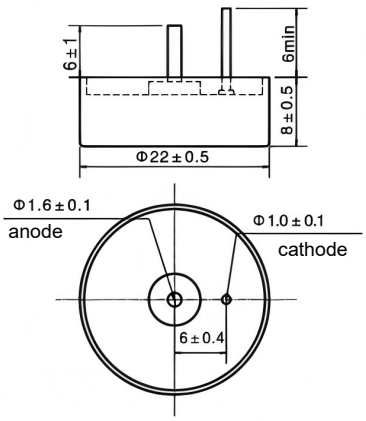
◆ Table 2: Electrical Characteristics and Size : 22x12.5 H2 (Fig. 2)

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz)	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	85℃	(mm)
10	6	11	20000	90	0.1	150	900	2.5	-80	+160	22x12.5
16	9.5	17.6	18000	80	0.1	150	900	2.5	-80	+160	22x12.5
25	15	27.5	13000	70	0.1	150	900	2.5	-75	+150	22x12.5
35	20	38.5	9000	60	0.1	170	1000	2.5	-70	+140	22x12.5
50	30	55	6800	65	0.1	170	1000	1.2	-45	+120	22x12.5
63	38	70	2800	55	0.2	170	1000	3.5	-50	+80	22x12.5
80	48	88	2000	45	0.2	200	1200	3.5	-40	+80	22x12.5
100	60	110	1000	40	0.2	200	1200	4.0	-30	+60	22x12.5
110	66	121	800	30	0.2	200	1200	4.0	-25	+50	22x12.5
125	75	138	600	30	0.3	200	1200	4.0	-20	+50	22x12.5

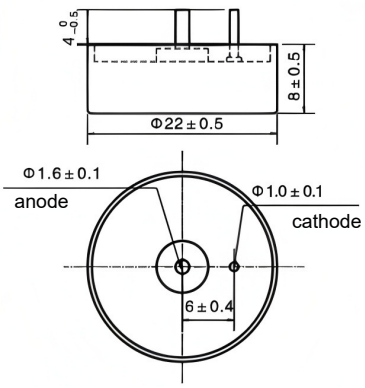
Dimensions (unit: mm)

Fig. 2

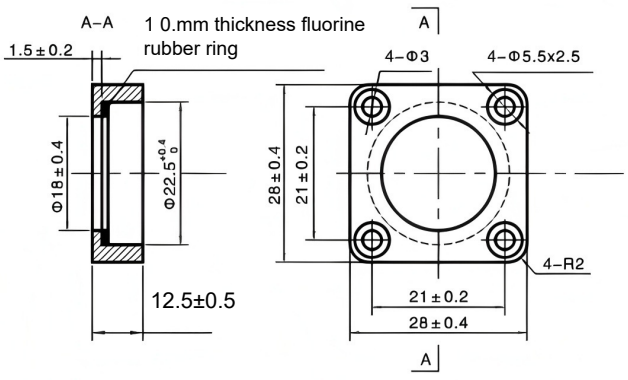
Φ22x12.5 Layout (A Type)



Φ22x12.5 Layout (B Type)



Φ22x12.5 Mounting bracket



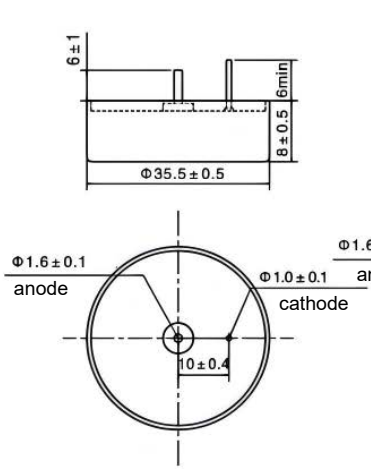
CBEA

◆ Table 3: Electrical Characteristics and Size : 35.5x8 J1 (Fig. 3)

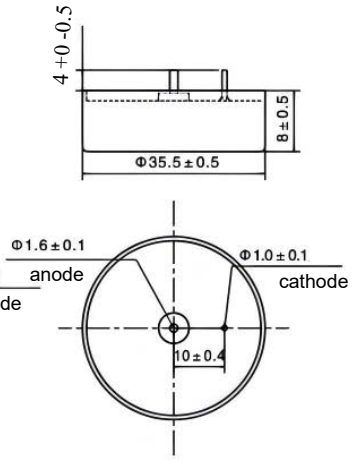
Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz)	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	85℃	(mm)
10	6	11	50000	180	0.05	150	900	1	-75	+140	35.5x8
16	9.5	17.6	30000	160	0.05	150	900	1	-70	+140	35.5x8
25	15	27.5	18000	120	0.05	150	900	1	-65	+120	35.5x8
35	20	38.5	12000	90	0.065	150	900	1	-50	+120	35.5x8
50	30	55	8000 9000	65	0.07	170	1000	1.2	-40 -45	+120	35.5x8
63	38	70	1800 4000	40 45	0.200 0.100	126 170	1000	1.4	-20 -30	+60 +80	35.5x8
80	48	88	1600 2800	20 40	0.15 0.1	100 200	1000 1200	1.6	-20 -30	+60 +80	35.5x8
100	60	110	1200 1900	35	0.125	200	1200	1.8	-25	+60	35.5x8
110	66	121	580 1500	35	0.200	200	1200	2	-20	+50	35.5x8
125	75	138		35	0.200	200	1200	2.4	-15	+50	35.5x8

Dimensions (unit: mm) Fig. 3

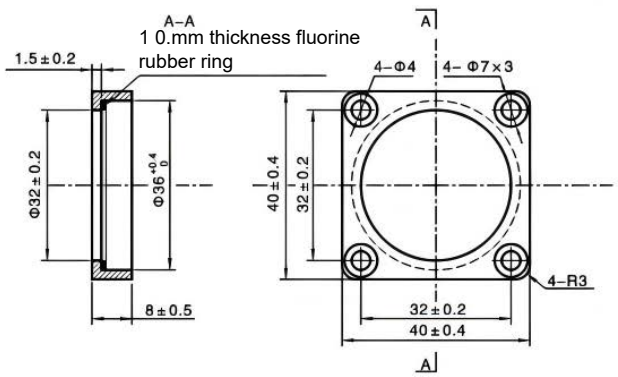
Φ35.5x8 Layout (A Type)



Φ35.5x8 Layout (B Type)



Φ35.5x8 Mounting bracket



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{+}=2.2^{0}_{-1.0}V$, $U_{-}=1.0^{0}_{-0.5}V$ Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

CBEM

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with mounting flange.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy, small size
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.





SPECIFICATIONS

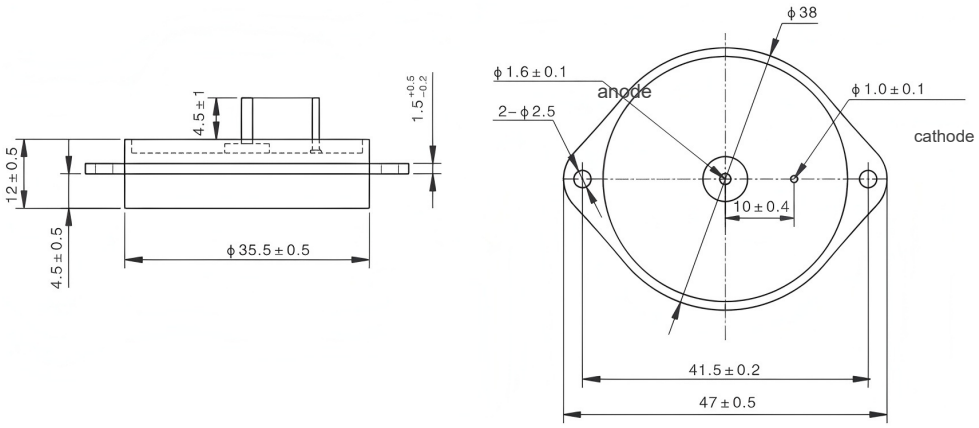
Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)

Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)	
						25℃	85℃, 125℃		-55℃	85℃
10 1A	6	11	100000	180	0.035	300	1800	1	-80	+160
16 1C	9.5	17.6	60000	165	0.035	300	1800	1	-80	+160
25 1E	15	27.5	36000	130	0.04	300	1800	1	-75	+160
35 1V	20	38.5	24000	95	0.04	300	1800	1	-70	+160
50 1H	30	55	12000 16000	65 70	0.10 0.04	300 400	2400	1.2	-60 -55	+120 +135
63 1J	38	70	8000	50	0.04	400	2400	1.4	-45	+90
80 1K	48	88	5600	40	0.06	500	3000	1.6	-40	+90
100 2A	60	110	2400 3800	35	0.08 0.05	500	3000	1.8	-30	+80
110 2F	66	121	1200	35	0.08	500	3000	2	-25	+60
125 2Q	75	138	1100 2200	30	0.08 0.075	500	3000	2.4	-25	+50

Dimensions (unit: mm)

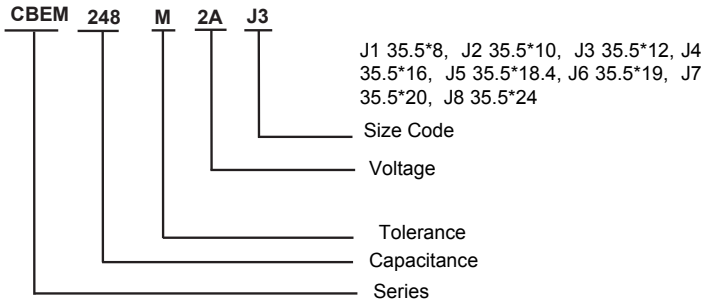
Φ35.5x12 Layout



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{=}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

PART NUMBER EXAMPLE



CBEL: With Mounting flange

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with mounting flange.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance andEnergy
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	K: (±10%), M: (±20%)

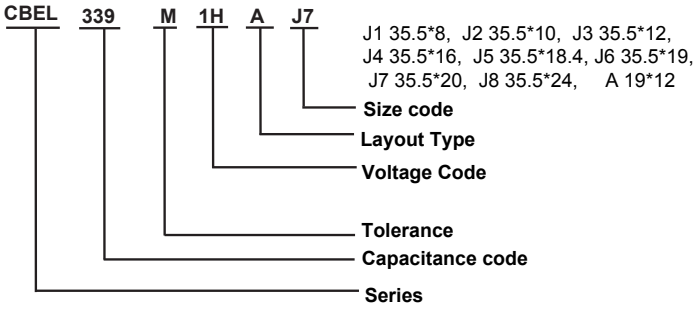




Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA) 25℃	DCL (μA) 85℃, 125℃	Impedance at (Ω) 100Hz	Capacitance Change at (%) -55℃	Capacitance Change at (%) 85℃	Dimensions DxH (mm)
10 1A	6	11	50000	180	0.050	150	900	1.0	-75	+140	35.5x8
			100000	180	0.035	300	1800		-80	+160	35.5x12
			150000	180	0.025	300	1800		-80	+160	35.5x16
			200000	190	0.025	400	1800		-80	+160	35.5x20
			230000	190	0.025	400	1800		-80	+160	35.5x24
16 1C	9.5	17.6	30000	160	0.050	150	900	1.0	-70	+140	35.5x8
			60000	165	0.035	300	1800		-80	+160	35.5x12
			90000	165	0.025	300	1800		-80	+160	35.5x16
			120000	170	0.025	400	1800		-80	+160	35.5x20
			140000	170	0.025	400	1800		-80	+160	35.5x24
25 1E	15	27.5	18000	120	0.050	150	900	1.0	-65	+120	35.5x8
			36000	130	0.040	300	1800		-75	+160	35.5x12
			54000	130	0.035	300	1800		-75	+160	35.5x16
			70000	140	0.025	400	1800		-75	+160	35.5x20
			86000	140	0.025	400	1800		-75	+160	35.5x24
35 1V	20	38.5	12000	90	0.065	150	900	1.0	-50	+120	35.5x8
			24000	95	0.040	300	1800		-70	+160	35.5x12
			36000	95	0.035	300	1800		-70	+160	35.5x16
			50000	100	0.025	400	1800		-70	+160	35.5x20
			60000	100	0.025	400	1800		-70	+160	35.5x24
50 1H	30	55	8000	65	0.070	170	1000	1.2	-40	+120	35.5x8
			16000	70	0.040	400	2400		-55	+135	35.5x12
			24000	70	0.035	400	2400		-55	+135	35.5x16
			30000	75	0.025	400	1600		-60	+160	35.5x20
			32000	75	0.025	400	1600		-60	+160	35.5x20
			33000	75	0.025	400	1600		-60	+160	35.5x24

PART NUMBER EXAMPLE



CBEL: With Mounting flange

Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125 ℃		-55℃	85℃	(mm)
63 1J	38	70	1800	40	0.200	126	1000	1.4	-20	+60	35.5x8
			4000	45	0.100	170	1000		-30	+80	35.5x8
			8000	50	0.040	400	2400		-45	+90	35.5x12
			12000	50	0.035	400	2400		-45	+90	35.5x16
			16000	55	0.035	400	1600		-50	+100	35.5x20
			18000	55	0.035	400	1600		-50	+100	35.5x24
80 1K	48	88	1600	20	0.150	100	1000	1.6	-20	+60	35.5x8
			2800	40	0.100	200	1200		-30	+80	35.5x8
			5600	40	0.060	500	3000		-40	+90	35.5x12
			8200	40	0.040	500	3000		-40	+90	35.5x16
			11000	45	0.035	500	2500		-40	+100	35.5x20
			13000	45	0.035	500	2500		-40	+100	35.5x24
100 2A	60	110	1200	35	0.125	200	1200	1.8	-25	+60	35.5x8
			2400	35	0.080	500	3000		-30	+80	35.5x12
			3600	35	0.050	500	3000		-30	+80	35.5x16
			4800	40	0.035	500	2500		-30	+80	35.5x20
			6000	40	0.035	500	2500		-30	+80	35.5x20
110 2F	66	121	580	35	0.200	200	1200	2.0	-20	+50	35.5x8
			1200	35	0.080	500	3000		-25	+60	35.5x12
			1800	35	0.075	500	3000		-25	+60	35.5x16
125 2Q	75	138	560	35	0.200	200	1200	2.4	-15	+50	35.5x8
			1100	30	0.080	500	3000		-25	+50	35.5x12
			1600	30	0.075	500	3000		-25	+50	35.5x16
			2200	35	0.050	500	2500		-25	+50	35.5x20
			2800	35	0.050	500	2500		-20	+40	35.5x24

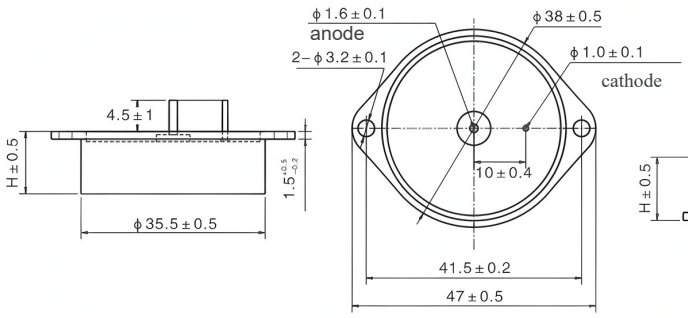
Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125 ℃	-55℃	-55℃	85℃	(mm)
10	6	11	30000	120	0.4	200	1600	8	-70	+140	19x12
16	9.5	17.6	20000	120	0.4	200	1600	8	-70	+140	19x12
2	15	27.5	12000	90	0.4	200	1600	8	-60	+140	19x12
30	18	33	10000	85	0.45	200	1600	8	-60	+120	19x12
35	20	38.5	8000	60	0.45	150	1200	8	-55	+100	19x12
50	30	55	6000	50	0.45	200	1600	9.6	-55	+90	19x12
63	38	70	3300	40	0.55	200	1600	11.2	-30	+70	19x12
75	48	82.5	2200	35	0.65	160	1300	12.8	-25	+70	19x12
100	60	110	1000	35	0.85	100	800	14.4	-20	+30	19x12
125	75	138	600	30	1.5	75	600	19.2	-20	+30	19x12

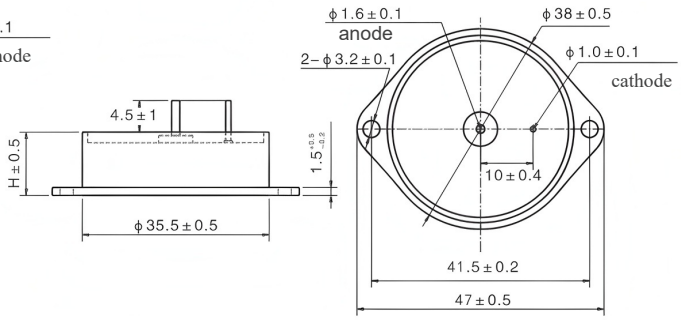
CBEL: With Mounting flange

Dimensions (unit: mm)

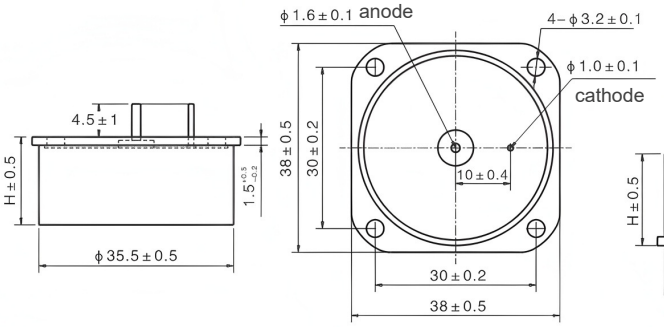
A Type



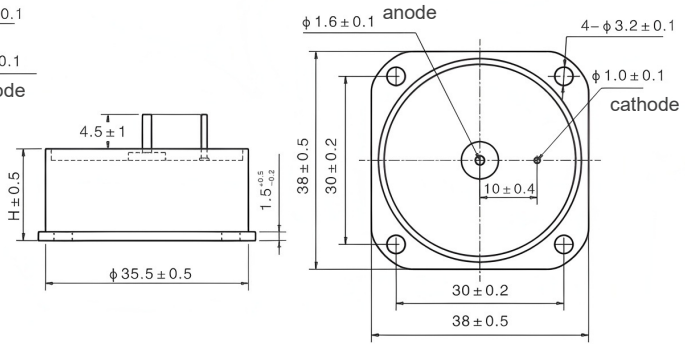
B Type



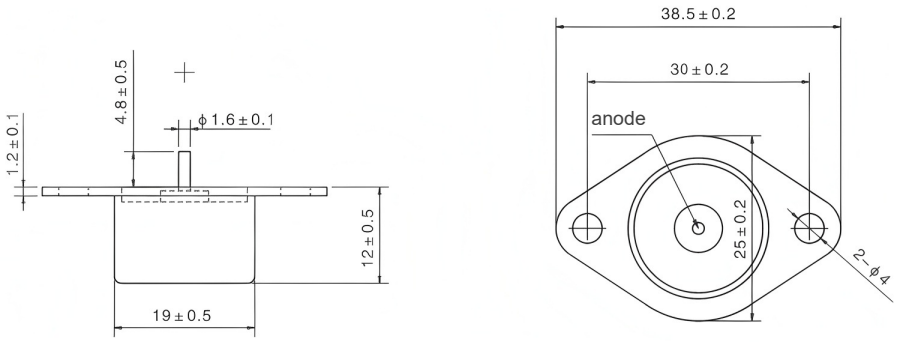
C Type



D Type



E Type



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{_}$=2.20$^{0}_{-1.0}$V, $U_{\sim}$=1.0$^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

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JINPEI

CBEK: With Mounting flange

FEATURES:

- Tantalum case, Hermetically Sealed, Cylindrical, Radial-lead, Heteropolarity, with mounting flange.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.

SPECIFICATIONS

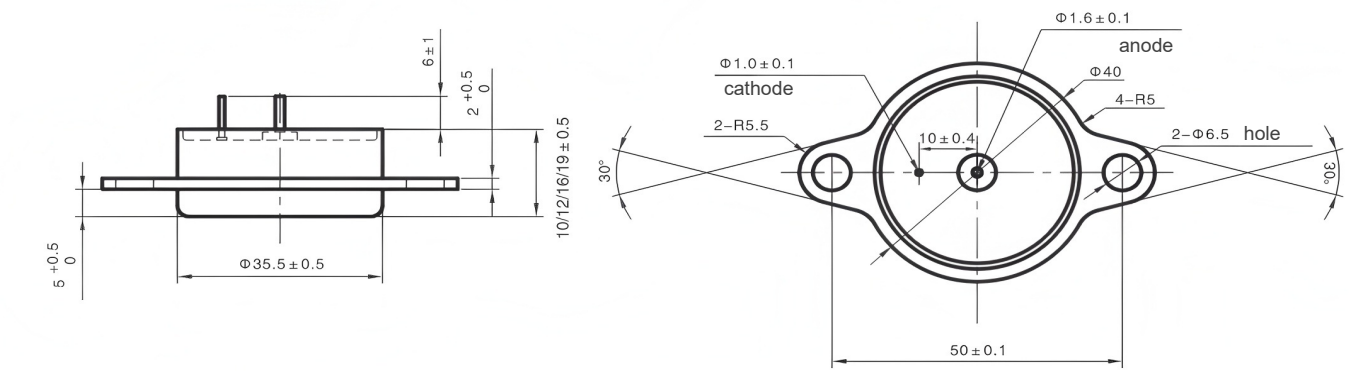
Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)



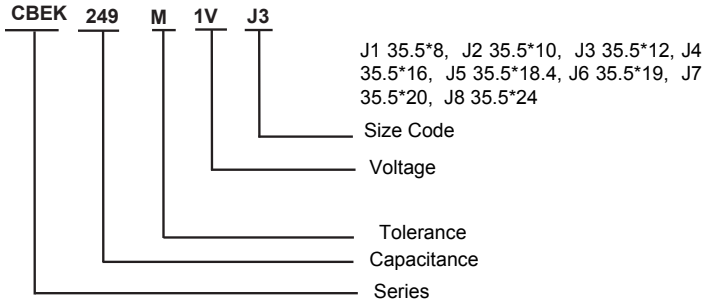


Dimensions (unit: mm)

Φ35.5x10/12/16/19 Layout



PART NUMBER EXAMPLE



CBEK: With Mounting flange

Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%)	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω) 100Hz	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125 ℃	-55℃	-55℃	85℃	(mm)
10 1A	6	11	100000 150000	180	0.035 0.025	300	1800	1	-80	+160	36x12 36x16
16 1C	9.5	17.6	60000 90000	165	0.035 0.025	300	1800	1	-80	+160	36x12 36x16
25 1E	15	27.5	36000 54000	130	0.04 0.035	300	1800	1	-75	+160	36x12 36x16
35 1V	20	38.	24000 36000	95	0.04 0.035	300	1800	1	-70	+160	36x12 36x16
50 1H	30	55	11000 12000 16000 18000 24000	65 65 70 70 70	0.1 0.1 0.04 0.04 0.035	300 300 400 400 400	2400	1.2	-60 -60 -55 -55 -55	+120 +120 +135 +135 +135	36x10 36x12 36x12 36x12 36x16
63 1J	38	70	8000 12000	50	0.04 0.035	400	2400	1.4	-45	+90	36x12 36x16
80 1K	48	88	5600 8200	40	0.06 0.04	500	3000	1.6	-40	+90	36x12 36x16
100 2A	60	110	2400 3800 3600 5700	35	0.08 0.05 0.05 0.05	500	3000	1.8	-30	+80	36x12 36x12 36x16 36x16
110 2F	66	121	1200 1800 3000 4500	35	0.08 0.075 0.075 0.075	500	3000	2	-25	+60	36x12 36x16 36x16 36x16
125 2Q	75	138	1100 1600 2200 3300 3300	30	0.08 0.075 0.075 0.05 0.05	500	3000	2.4 2.4 2.4 2.4 2.2	-25 -25 -25 -25 -20	+50 +50 +50 +50 +45	36x12 36x16 36x12 36x16 36x19

Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{=}=2.20^{0}_{-1.0}$V, $U_{\sim}=1.0^{0}_{-0.5}$V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

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CBEJ

FEATURES:

- Metal case, Square, Heteropolarity.
- Commingled by Electrolytic Tantalum Capacitor and Electrochemical Capacitor, Small size, Super Capacitance
- Stable in Electrical Performances, High Reliability, Long life-span, Maximum in the Density of Capacitance and Energy
- Built-in as battery in Energy-conversed-circuit & Power-pulsed-circuit, functioned as filtering, storage energy, time-delay circuit.



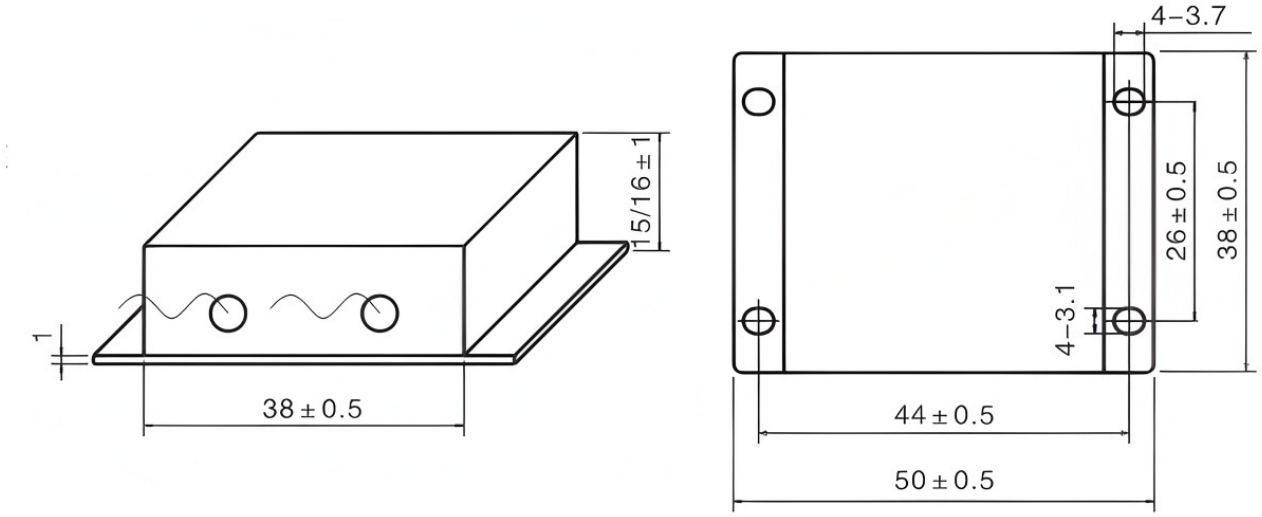
SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	M: (±20%)

Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Surge Voltage (V)	Cap. (μF)	tgδ (%) 100Hz	ESR (Ω) 1kHz	DCL (μA)		Impedance at (Ω)	Capacitance Change at (%)		Dimensions DxH
						25℃	85℃, 125℃	-55℃	-55℃	85℃	(mm)
50 1H	30	55	8000	65	0.1	170	1000	1.2	-40	+120	50x38x15 A1
50 1H	30	55	11000	65	0.1	300	2400	1.2	-60	+120	50x38x16 A2

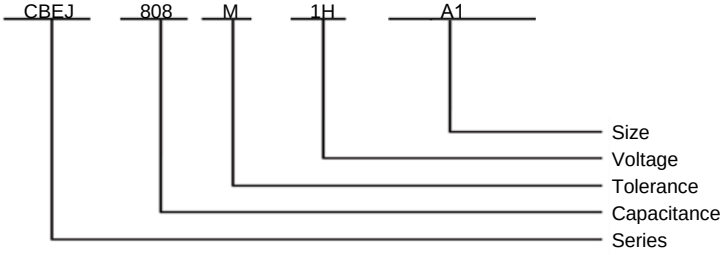
Dimensions (unit: mm)



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, $U_{=}=2.20^{0}_{-1.0}V$, $U_{\sim}=1.0^{0}_{-0.5}V$ Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

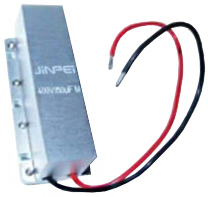
PART NUMBER EXAMPLE



CBEI | HIGH ENERGY HYBRID TANTALUM CAPACITOR

FEATURES:

- This product is a combination of hermetically sealed tantalum capacitors, packaged in a metal case, square, polar capacitor, excellent electrical performance and long life.
- High rated voltage and is suitable for aerospace, aviation, boats and ships, electronics and other fields



SPECIFICATIONS

Operating Temperature	-55℃ to +125℃ (to +125℃, with rated voltage derating)
Storage Temperature	-62℃ ~ +130℃
Capacitance Tolerance	Q: (-10%~+30%), K: (±10%), M: (±20%)
Lead Length	(110±20)mm

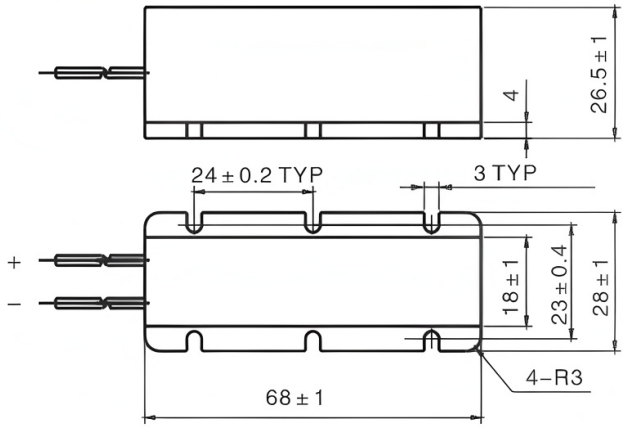
Electrical Characteristics

Rated Voltage (V)	Category Voltage (V)	Cap. (μF)	tgδ (%) 25℃	DCL (μA) 25℃ (Max.)	ESR (Ω) 25℃ 1kHz	Case Code	Dimensions DxH (mm)
400	270	150	30	60	0.68	A	68x28x26.5
400	270	330	40	130	0.48	B	68x46x26.5
400	270		40	130	0.48	C	92x35x26.5
400	270	680	45	270	0.36	D	92x58x26.5
400	270	900	50	360	0.34	E	100x39x40
400	270	1100	50	440	0.30	F	160x48x26.5
400	270	1800	55	720	0.20	G	100x78x40
400	270	2250	55	900	0.16	H	160x82x26.5
400	270	90	30	60	0.2	I	61x28x16
300	200	5000	50	1000	0.2	J	112x86x30
400	270	1200	20	400	0.18	K	150x40x28
400	270	1500	55	600	0.2	L	85x75x30
400	270	3300	40	1000	0.1	M	160x124x31
400	270	4700	40	1500	0.1	N	160x160x31
500	320	500	15	200	0.135	O	98x58x26.5
500	320	220	12	88	0.35	P	42x42x25

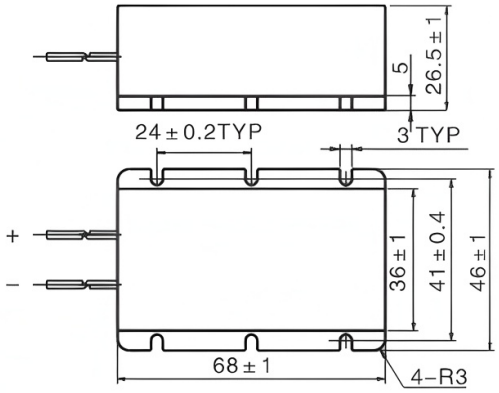
CBEI

Dimensions (unit: mm)

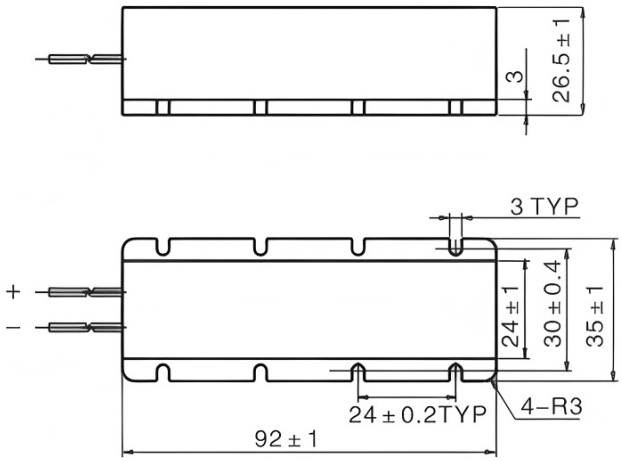
68x28x26.5



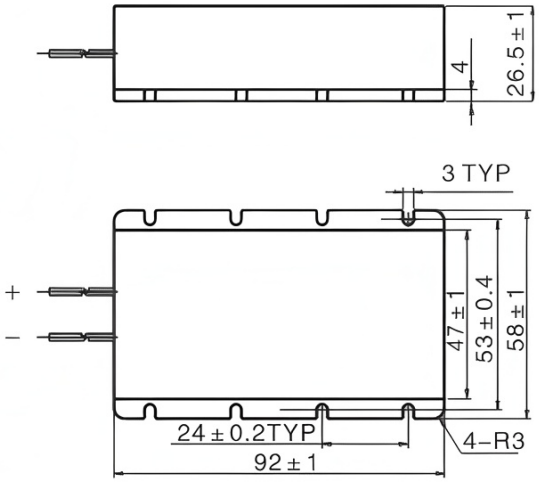
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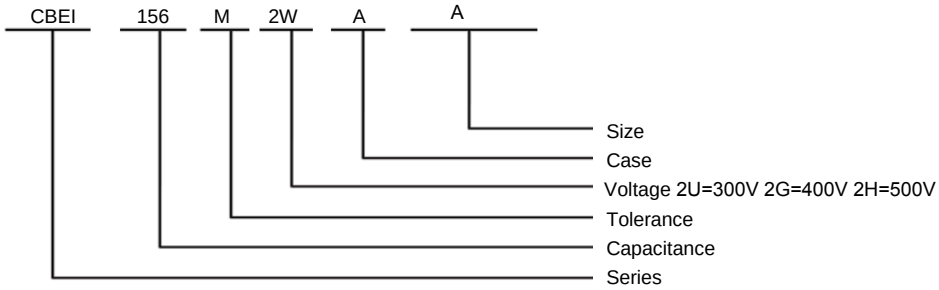
92x35x26.5



92x58x26.5



PART NUMBER EXAMPLE

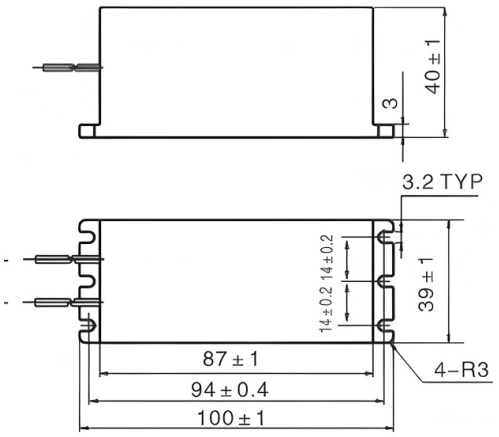


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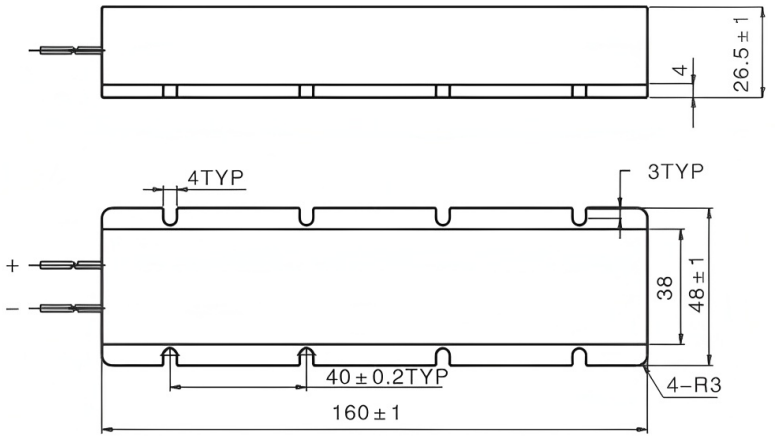
CBEI

Dimensions (unit: mm)

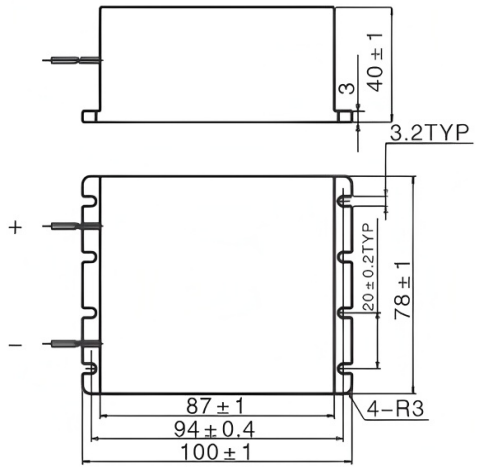
100x39x40



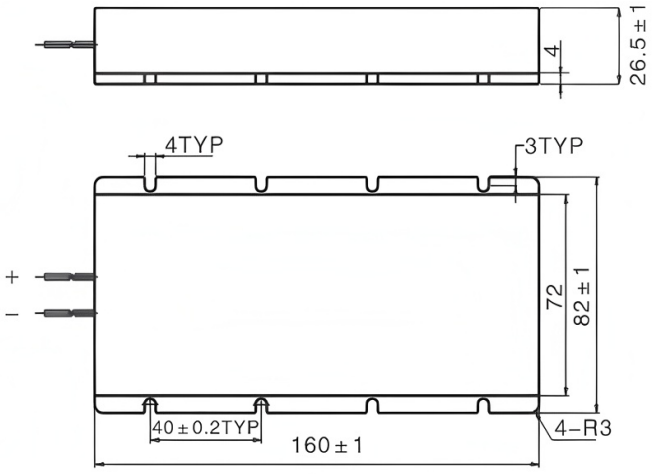
160x48x26.5



100x78x40



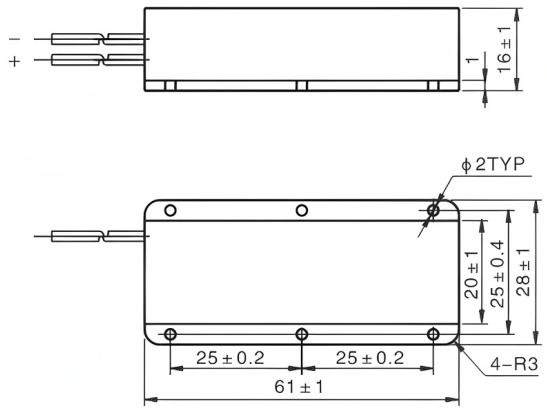
160x82x26.5



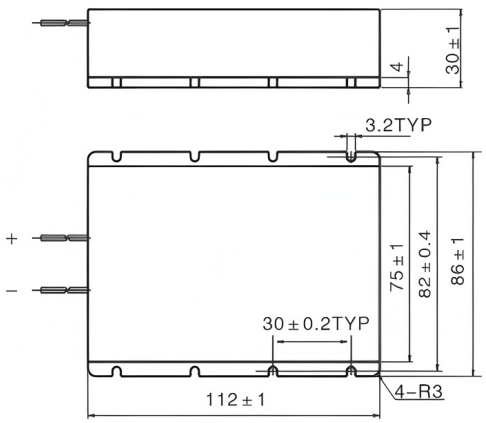
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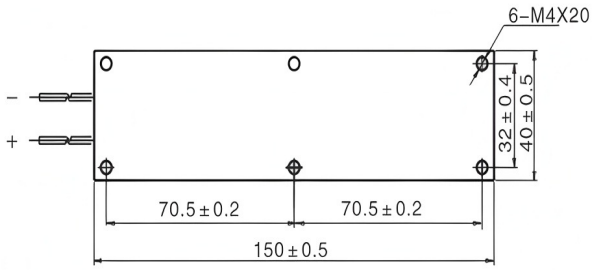
61x28x16



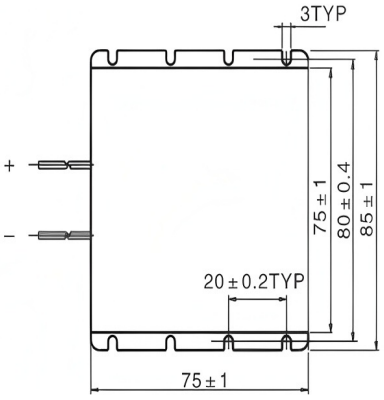
112x86x30



150x40x28

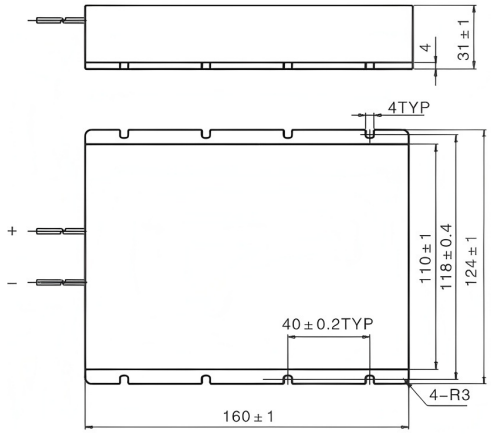


85x75x30

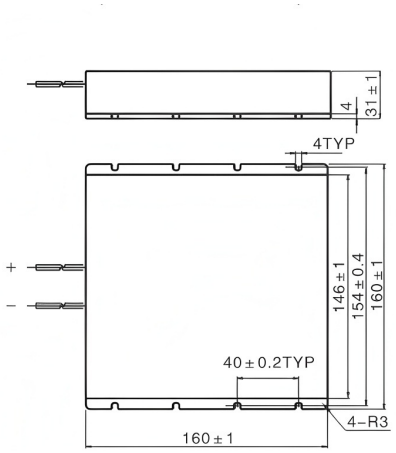


Dimensions (unit: mm)

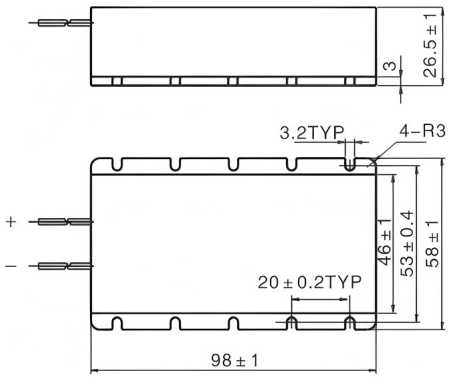
160x124x31



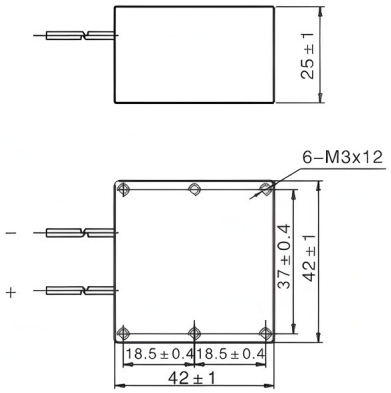
160x160x31



98x58x26.5



42x42x25



Note:

1. Please do not use multimeter through the measuring procedures (may cause irreversible damage and lead to discard).
2. Capacitance and DF measured at 100Hz, U_=2.200-1.0V, U~=1.00-0.5V Test only applied in series equivalent circuit.
3. Voltage derating is applied at +125℃. (The DCL parameter should be read after 5 minutes when it connected to the circuit).
4. Special size and demand could consult with us.

CBGH

Tantalum case,
hermetic seal , 230 ℃

- Failure rate grade available
- Operating temperature range: -55°C to +230°C; derated voltage required when above 85°C
- Withstands 1.5V reverse voltage and handles high ripple current
- Equivalent to Vishay's **T11**
- Standard: GJB 733B-2011

Suitable for DC or pulsating circuits in military electronic equipment with reliability requirements in fields such as aerospace, aviation,
satellites, missiles, weapons, electronics, ships, and communications; particularly suitable for compact integrated equipment in aerospace applications where capacitor size is critical.

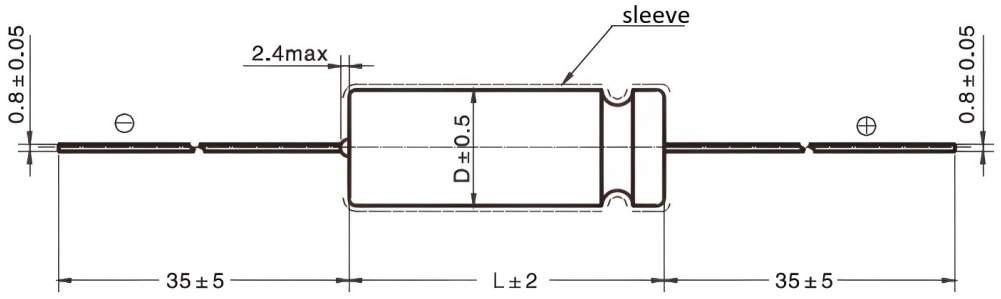


PART NUMBER EXAMPLE

CBGH 227 . 1H T2

- T2 — Case Size
- 1H — Voltage
- . — Tolerance M=20% K=10% J=5%
- 227 — Capacitance 105=1uF 106=10uF 107=100uF 108=1,000uF
- CBGH — Series

Case code	Dimension（mm）		Weight（g）
	D	L	
T2	7.14	16.3	7
T3	9.52	19.5	12
T4	9.52	27	18



CBGH

PARAMTER SHEET

Rated voltage V	Reduced voltage 85℃~125℃	Reduced voltage 230℃	Nominal capacitance	Case code	Leak current μA			Cap. Change %			85℃40 KHZ RC.mA	120HZ ESR（Ω）
					25℃	85℃~125℃	230℃	-25℃	85℃	125℃		
50	30	25	220	T2	2	10	16	-15	25	40	2300	0.9
			330	T3	4	20	32	-25	30	40	2400	1.0
			470	T3	5	25	40	-25	30	50	2650	0.9
			680	T4	8	40	64	-25	30	50	2900	0.9
63	40	30	150	T2	2	10	16	-15	20	30	2050	1.1
			220	T3	4	20	32	-15	20	30	2050	1.0
			330	T3	5	25	40	-15	20	30	2300	0.9
			470	T4	6	30	50	-15	25	35	2450	0.9
75	50	36	100	T2	2	10	16	-15	20	30	1900	1.3
			150	T3	3	15	24	-15	20	25	1900	1.0
			220	T3	5	25	40	-15	10	25	2100	0.9
			330	T4	5	25	40	-15	15	25	2200	0.9
100	65	50	68	T2	2	10	16	-15	10	25	1500	2.1
			100	T3	5	25	40	-15	10	25	1600	1.8
			150	T3	6	30	48	-15	10	20	1800	1.6
			220	T4	8	40	60	-15	10	20	2200	1.2
125	85	62	47	T2	2	10	16	-10	7	20	1450	2.3
			68	T3	3	15	24	-10	7	20	1450	2.3
			100	T3	4	20	32	-10	8	20	1700	1.8
			150	T4	5	25	40	-10	10	20	1900	1.6

1. Do not use a multimeter to measure tantalum capacitors (this may cause irreversible damage, resulting in product failure).

2. Capacitance testing frequency is 100 Hz, U-=2.2 V, U~=1.00 V (RMS).

3. When measuring leakage current at ≥85°C, apply derated voltage; the leakage current value is based on a 5-minute reading.

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CBGC High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+**200℃** operation (hermetic seal)



1,Brief Introduction and Feature

- CBGC(Equative CA58A), All tantalum case ,hermetic sealed, with high-temp insulation sleeve wet tantalum electrolytic capacitors.
- With polar, axial leads through hole.High reliability,long life,high ripple current.
- This unit have a 3V reverse voltage capability.
- Can use in high temperature area.
- Widely used in electronic equipment for high-temp applications such as oil down hole drilling,and other DC or PC.
- Meet standard: QJ/PWV343-2011 Cross MIL-PRF-39006/22/25

2,General Characteristics

Operating Temperature: -55℃～+200℃(>85℃ with voltage derating);

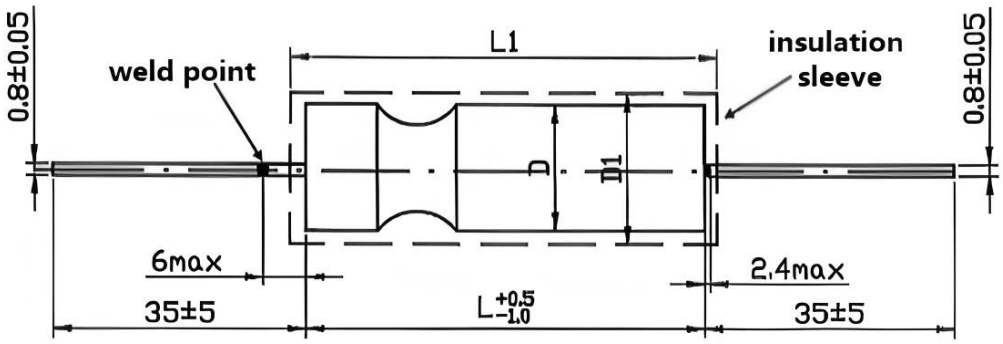
Storage temperature：-62℃～+130℃

Capacitance Tolerance: K=±10% ,M=±20%

Case sizes, Dimensions and Max. weight: As shown in Table 1 and figure 1.

Performance: See table 2

3,Drawing ， Case Dimension and Max. weight



Code	Max. weight（g）	Without sleeve		With sleeve	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	3	4.78	11.51	5.56	12.30
T2	7	7.14	16.28	7.92	17.10
T3	12	9.52	19.46	10.31	20.2
T4	18	9.52	26.97	10.31	27.7

CBGC High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

4, General Characteristics

Rated Voltage	Voltage Derating		Case size	Capacitance （μF）	DCL (μA)Max		Tgδ (%) 25℃	AC ripple 85℃ 40kHz Max (μA)
	125℃	200℃			25℃	85℃ 125℃		
6 0I	4	3.6	T1	30	1	2	9	820
			T1	68	1	2	15	960
			T1	220	2	9	50	1000
			T2	140	1	3	21	1200
			T2	270	1	6.5	45	1375
			T2	560	3	9	70	1500
			T2	820	3	14	155	1500
			T3	330	2	7.9	36	1800
			T3	560	2	13	55	1900
			T3	1200	5	18	80	1900
			T3	1500	5	20	172	1900
			T4	1200	3	14	90	2265
			T4	2200	6	24	170	2300
8 0K	5	4.8	T1	25	1	2	7.5	820
			T1	56	1	2	14	900
			T1	180	2	9	41	1000
			T2	120	1	3	20	1230
			T2	220	1	7	37	1370
			T2	680	3	14	130	1500
			T3	290	2	7.9	34	1770
			T3	430	2	14	46	1825
			T3	1500	5	20	170	1900
			T4	850	4	16	60	2330
			T4	1800	7	25	138	2300
10 1A	7	6	T1	20	1	2	6	820
			T1	47	1	2	13	855
			T1	120	2	6	25	900
			T1	150	2	9	34	900
			T2	100	1	4	15	1200
			T2	180	1	7	30	1365
			T2	390	3	9	80	1450
			T2	560	3	16	106	1450
			T3	250	2	10	30	1720
			T3	390	2	16	44	1800
			T3	1200	5	20	137	1850
			T4	750	4	16	50	2360
			T4	1500	7	25	114	2300

CBGC High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

Rated Voltage	Voltage Derating		Case size	Capacitance （μF）	DCL (μA)Max		Tgδ (%) 25℃	AC ripple 85℃ 40kHz max(μA)
	125℃	200℃			25℃	85℃ 125℃		
15 1R	10	9	T1	15	1	2	5	780
			T1	33	1	2	10	820
			T1	82	2	6	25	900
			T1	100	2	9	30	900
			T2	70	1	4	13	1150
			T2	120	1	7	18	1450
			T2	270	3	9	55	1450
			T2	390	3	16	74	1450
			T3	170	2	10	25	1480
			T3	270	2	16	32	1740
			T3	680	6	18	80	1800
			T3	820	6	24	111	1800
			T4	540	6	24	40	2330
			T4	1000	8	32	92	2330
25 1E	15	12	T1	10	1	2	4	715
			T1	22	1	2	6.6	800
			T1	47	2	6	20	800
			T1	56	2	6	20	850
			T1	68	2	9	22	850
			T2	50	1	2	11	1130
			T2	100	1	10	15	1435
			T2	180	3	9	50	1400
			T2	270	3	16	55	1400
			T3	120	2	6	21	1450
			T3	180	2	18	26	1525
			T3	390	6	18	40	1500
			T3	470	6	18	50	1750
			T3	560	7	28	76	1750
			T4	350	7	28	35	1970
			T4	680	8	32	63	2100
30	20	18	T1	8	1	2	4	640
			T1	15	1	2	5	780
			T1	47	2	6	17	800
			T1	56	2	9	22	800
			T2	40	1	5	10	1120
			T2	68	1	8	13	1285
			T2	150	3	9	35	1200

CBGC High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

Rated Voltage	Voltage Derating		Case size	Capacitance (μF)	DCL (μA)Max		Tgδ (%) 25℃	AC ripple 85℃ 40kHz max(μA)
	125℃	200℃			25℃	85℃ 125℃		
30 1U	20	18	T2	220	3	16	42	1200
			T3	100	2	12	17	1450
			T3	150	2	18	23	1525
			T3	390	6	18	50	1500
			T3	470	8	32	64	1500
			T4	300	8	32	31	1950
			T4	560	9	36	55	2000
35 1V	22	21	T1	15	1	1.6	3.5	660
			T1	39	2	6	20	820
			T2	68	1	2.2	4	1195
			T2	120	3	10	30	1315
			T3	330	6	18	40	1640
			T4	270	3	12.5	25	1950
			T4	370	9	36	40	2040
40 1G	26	24	T1	39	2	6	25	820
50 1H	30	30	T1	5	1	2	3	580
			T1	10	1	2	4	715
			T1	33	2	9	12.3	700
			T2	25	1	5	8	1005
			T2	47	1	9	11	1155
			T2	100	4	12	20	1200
			T2	120	4	24	22.5	1200
			T3	60	2	12	12	1335
			T3	82	2	18	15	1400
			T3	270	8	32	37	1450
			T4	160	8	32	17	1900
			T4	330	9	36	38	1900
60 1I	40	36	T1	4	1	2	2.8	525
			T1	8.2	1	2	4	625
			T1	18	2	12	10	700
			T1	27	3	12	10.2	700
			T2	20	1	5	7	930
			T2	39	1	9	10	1110
			T2	82	4	16	17	1100
			T2	100	4	20	19	1100
			T3	50	2	12	10	1330
			T3	68	2	18	13	1365

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CBGC High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

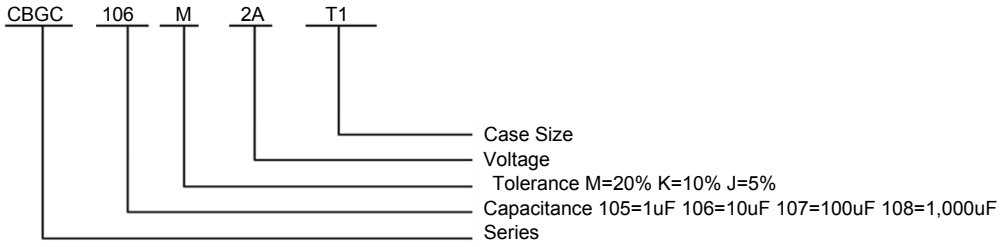
Rated Voltage	Voltage Derating		Case size	Capacitance （μF）	DCL (μA)Max		Tgδ (%) 25℃	AC ripple 85℃ 40kHz max(μA)
	125℃	200℃			25℃	85℃ 125℃		
60 1I	40	36	T3	220	8	32	30	1400
			T4	140	8	32	16	1850
			T4	270	9	36	27	1850
			T4	330	10	40	30	1850
63 1J	42	38	T1	10	1	2	8	715
			T2	100	2	12	16	1100
75 1M	50	45	T1	3.5	1	2	2.5	525
			T1	6.8	1	2	3.5	610
			T1	12	3	12	6	600
			T1	22	3	12	8.5	600
			T2	15	1	5	6	890
			T2	33	1	10	10	1000
			T2	68	4	16	15	1000
			T2	82	4	24	15.2	1000
			T3	40	2	12	9	1250
			T3	56	2	18	11	1335
			T3	180	9	36	24.4	1300
			T4	110	8	36	12	1850
			T4	220	10	40	37	1800
			T4	300	12	48	38	2000
100 2A	65	60	T1	2.5	1	2	2	505
			T1	4.7	1	2	3	565
			T1	10	3	12	4.5	800
			T2	11	1	5	5	835
			T2	22	1	8	7.5	965
			T2	39	5	24	10.4	1300
			T3	25	2	12	7	1200
			T3	30	2	16	8	1240
			T3	43	2	18	8.5	1335
			T3	68	10	40	11.3	1600
			T4	56	5	25	9	1800
			T4	86	8	32	10	1800
			T4	120	12	48	25	2000
125 2Q	85	75	T1	1.7	1	2	2	415
			T1	3.6	1	2	2.7	520
			T1	6.8	3	12	6	700
			T2	9	1	5	5	755

CBGC High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

Rated	Voltage Derating		Case size	Capacitance （μF）	DCL (μA)Max		Tgδ (%) 25℃	AC ripple 85℃ 40kHz max(μA)
	125℃	200℃			25℃	85℃ 125℃		
125 2Q	85	75	T2	14	1	8	6	860
			T2	27	5	24	7.2	1200
			T3	18	2	12	5	1130
			T3	25	2	18	6	1200
			T3	47	10	40	7.9	1500
			T4	56	8	32	6.5	1800
			T4	68	11	44	10	1850
			T4	82	12	48	17.4	1900

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz， U-=2.20 -1.0V， U~=1.00 -0.5V(effective value), measure method is by series equivalent circuit.

3、Measure leakage current above 125℃,please use derated voltage. DLC read within 5 minute.

4、Special size and big capacitance products, please negotiate with us

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CBGD High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)



1,Brief Introduction and Feature

- CBGD(Equative CA58B), All tantalum case ,hermetic sealed, with high-temp insulation sleeve wet tantalum electrolytic capacitors.
- With polar, axial leads through hole.High reliability,long life,high ripple current.
- Widely used in electronic equipment for high-temp applications such as oil down hole drilling,and other DC or PC.
- Meet standard: QJ/PWV344-2011 Cross Vishay part 134D

2,General Characteristics

- Operating Temperature: -55℃～+200℃(>85℃ with voltage derating);
- Storage temperature：-62℃～+130℃
- Capacitance Tolerance: K=±10% ,M=±20%
- Case sizes, Dimensions and Max. weight: As shown in Table 1 and figure 1.
- Performance: See table 2

3,Drawing ， Case Dimension and Max. weight

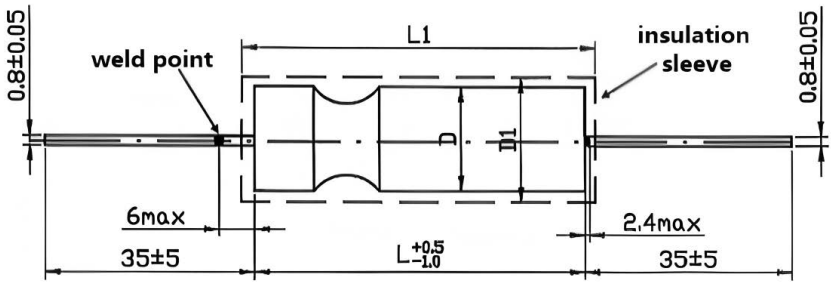


Table 1

Code	Max. weight（g）	Without sleeve		With sleeve	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	3	4.78	11.51	5.56	12.30
T2	7	7.14	16.28	7.92	17.10
T3	12	9.52	19.46	10.31	20.20
T4	18	9.52	26.97	10.31	27.70

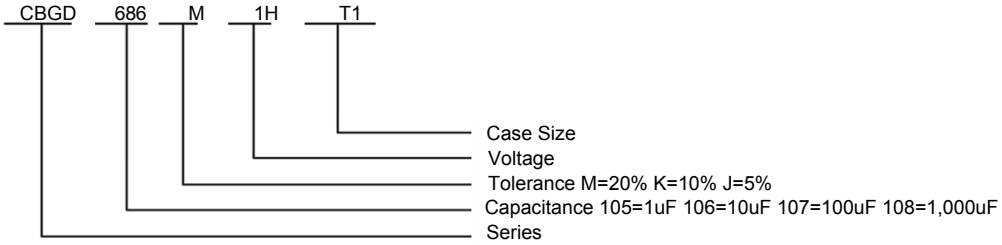
CBGD High-Temp Wet Tantalum Capacitor

All Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

4, General Characteristics

Rated Voltage	Voltage Derating		Case size	Capacitance (μF)	DCL (μA)Max		Tgδ (%)	AC ripple
	125℃	200℃			25℃	85℃ 125℃	25℃	85℃ 40kHz Max (μA)
50 1H	30	30	T1	68	1	5	22	1400
			T2	220	2	10	28	2300
			T3	470	3	25	30	2650
			T4	680	5	40	38	2900
60 1I	40	36	T1	47	1	5	20	1250
			T2	150	2	10	23	2050
			T3	390	3	25	25	2450
			T4	560	5	40	35	2700
75 1M	50	45	T1	33	1	5	20	1100
			T2	110	2	10	25	1900
			T3	330	3	30	30	2300
			T4	470	5	50	40	2550
100 2A	65	60	T1	15	1	5	15	950
			T2	68	2	10	20	1500
			T3	150	3	25	25	1800
			T4	220	5	50	25	2200
			T4	400	15	120	100	3250
125 2Q	85	75	T1	10	1	5	10	750
			T2	47	2	10	15	1450
			T2	50	3	10	15	1450
			T3	100	3	25	20	1700
			T4	150	5	50	20	1900

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，U=2.20-1.0V，U=1.00-0.5V(effective value), measure method is by series equivalent circuit.

3、Measure leakage current above 125℃,please use derated voltage. DLC read within 5 minute.

4、Special size and big capacitance products, please negotiate with us

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CBGE- 200℃ Wet Tantalum Capacitor

hermetic seal,equative CA53D

Characteristics and Application

◆Silver case, **Hermetic Seal**, tubular, Axial leads, **High temperature sleeve**, Polarized.

◆Good performance of electrical, High reliability, long life, Low DF and LC.

◆Small Size, **good high temperature performance, Can use at 200 ℃.**

◆Suit for down-hole-drilling instrumentation and high temperature electronic devices DC or pulse circuit.

◆Implementation of standards: QJ/PWV308-2009, Can cross Vishay's 135D



Technical Performance:

Operation temperature: -55℃~+200℃ (＞85℃ use derated voltage)

Capacitance Tolerance: K=±10%； M=±20%； Q=-10%~+30%

Dissipation Factor: 25℃， 100Hz (see table 2)

Leakage current：

25℃ I≤0.001 CRUR（μA）or 1μA (whichever is greater)

85℃ I≤0.008 CRUR（μA）or 8μA (whichever is greater)

200℃ I≤0.04 CRUR（μA）or 40μA (whichever is greater)

Diagram of Dimension (mm)

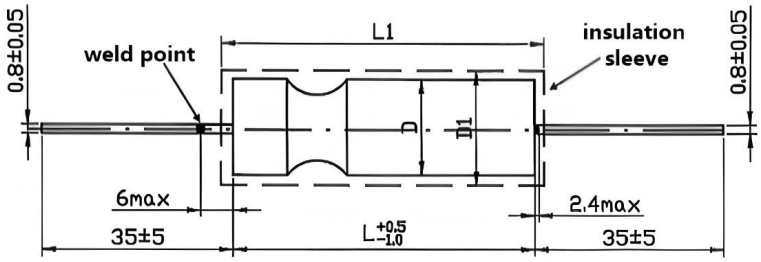


Table1 Case size and Maximum weight

Case code	Max weight （g）	Without Sleeve		With Sleeve	
		D±0.5	L±2	D_1max	L max
		（mm）	（mm）	（mm）	（mm）
0	3	5	12	5.8	14
1	4	5	14	5.8	16
2	4	6	15	6.8	17
3	5	8	17	8.8	19
4	7	8	22	8.8	24
5	10	10	22	10.8	24
6	14	10	25	10.8	27
7	17	10	30	10.8	32

CBGE- 200℃ Wet Tantalum Capacitor

(hermetic seal)

Table2 Rated Voltage,derated voltage, capacitance, case code and dissipation factor

Rated Volatge U_R(V) 25℃,85℃	Derated Voltage U_C(V) 125℃	Derated Voltage U_C(V) 200℃	Case code	Cap. C_R(μF)	tgδ(%) DF 25℃	Rated Voltage U_R(V) 25℃,85℃	Derated Voltage U_C(V) 125℃	Derated Voltage U_C(V) 200℃	Case code	Cap. C_R(μF)	tgδ(%) DF 25℃
6 0I (6.3 0J)	4 (4.5)	3.6 (4.0)	0	30	7	15	10	9	0	15	5.7
			0	68	20				0	33	12
			2	140	35				2	70	20
			2	220	40				2	82	25
			3	270	50				2	100	30
			3	330	50				2	120	35
			3	470	70				3	170	60
			3	560	90				3	270	60
			4	820	100				3	390	65
			5	1200	120				4	540	70
			6	1500	120				5	680	75
			7	2200	160				6	820	85
8 0K	5	4.8	0	25	9				7	1000	100
			0	56	20	25	15	12	0	10	4.6
			2	120	35				0	22	8.3
			2	180	40				2	50	15
			2	220	45				2	56	15
			3	290	50				2	68	20
			3	430	85				2	100	25
			3	680	90				3	120	50
			4	850	100				3	160	50
									3	180	50
			6	1500	120				3	270	50
			7	1800	120				4	350	50
10 1A	7	6	0	20	7				5	470	55
			0	47	15				6	560	60
			2	100	25				6	680	70
			2	120	30	30	20	18	0	8	4.5
			2	150	35				0	15	9
			2	180	45				2	40	15
			3	250	70				2	47	15
			3	390	75				2	56	15
			4	560	85				2	68	20
			4	750	90				3	100	35
			5	1200	120				3	150	35
			6	1500	120				3	220	40
30 1U	20	18	5	470	55				4	300	45
			6	560	65				4	390	50

CBGE- 200℃ Wet Tantalum Capacitor

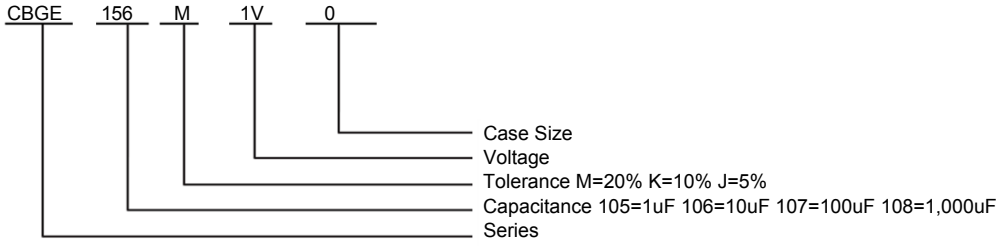
(hermetic seal)

Rated Volatge U_R(V) 25℃,85℃	Derated Voltage U_C(V) 125℃	Derated Voltage U_C(V) 200℃	Case code	Cap. C_R(μF)	tgδ(%) DF 25℃	Rated Voltage U_R(V) 25℃,85℃	Derated Voltage U_C(V) 125℃	Derated Voltage U_C(V) 200℃	Case code	Cap. C_R(μF)	tgδ(%) DF 25℃
35 1V	22	21	0	15	9	75 1M	50	45	0	3.5	6
			2	39	16				0	6.8	8
			2	68	20				2	15	15
			3	100	25				2	22	15
			3	120	30				3	33	20
			4	270	45				3	40	25
			5	330	45				3	47	25
			5	370	50				3	56	25
			5	470	55				3	68	25
			7	680	65				3	82	25
50	30	30	0	5	5				5	110	25
			0	10	8	100 2A	65	60	0	2.5	5
			2	25	12				1	4.7	6
			2	33	20				2	10	10
			2	47	25				3	22	12
			3	60	25				3	25	20
			3	82	25				3	30	20
			3	100	25				3	39	25
			4	160	28				4	43	25
			5	270	40				4	56	25
60 1I (63 1J)	40 (42)	36 (38)	0	4	5				5	86	25
			0	8.2	8				6	120	25
			2	20	12	125 2Q	85	75	0	1.7	6
			2	27	15				1	3.6	6
			2	39	25				2	6.8	10
			3	50	25				2	9	13
			3	68	25				3	14	13
			3	82	25				3	18	20
			3	100	25				4	22	25
			3	130	28				4	27	25
			4	140	28				4	33	25
			5	270	40						

CBGE- 200℃ Wet Tantalum Capacitor

(hermetic seal)

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz， $U_{=}=2.2^{0}_{-1.0}V$， $U_{\sim}=1.0^{0}_{-0.5}V$(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

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CBGF High-Temp Wet Tantalum Capacitor

1, Brief Introduction and Feature



1) CBGF(Equative CA382), All tantalum case ,hermetic sealed, with high-temp insulated sleeve wet tantalum electrolytic capacitors.
2) With polar, axial leads through hole.High reliability,long life,
3) This unit have a 3V reverse voltage capability. Big ripple current.
4) Can use in high temperature area 200℃ available.
5) Widely used in electronic equipment for high-temp applications such as oil down hole drilling, aerospace,satellite,military equipment and other DC or PC.

Meet standard: Q/RTO.464.199-2014

2, General Characteristics

1) Operating Temperature: -55℃～+200℃(>85℃ use voltage derating);
2) Storage temperature：-62℃～+130℃
3) Capacitance Tolerance: K=±10% ,M=±20%,-10%~+30%,-20%~+50%
4) Leakage current: see the table 2 list
5) Ripple current: see the table 2 list
6) Dimensions and Max. weight: See table 1

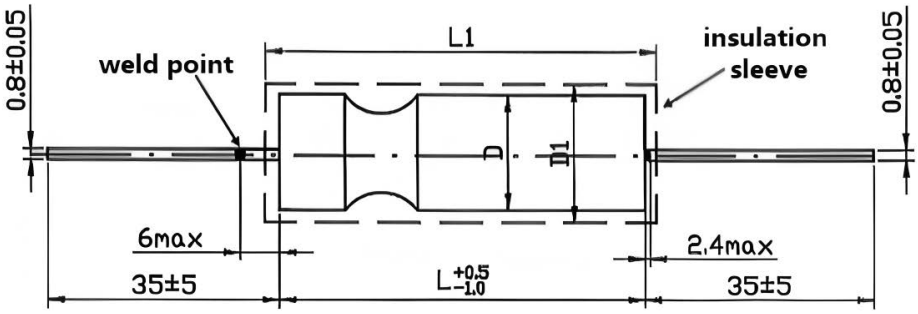


Table 1 Dimension

Case Code	Dimension (mm)		L±1.5 (mm)	Max. Weight (g)
	Without Sleeve D±0.4	With Sleeve D1 Max		
T1	4.78	5.56	11.5	3
T2	7.14	7.92	16.3	7
T3	9.52	10.31	19.5	12
T4	9.52	10.31	27.0	18
*T5	9.52	10.31	27.8	20
*T6	9.9	10.7	27.2	22
*T7	9.9	10.7	30	24

CBGF High-Temp Wet Tantalum Capacitor

Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

3, Table 2 General characteristics

Rated Vol. (V)	A Derated Vol. 125℃ (V)	B Derated Vol. 200℃ (V)	Nominal Cap. (μF)	Dissipation Factor +25℃ +85℃ +200℃ (%)	Leakage current (μA) +25℃	Leakage current (μA) +85℃ +125℃	Impedance 100Hz -55℃ (Ω)	Cap change rate (%) -55℃	Cap change rate (%) +85℃	Cap change rate (%) +200℃	85℃ 40KHZ AC Ripple current (mA)	Case Code
6 0I	4	3.6	30	7	1	2	100	-40	+11	+15	820	T1
			68	12			60		+14	+18	960	
			140	17		3	40			+20	1200	T2
			270	30		7	25	-44	+18	+25	1375	
			330	30	2	8	20		+14	+20	1800	T3
			560	45		13	25	-64	+18	+25	1900	
			1200	90	3	14	20	-80	+25	+30	2265	T4
8 0K	5	4.8	25	7	1	2	100	-40	+11	+15	820	T1
			56	10			59		+14	+18	900	
			120	15			50	-44	+18	+20	1220	T2
			220	30		7	30			+25	1370	
			290	30	2	6	25	-64			1770	T3
			430	36		14	25				1825	
			850	50	4	16	22	-80	+25	+30	2330	T4
10 1A	7	6	20	5	1	2	175	-32	+11	+15	820	T1
			47	11			100	-36	+14	+18	855	
			100	12		4	60			+20	1200	T2
			180	20		7	40			+25	1365	
			250	25	2	10	30	-40			1720	T3
			390	25		16	25	-64	+18		1800	
			750	40	4		23	-80	+25	+30	2360	T4
15 1R	10	9	15	5	1	2	155	-24	+11	+15	780	T1
			33	8			90	-28	+14	+18	820	
			70	10		4	75				1150	T2
			120	15		7	50		+18	+20	1450	
			170	20	2	10	35	-32	+14		1480	T3
			270	25		16	30	-56	+18	+25	1740	
			540	35	6	20	23	-80	+25	+30	2330	T4
25 1E	15	12	10	4	1	2	220	-16	+8	+10	715	T1
			22	5.5			140	-20	+11		825	
			50	8			70	-28	+13	+15	1130	T2
			100	12		9	50				1435	
			120	18	2	6	38	-32			1450	T3
			180	20		16	32	-48			1525	
			350	30	7	21	24	-70	+25	+30	1970	T4

CBGF High-Temp Wet Tantalum Capacitor

Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

Table 2 General characteristics

Rated Vol. (V)	A Derated Vol. 125℃ (V)	B Derated Vol. 200℃ (V)	Nominal Cap. (μF)	Dissipation Factor +25℃ +85℃ +200℃ (%)	Leakage current (μA) +25℃	Leakage current (μA) +85℃ +125℃	Impedance 100Hz -55℃ (Ω)	Cap change rate (%) -55℃	Cap change rate (%) +85℃	Cap change rate (%) +200℃	85℃ 40KHZ AC Ripple current (mA)	Case Code
30 1U	20	18	8	4	1	2	275	-16	+8	+12	640	T1
			15	5			175	-20	+11	+15	780	
			40	8		5	65	-24			1120	T2
			68	11		8	60		+13		1285	
			100	15	2	10	40	-28	+11	+18	1450	T3
			150	20		15	35	-48	+13	+25	1525	
			300	25	8	32	25	-60	+25	+35	1950	T4
50 1H	30	30	5	3	1	2	400	-16	+5	+9	580	T1
			10	4		2	250	-24	+8	+12	715	
			25	7		5	95	-20	+11	+15	1005	T2
			47	10		8	70	-28	+13	+18	1155	
			60	10	2	10	45	-16	+11	+15	1335	T3
			82	12		12	45	-32	+13	+18	1400	
			160	15	8	30	27	-50	+25	+30	1900	T4
60 1I	40	36	4	2.8	1	2	550	-16	+5	+9	525	T1
			8.2	4		2	275	-24	+8	+12	625	
			20	6		5	105	-16	+11	+15	930	T2
			39	8		8	90	-28			1110	
			50	9	2	10	50	-16			1330	T3
			68	10		10	45	-32			1365	
			140	12	8	30	28	-40	+20	+25	1850	T4
			*560	50	30	160	25	-60	+40	+50	2800	T5
75 1M	50	45	3.5	2.5	1	2	650	-16	+5	+9	525	T1
			6.8	3.5		2	300	-20	+8	+12	610	
			15	5		5	150	-16			890	T2
			33	8		9	90	-24		+18	1000	
			40	8	2	10	60	-16	+11	+15	1250	T3
			56	10		12		-28		+18	1335	
100 2A	65	60	110	10	9	30	29	-35	+20	+25	1850	T4
			2.5	2	1	2	950	-16	+7	+10	505	T1
			4.7	3		2	500	-20			565	
			11	5		4	200	-16	+8		835	T2
			22	6		9	100	-24			965	

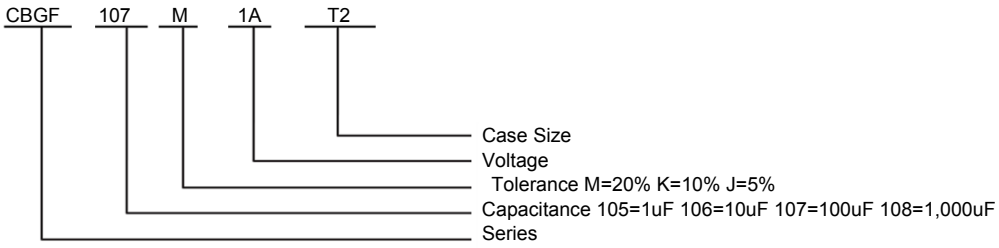
CBGF High-Temp Wet Tantalum Capacitor

Tantalum Case, for -55℃～+200℃ operation (hermetic seal)

Table 2 General characteristics

Rated Vol. (V)	A Derated Vol. 125℃ (V)	B Derated Vol. 200℃ (V)	Nominal Cap. (μF)	Dissipation Factor +25℃ +85℃ +200℃ (%)	Leakage current (μA) +25℃	Leakage current (μA) +85℃ +125℃	Impedance 100Hz -55℃ (Ω)	Cap change rate (%) -55℃	Cap change rate (%) +85℃	Cap change rate (%) +200℃	85℃ 40KHZ AC Ripple current (mA)	Case Code
100 2A	65	60	30	6	2	10	80	-16			1240	T3
			43	7		14	70	-20			1335	
			86	8	9	30	30	-25	+15	+18	1800	T4
			*400	45	40	120	20	-70	+20	+30	3000	T6
			*440	50	50	140	20	-70	+20	+80	3000	T7
125 2Q	85	75	1.7	2	1	2	1250	-16	+7	+10	415	T1
			3.6	2.7		2	600				520	
			9	5		5	240				755	T2
			14	5		7	167				860	
			18	6	2	9	129				1130	T3
			25	6		10	93				1200	
			56	6.5	10	40	32	-25	+15	+18	1800	T4

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

A Derated Vol. 125℃ (V) means temperature range 85℃~125℃ (not include 85℃ but include 125℃)

B Derated Vol. 200℃ (V) means temperature range 125℃~200℃ (not include 125℃ but include 200℃)

2、Capacitance, DF measure frequency: 100Hz，U_{-}=2.2$^{0}_{1.0}$V，$U_{\sim}$=1.0 $^{0}_{0.5}$V(effective value), measure method is by series equivalent circuit.

3、Measure leakage current above 125℃,please use derated voltage. DLC read within 5 minute.

4、Special size and big capacitance products, please negotiate with us

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CBGG-200℃ Wet Tantalum Capacitor

Silver case , hermetic seal,equative CA53

Characteristics and Application

- ◆ Silver case, **Hermetic Sealed**, tubular, Axial leads, High temperature sleeve, Polar
- ◆Good electric performance, High reliability, long life, Low DF and LC.
- ◆Small Size, High temperature performance, Can use at 200 ℃.
- ◆Suit for down-hole-drilling instrumentation and high temperature electronic devices DC or pulse circuit.
- ◆Implementation of standards: QJ/PWV307-2009, Can cross Vishay's 134D



Technical Performance:

Operation temperature: -55℃~+200℃ (＞85℃ use derated voltage)

Capacitance Tolerance: K=±10%； M=±20%； Q:-10%~+30%

Dissipation Factor: 25℃， 100Hz (see table 2)

Leakage current：

25℃ I≤0.001 $C_R U_R$（μA）or 1μA (whichever is greater)

85℃ I≤0.008 $C_R U_R$（μA）or 8μA (whichever is greater)

200℃ I≤0.04 $C_R U_R$（μA）or 40μA (whichever is greater)

Diagram of Dimension (mm)

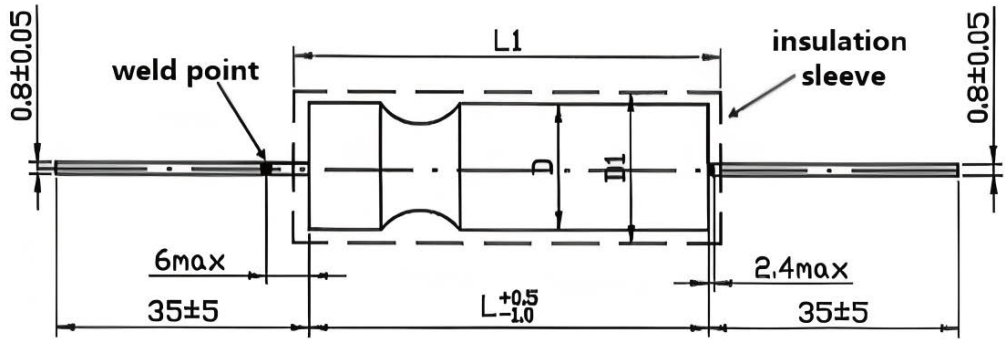


Table1 Case size and maximum weight

Case code	Max weight (g)	Without Sleeve		With Sleeve	
		D±0.5	L±2	D_1max	L max
		(mm)	(mm)	(mm)	(mm)
1	4	6	15	6.8	17
2	5	8	17	8.8	19
3	7	8	22	8.8	24
4	10	10	22	10.8	24
5	14	10	25	10.8	27
6	17	10	30	10.8	32

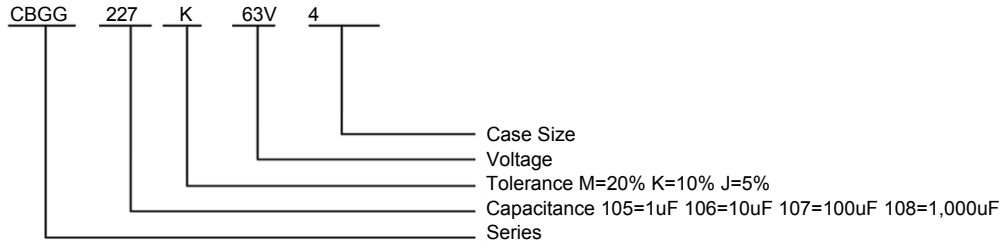
CBGG-200℃ Wet Tantalum Capacitor

Silver case , hermetic seal

Table2 General parameters

Rated Volatge U_R(V) 25℃,85℃	Derated Voltage U_C(V) 125℃	Derated Voltage U_C(V) 200℃	Case code	Cap C_R(μF)	tgδ(%) DF 25℃	Rated Voltage U_R(V) 25℃,85℃	Derated Voltage UC(V) 125℃	Derated Voltage UC(V) 200℃	Case code	Cap C_R(μF)	tgδ(%) DF 25℃
50 1H	30	30	1	68	25	75 1M	50	45	4	220	25
			2	100	25				5	330	30
			2	120	25				6	470	30
			3	220	28	100 2A	65	60	1	15	15
			5	330	30				2	33	20
			6	470	30				3	47	25
			6	560	33				3	68	25
			6	680	35				4	120	25
60 1I (63 1J)	40 (42)	36 (38)	1	47	25				5	150	28
			3	150	28				6	220	28
			4	220	30	125 2Q	85	75	1	10	13
			4	330	30				4	47	20
			5	390	30				4	56	20
			6	470	35				5	68	25
			6	560	35				6	82	25
75 1M	50	45	1	33	12				6	100	25
			2	82	20				6	120	25
			2	110	25				6	150	28
			4	180	25						

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz， $U_{=}$=2.2 $^{0}_{-1.0}$V， $U_{\sim}$=1.0 $^{0}_{-0.5}$V(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

185℃HIGH TEMPERATURE TANTALUM CAPACITOR

CBGY

CHARACTERS AND USES

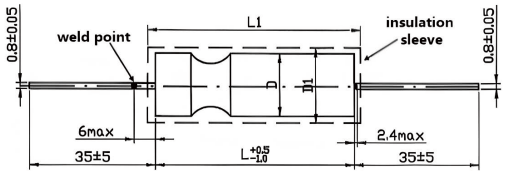
- Silver case, gas seal, Cylindrical, Axial leads, High temperature sleeve, Polar
- Good electric performance, High reliability, long life, Low DF and LC.
- High temperature performance, Can use at 185 ℃
- Suit for oil drilling deep well measurements and high temperatureelectronic devices DC or pulse circuit
- Implementation of standards: QJ/PWV222–2008
- Equative CA502 series

Technical Performance

- Operation temperature: −55℃~+185℃ (>155℃ use derated voltage)
- Capacitance Tolerance: ±10%; ±20%; −10%~+30%
- Dissipation Factor: 25℃, 100Hz (see table 2)
- Leakage Current: 25℃ $I_O \leqslant 0.002 C_R U_R$ (μA) or 2μA (whichever is greater)

  185℃ $I_O \leqslant 0.04 C_R U_R$ (μA) or 40μA (whichever is greater)





CASE SIZE AND MAXIMUM WEIGHT

TABLE1

Case code	Max Weight (g)	With Sleeve		Without Sleeve	
		D ± 0.5 (mm)	L ± 2 (mm)	D max (mm)	L max (mm)
1	4	5	14	5.8	16
2	5	6	16	6.8	18
3	7	8	16	8.8	18
4	10	8	22	8.8	24
5	14	10	22	10.8	24
6	17	10	25	10.8	27
7	20	10	30	10.8	32

PART NUMBER EXAMPLE:

CBGY 687 K 1A 5

- 5 — Case Code
- 1A — Voltage
- K — Tolerance M=20% K=10% J=5%
- 687 — Capacitance 105=1uF 106=10uF 107=100uF 108=1,000uF
- CBGY — Series

RATED VOLTAGE,DERATED VOLTAGE, CAPACITANCE, CASE CODE AND DISSIPATION FACTOR

TABLE2

Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tg δ(%) 25℃	Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tgδ(%) 25℃
6.3 0J	3	1	22	45	40 1G	15	1	4.8	15
		1	33	45			1	6.8	20
		1	47	45			1	10	20
		1	68	45			1	15	25
		2	100	50			1	22	30
		2	150	50			2	33	30
		3	220	70			2	47	35
		3	330	75			2	68	30
		4	470	95			3	100	45
		4	680	95			4	150	45
		5	1000	100			5	220	45
10 1A	5	1	15	40	50 1H	20	1	3.3	10
		1	22	40			1	4.7	15
		1	33	40			1	6.8	15
		1	47	45			1	10	15
		1	68	45			2	15	15
		2	100	50			2	22	20
		2	150	60			2	33	25
		3	220	65			3	47	25
		3	330	80			4	68	35
		4	470	85			4	100	35
		4	680	85			5	150	30

TABLE2

Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tg δ(%) 25℃	Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tgδ(%) 25℃
16 1C	7	1	10	30	63 1J	25	1	3.3	10
		1	15	30			1	4.7	15
		1	22	35			1	6.8	15
		1	33	35			1	10	15
		1	47	40			2	15	15
		2	68	40			2	22	20
		2	100	45			3	33	25
		3	150	45			3	47	25
		3	220	70			4	68	35
		4	330	80			5	100	35
		4	470	85			6	150	30
25 1E	10	1	6.8	20	75 1M	30	1	3.3	10
		1	10	20			1	47.	10
		1	15	20			1	6.8	15
		1	22	25			2	10	20
		1	33	25			2	15	25
		2	47	30			3	22	35
		2	68	30			3	33	35
		2	100	40			4	47	33
		3	150	45			5	68	30
		4	220	60			6	100	30
		4	330	60					
100 2A	40	1	3.3	10	125 2Q	55	2	3.3	10
		2	4.7	10			3	4.7	10
		2	6.8	15			3	6.8	15
		3	10	20			3	10	25
		3	15	25			4	15	25
		4	22	35			5	22	30
		5	33	35			6	33	35
		6	47	33			7	47	30
		7	68	30					

175℃ HIGH TEMPERATURE TANTALUM CAPACITOR

CBGT

CHARACTERS AND USE

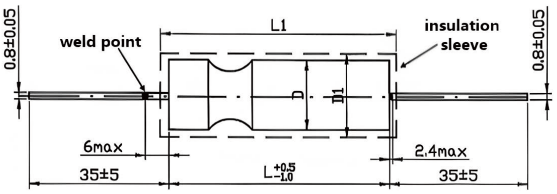
- Silver case, gas seal, Cylindrical, Axial leads, High temperature sleeve, Polar
- Good electric performance, High reliability, long life, Low DF and LC.
- High temperature performance, Can use at 175 ℃
- Suit for oil drilling deep well measurements and high temperatureelectronic devices DC or pulse circuit
- Implementation of standards: QJ/PWV223–2008
- Equative CA501 series

Technical Performance

- Operation temperature: −55℃~+175℃ (>155℃ use derated voltage)
- Capacitance Tolerance: ±10%; ±20%; −10%~+30%
- Dissipation Factor: 25℃, 100Hz (see table 1)
- Leakage Current: 25℃ $I_O \leqslant 0.002 C_R U_R$ (μA) or 2μA (whichever is greater)

  175℃ $I_O \leqslant 0.03 C_R U_R$ (μA) or 30μA (whichever is greater)





CASE SIZE AND MAXIMUM WEIGHT

TABLE1

Case code	Max Weight (g)	With Sleeve		Without Sleeve	
		D ± 0.5 (mm)	L ± 2 (mm)	D max (mm)	L max (mm)
1	4	5	14	5.8	16
2	5	6	16	6.8	18
3	7	8	16	8.8	18
4	10	8	22	8.8	24
5	14	10	22	10.8	24
6	17	10	25	10.8	27
7	20	10	30	10.8	32

RATED VOLTAGE,DERATED VOLTAGE, CAPACITANCE, CASE CODE AND DISSIPATION FACTOR

TABLE2

Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tg δ(%) 25℃	Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tgδ(%) 25℃
6.3 0J	3	1	22	45	40	20	1	4.8	15
		1	33	45			1	6.8	20
		1	47	45			1	10	20
		1	68	45			1	15	25
		2	100	50			1	22	30
		2	150	50			2	33	30
		3	220	70			2	47	35
		3	330	75			2	68	30
		4	470	95			3	100	45
		4	680	95			4	150	45
		5	1000	100			5	220	45
10 1A	5	1	15	40	50	25	1	3.3	10
		1	22	40			1	4.7	15
		1	33	40			1	6.8	15
		1	47	45			1	10	15
		1	68	45			2	15	15
		2	100	50			2	22	20
		2	150	60			2	33	25
		3	220	65			3	47	25
		3	330	80			4	68	35
		4	470	85			4	100	35
		4	680	85			5	150	30

PART NUMBER EXAMPLE:

CBGT 686 K 1A 4

- 4 — Case Code
- 1A — Voltage
- K — Tolerance M=20% K=10% J=5%
- 686 — Capacitance 105=1uF 106=10uF 107=100uF 108=1,000uF
- CBGT — Series

TABLE2

Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tg δ(%) 25℃	Rated Voltage U_R(V)	Derated Voltage U_C(V)	Case Code	Cap C_R(μF)	tgδ(%) 25℃
16 1C	8	1	10	30	63	32	1	3.3	10
		1	15	30			1	4.7	15
		1	22	35			1	6.8	15
		1	33	35			1	10	15
		1	47	40			2	15	15
		2	68	40			2	22	20
		2	100	45			3	33	25
		3	150	45			3	47	25
		3	220	70			4	68	35
		4	330	80			5	100	35
		4	470	85			6	150	30
25 1E	13	1	6.8	20	75	37	1	3.3	10
		1	10	20			1	4.7	10
		1	15	20			1	6.8	15
		1	22	25			2	10	20
		1	33	25			2	15	25
		2	47	30			3	22	35
		2	68	30			3	33	35
		2	100	40			4	47	33
		3	150	45			5	68	30
		4	220	60			6	120	30
		4	330	60					
100 2A	50	1	3.3	10	125	63	2	2.2	10
		2	4.7	10			2	3.3	10
		2	6.8	15			3	4.7	15
		3	10	20			3	6.8	25
		3	15	25			3	10	25
		4	22	35			4	15	30
		5	33	35			5	22	35
		6	47	33			6	33	30
		7	68	30			7	47	35

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155℃ HIGH TEMPERATURE TANTALUM CAPACITOR

CBGW

CHARACTERS AND USE

- Equative CA501S
- Silver case, gas seal, Cylindrical, Axial leads, High temperature sleeve, Polar
- Good electric performance, High reliability, long life, Low DF and LC.
- High temperature performance, Can use at 155 ℃
- Suit for oil drilling deep well measurements and high temperatureelectronic devices DC or pulse circuit
- Implementation of standards: QJ/PWV220–2008

Technical Performance

●Operation temperature：−55℃~+155℃

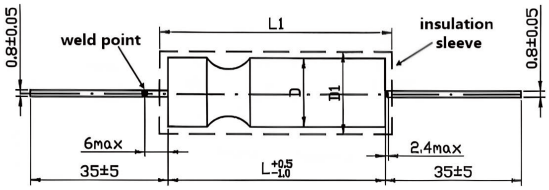
●Capacitance Tolerance：±10%；±20%；−10%~+30%

●Dissipation Factor：25℃，100Hz (see table 2)

●Leakage Current：25℃ $I_O \leqslant 0.002\ C_R U_R$（μA）or 2μA (whichever is greater)

155℃ $I_O \leqslant 0.02\ C_R U_R$（μA）or 20μA (whichever is greater)





PART NUMBER EXAMPLE:

CBGW157 K 0J 2

- 2 — Case Code
- 0J — Voltage
- K — Tolerance M=20% K=10% J=5%
- 157 — Capacitance 105=1uF 106=10uF 107=100uF 108=1,000uF
- CBGW — Series

CASE SIZE AND MAXIMUM WEIGHT

TABLE1

Case code	Max Weight (g)	With Sleeve		Without Sleeve	
		D ± 0.5 (mm)	L ± 2 (mm)	D1max (mm)	L max (mm)
1	4	5	14	5.8	16
2	5	6	16	6.8	18
3	7	8	16	8.8	18
4	10	8	22	8.8	24
5	14	10	22	10.8	24
6	17	10	25	10.8	27
7	20	10	30	10.8	32

RATED VOLTAGE,DERATED VOLTAGE, CAPACITANCE, CASE CODE AND DISSIPATION FACTOR

TABLE2

Rated Voltage U_R(V)	Case Code	Cap C_R(μF)	tg δ(%) 25℃	Rated Voltage U_R(V)	Case Code	Cap C_R(μF)	tgδ(%) 25℃
6.3 0J	1	22	45	40	1	4.8	15
	1	33	45		1	6.8	20
	1	47	45		1	10	20
	1	68	45		1	15	25
	2	100	50		1	22	30
	2	150	50		2	33	30
	3	220	70		2	47	35
	3	330	75		2	68	30
	4	470	95		3	100	45
	4	680	95		4	150	45
	5	1000	100		5	220	45
10 1A	1	15	40	50	1	3.3	15
	1	22	40		1	4.7	15
	1	33	40		1	6.8	15
	1	47	45		1	10	15
	1	68	45		2	15	20
	2	100	50		2	22	25
	2	150	60		2	33	25
	3	220	65		3	47	35
	3	330	80		4	68	35
	4	470	85		4	100	30
	4	680	85				

TABLE2

Rated Voltage U_R(V)	Case Code	Cap C_R(μF)	tg δ(%) 25℃	Rated Voltage U_R(V)	Case Code	Cap C_R(μF)	tgδ(%) 25℃
16 1C	1	10	30	63 1J	1	3.3	15
	1	15	30		1	4.7	15
	1	22	35		1	6.8	15
	1	33	35		1	10	15
	1	47	40		2	15	20
	2	68	40		2	22	25
	2	100	45		3	33	25
	3	150	45		3	47	35
	3	220	70		4	68	35
	4	330	80		5	100	30
	4	470	85				
25 1E	1	6.8	20	75 1M	1	3.3	10
	1	10	20		1	4.7	15
	1	15	20		1	6.8	20
	1	22	25		2	10	25
	1	33	25		2	15	35
	2	47	30		3	22	35
	2	68	30		3	33	33
	2	100	40		4	47	30
	3	150	45		5	68	30
	4	220	60				
	4	330	60				
100 2A	1	2.2	10	125 2Q	2	2.2	10
	1	3.3	10		2	3.3	10
	2	4.7	15		3	4.7	15
	2	6.8	20		3	6.8	25
	3	10	25		3	10	25
	3	15	35		4	15	30
	4	22	35		5	22	35
	5	33	33		6	33	30
	6	47	30		7	47	35
	7	68	30				

CBFD

(hermetic seal) equative CAK31 series

1,Brief Introduction and Feature



- CBFD, Metal case ,hermetic sealed,
  with insulation sleeve wet tantalum electrolytic capacitors.
- With polar, axial leads through hole, long life, good performances and stability.
- Cross part 109D, 138D, M39006/09/21/30/31
- Widely used in electronic equipment for communication equipment,
  aerospace,satellite,guided missile and aviation.

Meet standard: GJB733A-96,ZZR-Q/PWV20011-2009

2,General Characteristics

Operating Temperature Range: -55℃～+125℃(>85℃ with voltage derating);

Capacitance range: 1.7μF~1200μF

Capacitance Tolerance: J=±5%,K=±10% ,M=±20%

Voltage: 6V~125V

DF see Table 2

DCL see table 2

Case sizes, Dimensions and Max. weight: As shown in Table 1 and figure 1.

Nominal Capacitance, Rated voltage, Voltage Derating： See table 2

3,Drawing,Case Dimension and Max. weight

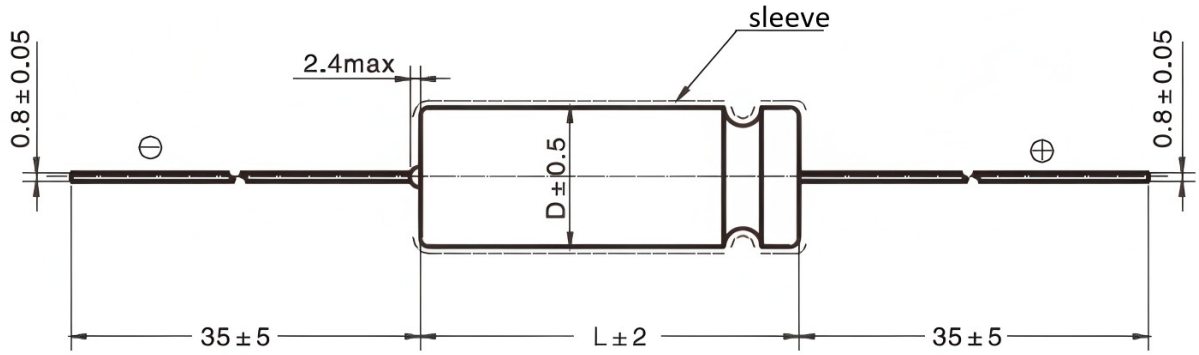


Table 1

Code	Max. weight（g）	Without sleeve		With sleeve	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	4	4.8	11.5	5.6	12.8
T2	7	7.2	16.3	7.9	17.1
T3	14	9.5	19.5	10.3	20.3
T4	19	9.5	27	10.3	27.8

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CBFD

(hermetic seal)

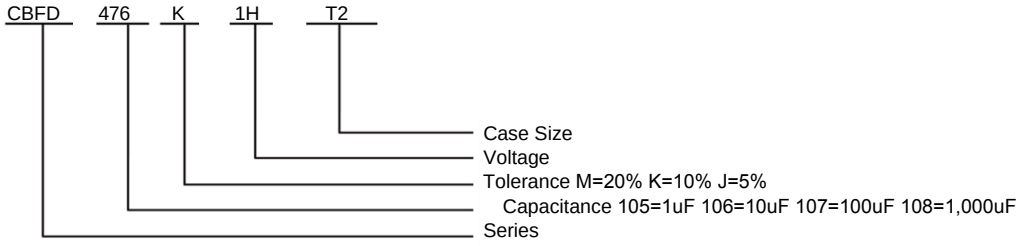
4,Table 2 General Characteristics

Rated Voltage (V)	Voltage Derating (V)	Case size	Cap. （μF）	DCL (μA)Max 25℃	DCL (μA)Max 85℃ 125℃	IMP（Ω） -55℃ 100Hz	Tgδ (%) 25℃ 85℃ 125℃	Rated Voltage (V)	Voltage Derating (V)	Case size	Cap. （μF）	DCL (μA)Max 25℃	DCL (μA)Max 85℃ 125℃	IMP（Ω） -55℃ 100Hz	Tgδ (%) 25℃ 85℃ 125℃
6 0I	4	T1	30	1	2	100	9.1	30	20	T4	300	8	32	25	35
		T1	68	1	2	60	20.4			T1	5	1	2	400	3.4
		T2	140	1	3	40	21.3			T1	10	1	2	250	6
		T2	270	1	6.5	25	81.8			T2	25	1	5	95	11.2
		T3	330	2	7.9	20	49.6	50 1H	30	T2	47	1	9	70	21.4
		T3	560	2	13	25	128			T3	60	2	12	45	13.6
		T4	1200	3	14	20	144			T3	82	2	16+	45	24.9
8 0K	5	T1	25	1	2	100	7.6			T4	160	8	32	27	25.7
		T1	56	1	2	59	17			T1	4	1	2	550	3
		T2	220	1	7	30	66.4			T1	8.2	1	2	275	5
		T3	430	2	14	25	91.5			T2	20	1	5	105	7.6
		T4	850	4	16	22	65.8	60 1O	40	T2	39	1	9	90	20.7
10 1A	7	T1	20	1	2	175	6.1			T3	50	2	12	50	15.3
		T1	47	1	2	100	18.1			T3	68	2	16	50	30.7
		T2	100	1	4	60	15.2			T4	140	8	32	28	25.7
		T2	180	1	7	40	54.4			T1	3.5	1	2	650	2.5
		T3	250	2	10	30	37.8			T1	6.8	1	2	300	4.1
		T3	390	2	16	25	87.6			T2	15	1	5	150	7.5
		T4	750	4	16	23	56.5	75 1M	50	T2	33	1	10	90	17.5
15 1R	10	T1	15	1	2	155	5.7			T3	40	2	12	60	15.2
		T1	33	1	2	90	12.5			T3	56	2	17	60	25.6
		T2	70	1	4	75	13.1			T4	110	9	36	29	25.7
		T2	120	1	7	50	36.8			T1	2.5	1	2	950	5
		T3	170	2	10	35	25.4			T1	4.7	1	2	500	3.6
		T3	270	2	16	30	60.9			T2	11	1	4	200	5
		T4	540	6	24	23	49	100 2A	65	T2	22	1	9	100	11.8
25 1E	15	T1	10	1	2	220	4.6			T3	30	2	12	80	9.1
		T1	22	1	2	140	8.3			T3	43	2	17	70	19.7
		T2	100	1	10	50	31.4			T4	86	9	36	30	20.7
		T3	180	2	18	32	54.3			T1	1.7	1	2	1250	7
		T4	350	7	28	24	35			T1	3.6	1	2	600	4.1
30 1U	20	T1	8	1	2	275	4.5			T2	9	1	5	240	10.2
		T1	15	1	2	175	9.1	125 2Q	85	T2	14	1	7	167	12.7
		T2	40	1	5	65	12.2			T3	18	2	9	129	15
		T2	68	1	8	60	31			T3	25	2	13	93	19
		T3	100	2	12	40	19			T4	56	10	40	32	17.5
		T3	150	2	18	35	46								

CBFD

(hermetic seal)

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，U=2.20-1.0V，U =1.00-0.5V(effective value), measure method is by series equivalent circuit.

3、Measure leakage current above 125℃,please use derated voltage. DLC read within 5 minute.

4、Special size and big capacitance products, please negotiate with us

CBFB

All tantalum case, high reliability, hermetic seal，
equative alternative EVANS HC4、Vishay STE



1,Brief Introduction and Feature

1） CBFB, All tantalum case ,hermetic sealed,
with insulation sleeve wet tantalum electrolytic capacitors.

2） With polar, axial leads through hole, in stable and excellent performances.

3） High reliability.long life,high ripple current,low ESR and low DCL.

4） Widely used in electronic equipment for military applications such as telecommunication, aerospace and aviation.

Meet standard: GJB733A-96,QJ/PWV319-2010

2,General Characteristics

Operating Temperature Range: -55℃～+125℃(>125℃ with voltage derating);

Capacitance range: 10μF~2200μF

Capacitance Tolerance: K=±10% ,M=±20%

Voltage: 15V~125V

Reverse voltage capability: 1.5V

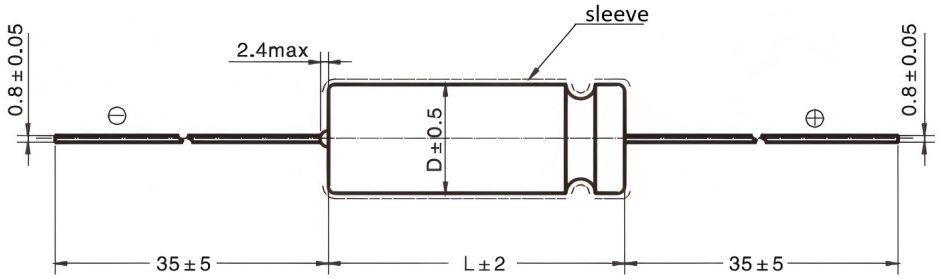
Impedance at -55℃ : please see Table 2

DCL see table 2

Case sizes, Dimensions and Max. weight: As shown in Table 1 and figure 1.

Nominal Capacitance, Rated voltage, Voltage Derating：See table 2

3,Drawing ， Case Dimension and Max. weight



Outline and Dimensions

Table 1

Code	Max. weight（g）	Without sleeve		With sleeve	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	3	4.78	11.51	5.58	14.31
T2	7	7.14	16.28	7.94	19.08
T3	12	9.52	19.46	10.32	22.26
T4	18	9.52	26.97	10.32	29.77

CBFB

All tantalum case, high reliability, hermetic seal

4, General Characteristics

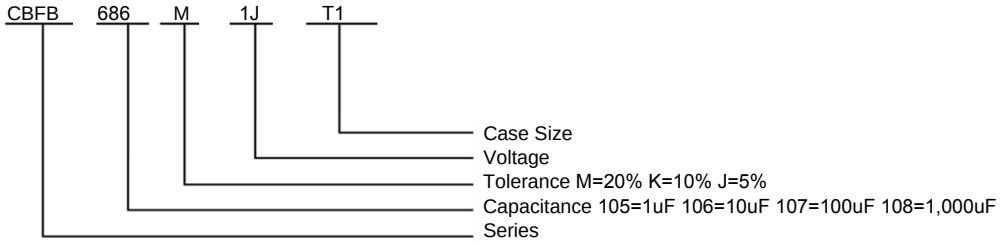
Table 2

Rated Voltage (V)	Voltage Derating (V)	Case size	Capacitance （μF）	DCL (μA)Max		IMP（Ω） -55℃ 100Hz	Capacitance change Max (%)			ESR （Ω） 100Hz 25℃	AC ripple 85℃ 40kHz (mA)
				25℃	85℃ 125℃		25 ℃	85 ℃	125 ℃		
15 1R	10	T1	150	2	12	30	-55	+30	+40	1.4	1400
		T2	680	6	36	13	-70	+30	+50	1.1	2200
		T3	1500	12	70	12	-80	+40	+60	0.9	2700
		T4	2200	20	120	7	-85	+40	+60	0.7	3400
25 1E	15	T1	120	1	5	25	-42	+16	+24	1.3	1250
		T2	560	2	10	12	-65	+24	+30	1.0	2100
		T3	1200	5	20	7	-70	+24	+36	0.8	2600
		T4	1800	6	25	7	-72	+24	+40	0.5	3100
30 1U	20	T1	100	1	5	30	-38	+16	+24	1.6	1200
		T2	470	2	10	18	-65	+20	+36	1.1	1800
		T3	100	7	25	12	-70	+20	+36	1.0	2500
		T4	1500	12	35	8	-72	+20	+40	0.9	3000
50 1H	30	T1	68	1	5	35	-25	+12	+30	1.8	1050
		T2	220	2	10	18	-50	+12	+30	1.2	1800
		T3	470	3	25	14	-45	+12	+30	1.1	2100
		T4	680	5	40	9	-58	+20	+40	1.0	2750
60 1I	40	T1	47	1	5	45	-25	+10	+24	2.3	1050
		T2	150	2	10	21	-40	+10	+24	1.4	1800
		T3	390	3	25	15	-45	+10	+26	1.2	2100
		T4	560	5	40	11	-58	+10	+24	1.1	2750
75 1M	50	T1	33	1	5	55	-25	+9	+18	2.8	1050
		T2	110	2	10	35	-35	+10	+20	1.6	1650
		T3	330	3	30	21	-45	+10	+20	1.3	2100
		T4	470	5	50	13	-50	+10	+20	1.2	2750
100 2A	65	T1	15	1	5	120	-18	+3	+10	4.0	1050
		T2	68	2	10	40	-30	+4	+12	2.4	1650
		T3	150	3	25	28	-35	+6	+12	1.9	2100
		T4	220	5	50	21	-40	+6	+12	1.5	2750
125 2Q	85	T1	10	1	5	180	-15	+3	+10	6.0	1050
		T2	47	2	10	55	-25	+5	+12	2.8	1650
		T3	100	3	25	55	-35	+5	+12	2.1	2100
		T4	150	5	50	21	-35	+6	+12	1.9	2750

CBFB

All tantalum case, high reliability, hermetic seal

PART NUMBER EXAMPLE



Notes：

1, Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2, Capacitance, DF measure frequency: 100Hz,DC offset voltage $U_{-}=2.2^{0}_{-1.0}V$, Exchange offset voltage $U_{\sim}=1.0^{0}_{-0.5}V$(effective value), measure method is by series equivalent circuit.

3, Measure the leakage current above 125℃,please use derated voltage. DLC read within 5 minute.

4, Special size and big capacitance products, please negotiate with us

CBFA

Tantalum case with glass-to-tantalum hermetic seal,
high reliability， equative CAK38 series



Datasheet

Brief Introduction and Feature

- CBFA, Tantalum case ,hermetic seal, with insulation sleeve wet tantalum electrolytic capacitors.
- With polar, axial leads through hole, in stable and excellent performances.
- High reliability.long life,high ripple current,low ESR and low DC leakage current (DCL)..
- Widely used in electronic equipment for military applications such as telecommunication, aerospace and aviation.

Meet standard: GJB733A-96,QJ/PWV91-2000

Cross: MIL-PRF-39006/22　CLR79

◆ General Characteristics

Operating Temperature Range: -55℃～+125℃(at 125℃ with voltage derating);

Capacitance range: 1.7μF~1200μF

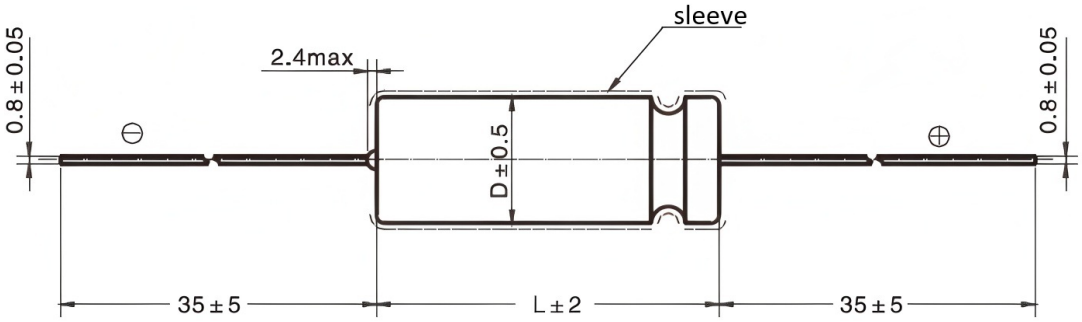
Ripple current: 415mA~2360mA

Capacitance Tolerance: K=±10% ,M=±20%

Voltage: 6V~125V

Reverse voltage capability: 3V

◆ Drawing,Case Dimension and Max. Weight



Code	Max. weight（g）	Without sleeve		With sleeve max.	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	3	4.78	11.51	5.18	13.12
T2	7	7.14	16.28	7.54	17.88
T3	12	9.52	19.46	10.00	21.06
T4	18	9.52	26.97	10.00	28.57

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CBFA

Tantalum case with glass-to-tantalum hermetic seal, high reliability

◆ Electric Performance Characteristics of CBFA series.

Rated Voltage (V)	Voltage Derating (V)	Case size	Capacitance （μF）	DCL (μA)Max.		IMP.（Ω） -55℃ 100Hz	AC ripple 85℃ 40kHz (mA)	tgδ(%) 25℃ 100Hz
				25℃	85℃ 125℃			
6 0I	4	T1	30	1	2	100	820	9
		T1	68	1	2	60	960	15
		T2	140	1	3	40	1200	21
		T2	270	1	6.5	25	1375	45
		T3	330	2	7.9	20	1800	36
		T3	560	2	13	25	1900	55
		T4	1200	3	14	20	2265	90
8 0K	5	T1	25	1	2	100	820	7.5
		T1	56	1	2	59	900	14
		T2	120	1	2	50	1220	20
		T2	220	1	7	30	1370	37
		T3	290	2	6	25	1770	34
		T3	430	2	14	25	1825	46
		T4	850	4	16	22	2330	60
10 1A	7	T1	20	1	2	175	820	6
		T1	47	1	2	100	855	13
		T2	100	1	4	60	1200	15
		T2	180	1	7	40	1365	30
		T3	250	2	10	30	1720	30
		T3	390	2	16	25	1800	44
		T4	750	4	16	23	2360	50
15 1R	10	T1	15	1	2	155	780	5
		T1	33	1	2	90	820	10
		T2	70	1	4	75	1150	13
		T2	120	1	7	50	1450	18
		T3	170	2	10	35	1480	25
		T3	270	2	16	30	1740	32
		T4	540	6	24	23	2330	40
25 1E	15	T1	10	1	2	220	715	4
		T1	22	1	2	140	825	6.6
		T2	50	1	2	70	1130	11
		T2	100	1	10	50	1435	15
		T3	120	2	16	38	1450	21
		T3	180	2	18	32	1525	26
		T4	350	7	28	24	1970	35

CBFA

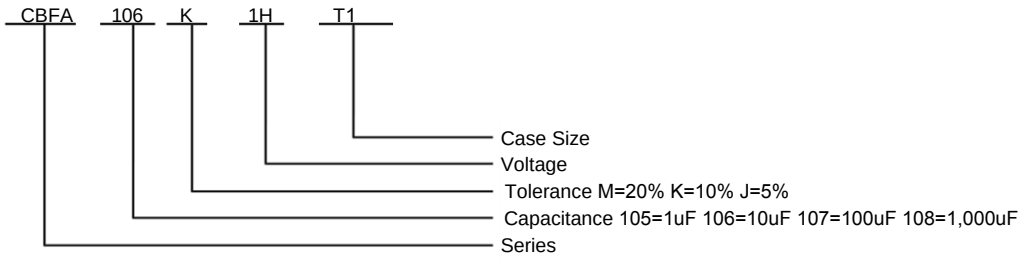
Tantalum case with glass-to-tantalum hermetic seal, high reliability

Rated Voltage (V)	Voltage Derating (V)	Case size	Capacitance （μF）	DCL(μA)Max.		IMP.（Ω） -55℃ 100Hz	AC ripple 85℃ 40kHz (mA)	tgδ(%) 100Hz
				25℃	85℃ 125℃			
30 1U	20	T1	8	1	2	275	640	4
		T1	150	1	2	175	780	5
		T2	40	1	5	65	1120	10
		T2	68	1	8	60	1285	13
		T3	100	2	12	40	1450	17
		T3	150	2	18	35	1525	23
		T4	300	8	32	25	1950	31
50 1H	30	T1	5	1	2	400	580	3
		T1	10	1	2	250	715	4
		T2	25	1	5	95	1005	8
		T2	47	1	9	70	1155	11
		T3	60	2	12	45	1335	12
		T3	82	2	16	45	1400	15
		T4	160	8	32	27	1900	17
60 1I	40	T1	4	1	2	550	525	2.8
		T1	8.2	1	2	275	625	4
		T2	20	1	5	105	930	7
		T2	39	1	9	90	1110	10
		T3	50	2	12	50	1300	10
		T3	68	2	16	50	1365	13
		T4	140	8	32	28	1850	16
75 1M	50	T1	3.5	1	2	650	525	2.5
		T1	6.8	1	2	300	610	3.5
		T2	15	1	5	150	890	6
		T2	33	1	10	90	1000	10
		T3	40	2	12	60	1250	9
		T3	56	2	17	60	1335	11
		T4	110	9	36	29	1850	12
100 2A	65	T1	2.5	1	2	950	505	2
		T1	4.7	1	2	500	565	3
		T2	11	1	4	200	835	5
		T2	22	1	9	100	965	7.5
		T3	30	2	12	80	1240	7
		T3	43	2	17	70	1335	8.5
		T4	86	9	36	30	1800	10
125 2Q	85	T1	1.7	1	2	1250	415	2
		T1	3.6	1	2	600	520	2.7
		T2	9	1	5	240	755	5
		T2	14	1	7	167	860	6
		T3	18	2	9	129	1130	5
		T3	25	2	13	93	1200	6
		T4	56	10	40	32	1800	6.5

CBFA

Tantalum case with glass-to-tantalum hermetic seal, high reliability

◆ PART NUMBER EXAMPLE



Notes：

- Tantalum capacitors can't been measured by multimeter.(Easily cause irreversible damage and lead to reject when reversed polarity)
- Capacitance, DF measure frequency: 100Hz,DC offset voltage U_{-}=$2.2^{0}_{-1.0}$V,Exchange offset voltage $U_{\sim}$=$1.0^{0}_{-0.5}$V(effective value),
- measure method is by series equivalent circuit.
- Measure the leakage current at 125℃,please use derated voltage. DCL read at 5 minute.
- Special size and big capacitance products, please negotiate with JINPEI.

CBFC

Tantalum case with glass-to-tantalum hermetic seal,
high reliability,equative CAK39 series

Datasheet



Brief Introduction and Feature

- CBFC, Tantalum case ,hermetic seal, with insulation sleeve wet tantalum electrolytic capacitors.
- With polar, axial leads through hole, in stable and excellent performances.
- High reliability.long life,high ripple current,low ESR and low DC leakage current (DCL)..
- Widely used in electronic equipment for military applications such as telecommunication, aerospace and aviation.

Meet standard: GJB733A-96,QJ/PWV319-2002

Cross: MIL-PRF-39006/25 CLR81

◆ General Characteristics

Operating Temperature Range: -55℃～+125℃(>125℃ with voltage derating);

Capacitance range: 6.8μF~2200μF

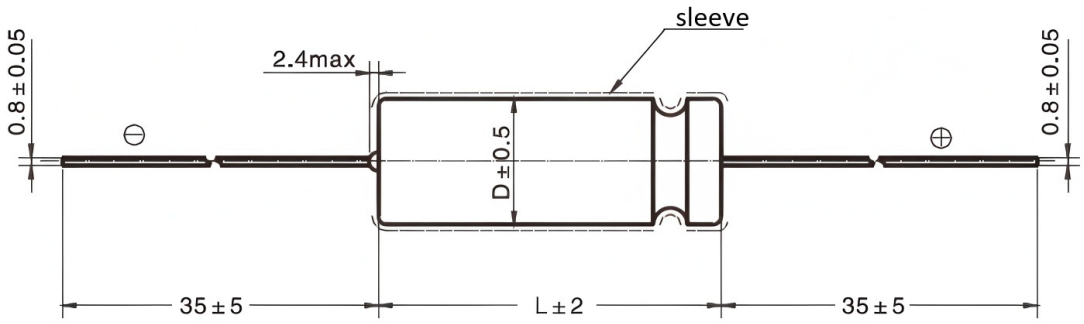
Ripple current: 700mA~2300mA

Capacitance Tolerance: K=±10% ,M=±20%

Voltage: 6V~125V

Reverse voltage capability: 3V

◆ Drawing,Case Dimension and Max. Weight



Code	Max. weight（g）	Without sleeve		With sleeve	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	3	4.78	11.51	5.58	14.31
T2	7	7.14	16.28	7.94	19.08
T3	12	9.52	19.46	10.32	22.26
T4	18	9.52	26.97	10.32	29.77

CBFC Military

(Tantalum case with glass-to-tantalum hermetic seal, high reliability)

◆ Electric Performance Characteristics of CAK39 series.

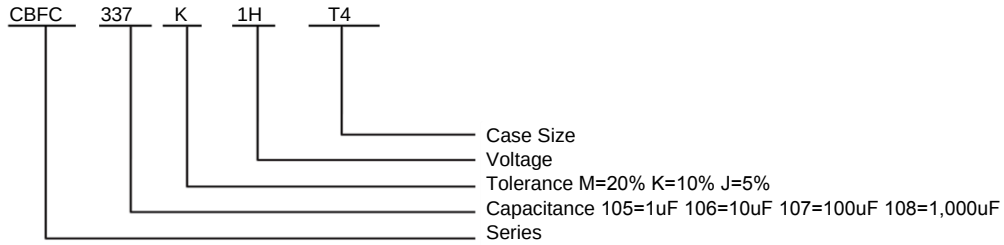
Rated Voltage (V)	Voltage Derating (V)	Case size	Capacitance （μF）	DCL (μA)Max.		IMP.（Ω） -55℃ 100Hz	AC ripple 85℃ 40kHz (mA)	tgδ(%) 25℃ 100Hz
				25℃	85℃ 125℃			
6 0I	4	T1	220	2	9	36	1000	50
		T2	820	3	14	18	1500	155
		T3	1500	5	20	18	1900	172
		T4	2200	6	24	13	2300	170
8 0K	5	T1	180	2	9	45	1000	41
		T2	680	3	14	22	1500	130
		T3	1500	5	20	18	1900	170
		T4	1800	7	25	14	2300	138
10 1A	7	T1	150	2	9	54	900	34
		T2	560	3	16	27	1450	106
		T3	1200	5	20	18	1850	137
		T4	1500	7	25	15	2300	114
15 1R	10	T1	100	2	9	72	900	30
		T2	390	3	16	31	1450	74
		T3	820	6	24	22	1800	111
		T4	1000	8	32	17	2300	92
25 1E	15	T1	68	2	9	90	850	22
		T2	270	3	16	33	1400	55
		T3	560	7	20	24	1750	76
		T4	680	8	32	19	2100	63
30 1U	20	T1	56	2	9	100	800	22
		T2	220	3	16	36	1200	42
		T3	470	8	32	25	1500	64
		T4	560	9	36	20	2000	55
50 1H	30	T1	33	2	9	135	700	12.3
		T2	120	4	24	49	1200	22.5
		T3	270	8	32	29	1450	37
		T4	330	9	36	22	1900	38
60 1I	40	T1	27	3	12	144	700	10.2
		T2	100	4	20	54	1100	19
		T3	220	8	32	29	1400	30
		T4	270	9	36	23	1850	27
75 1M	50	T1	22	3	12	157	600	8.5
		T2	82	4	24	63	1000	15.2
		T3	180	9	36	30	1380	24.4
		T4	220	10	40	24	1800	37

CBFC

(Tantalum case with glass-to-tantalum hermetic seal, high reliability)

Rated Voltage (V)	Voltage Derating (V)	Case size	Capacitance (μF)	DCL (μA)Max		IMP.（Ω） -55℃ 100Hz	AC ripple 85℃ 40kHz (mA)	tgδ(%) 100Hz
				25℃	85℃ 125℃			
100 2A	65	T1	10	3	12	200	800	4.5
		T2	39	5	24	80	1300	10.4
		T3	68	10	40	40	1600	11.3
		T4	120	12	48	30	200	25
125 2Q	85	T1	6.8	3	12	300	700	6
		T2	27	5	24	90	1200	7.2
		T3	47	10	40	50	1500	7.9
		T4	82	12	48	32	1900	17.4

PART NUMBER EXAMPLE



Notes：

- Tantalum capacitors can't been measured by multimeter.(Easily cause irreversible damage and lead to reject when reversed polarity)
- Capacitance, DF measure frequency: 100Hz,DC offset voltage U_{-}=$2.2^{0}_{-1.0}$V,Exchange offset voltage $U_{\sim}$=$1.0^{0}_{-0.5}$V(effective value), measure method is by series equivalent circuit.
- Measure the leakage current at 125℃,please use derated voltage. DCL read at 5 minute.
- Special size and big capacitance products, please negotiate with JINPEI.

CBDB glass-sealed. equative CA30M series



1,Brief Introduction

CBDB Series is half-sealed tubular wet tantalum electrolytic capacitors With polar axial leads are characterized in small size, low DC Leakage, stable and excellent performances, high reliability and long life. CBDB Series meets the requirements of Chinese Electronic industry standard SJ/T10030-91, widely used in electronic equipment for military and civil applications such as telecommunication, aerospace and aviation.

2,General Characteristics

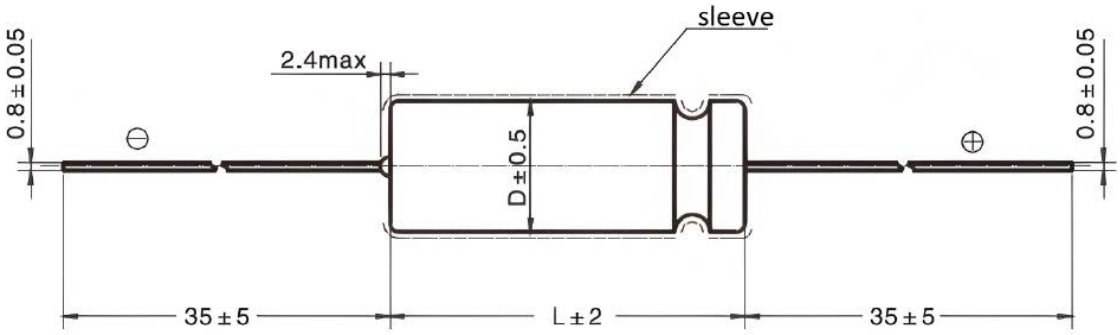
Operating Temperature Range: -55℃～+125℃(>85℃,use derated voltage)

Capacitance Tolerance:M=±20%,K=±10%

DC Leakage: at +20℃, I0≤0.001CRUR or 1μA(Which is greater);

At +85℃ and +125℃, I0≤0.008CRUR or 8μA(Which is greater)

3,Drawing ， Case Dimension and Max. weight:



Outline and Dimensions

Table 1

Code	Max. weight（g）	D±0.5（mm）	L±2 (mm)
0	3	5	10
1	4	5	14
2	5	6	16
3	7	8	16
4	10	8	22
5	14	10	22
6	17	10	25
7	20	10	30
8	23	10	33

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4, **General Characteristics table 2**

Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100HZ
6.3 0J	4	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		0	15	10	200
		0	22	10	180
		0	33	12	125
		0	47	15	125
		0	68	18	125
		0	100	20	100
		1	150	30	80
		1	220	40	70
		2	330	40	60
		2	470	50	50
		3	680	50	35
		3	1000	60	25
		4	1200	60	25
		4	1500	60	20
		5	2200	70	20
		6	3300	80	15
10 1A	6.3	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	250
		0	15	10	200
		0	22	10	175
		0	33	12	125
		0	47	15	100
		0	68	18	80
		0	100	20	60
		1	150	30	55
		2	220	40	45
		2	330	45	40

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Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100HZ
10 1A	6.3	3	470	50	35
		3	680	50	30
		4	1000	50	25
		4	1200	60	25
		5	1500	60	20
		6	2200	70	20
16(15) 1C (1R)	10	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		0	15	10	180
		0	22	10	150
		0	33	12	110
		0	47	12	90
		0	68	18	80
		1	100	20	70
		2	150	30	60
		2	220	40	55
		3	330	40	45
		4	470	40	40
		5	680	45	35
		6	1000	50	30
		6	1200	50	25
		7	1500	60	20
25 1E	16	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	300
		0	10	8	260
		0	15	10	175
		0	22	10	150
		0	33	12	110
		0	47	12	80
		1	100	20	70
		2	68	20	75

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Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100HZ
25 1E	16	3	150	25	60
		3	220	30	55
		4	330	30	45
		5	470	40	40
		6	680	40	35
		7	1000	40	30
		7	1200	50	25
		8	1500	60	20
40 1G	25	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	450
		0	6.8	8	350
		0	10	8	260
		0	15	10	175
		0	22	12	140
		1	33	12	110
		2	47	15	80
		2	68	15	75
		2	100	20	65
		3	150	20	50
		4	220	25	45
		5	330	25	35
		5	470	30	35
		6	560	40	35
		6	680	40	30
		7	1000	45	30
		8	1200	50	25
50 1H	30	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		0	15	10	175
		1	22	12	150
		2	33	12	110
		2	47	15	80

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Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100HZ
50 1H	30	3	68	15	75
		3	100	20	65
		4	150	20	50
		4	220	25	45
		5	330	25	45
		6	470	35	35
		7	680	40	30
		8	1000	50	30
63 1J	40	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		1	15	10	175
		2	22	12	140
		2	33	12	100
		2	47	15	80
		3	68	15	65
		3	100	20	60
		4	150	20	50
		5	220	25	45
		6	330	25	35
		7	470	40	30
75 (70) 1M(1L)	50	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		1	6.8	8	350
		1	10	8	260
		2	15	10	175
		2	22	12	150
		3	33	12	110
		3	47	15	80
		4	68	15	70
		4	100	20	60

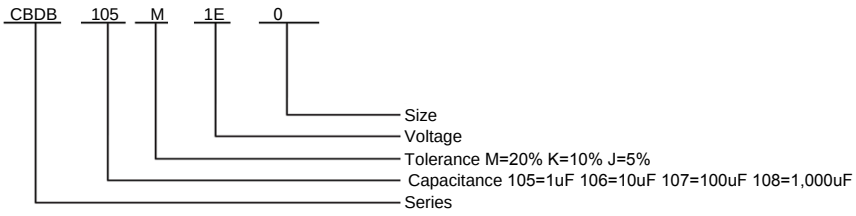
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Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100HZ
	50	5	150	20	50
		6	220	25	45
		7	330	25	35
100 (90) 2A (1S)	63	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		1	6.8	8	350
		1	10	10	260
		2	15	10	175
		2	22	15	150
		3	33	15	100
		3	47	15	70
		4	68	20	65
		5	100	20	60
		6	150	20	50
		7	220	6	40
125 1Q	75	0	0.47	6	4500
		0	0.68	6	3000
		0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		1	4.7	8	500
		1	6.8	10	350
		2	10	10	260
		2	15	15	175
		3	22	15	150
		3	33	15	120
		4	47	15	90
		5	68	15	70
		6	100	15	50
		7	150	20	45

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PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，U-=2.20 -1.0V，U~=1.00 -0.5V(effective value.

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

AXIAL WET TANTALUM CAPACITOR

CBDA

Products Name: CBDA Axial Leads Wet Electrolytic Tantalum Capacitor
Model: CBDA Equative CA30 series
Value: 1uF~3300uF
Votage:6.3V-125V
Size(mm):

1,Brief Introduction

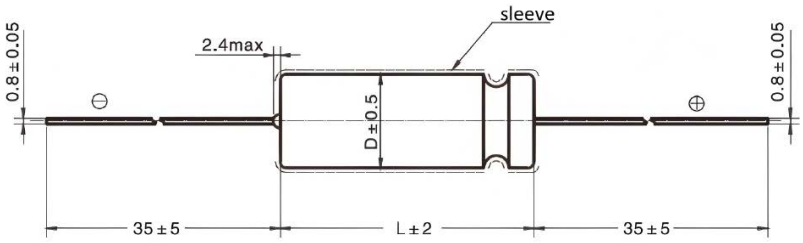
CBDA Series half-sealed tubular wet tantalum electrolytic capacitors
With polar axial leads are characterized in small size, low DC Leakage,
stable and excellent performances, high reliability and long life. CBDA
Series meets the requirements of Chinese Electronic industry standard SJ/T10030-91,
widely used in electronic equipment for military and civil applications such as telecommunication,
aerospace and aviation.



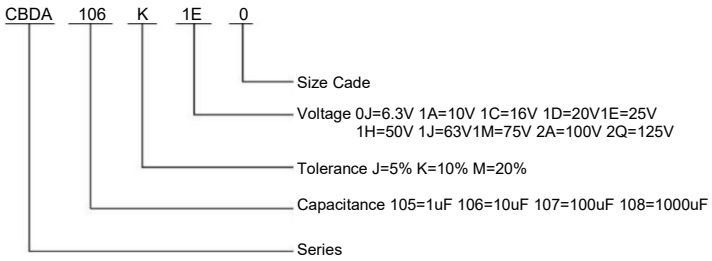
2,General Characteristics

Operating Temperature Range: -55℃~+125℃(>85℃ with rated voltage derating)
Capacitance range: 1uF~3300uF
Capacitance Tolerance: ±20%，±10%
Voltage: 6.3V~125V
DC Leakage: at +20℃, 10≤0.001$C_R V_R$ or 1 μ A(Whichever is greater);
at+85℃ and +125℃，10≤0.0080 $C_R V_R$ or 8μ A(Whichever is greater)

3,Drawing, Case Dimension and Max. Weight



4, PART NUMBER EXAMPLE



Outline and Dimensions

Code	Max.weight(g)	D±0.5(mm)	L±2(mm)
0	3	5	10
1	4	5	14
2	5	6	16
3	7	8	16
4	10	8	22
5	14	10	22
6	17	10	25
7	20	10	30
8	23	10	33

5, Nominal Capacitance, Rated voltage, Voltage Derating, Case size and General Characteristics

Rated Voltage	Voltage Derating	Case size	Capacitance (μF)	DF(%)Max 25℃,85℃,125℃	Impedance(Ω) -55℃ 100HZ
6.3	4	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		0	15	10	200
		0	22	10	180

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AXIAL LEADS WET TANTALUM CAPACITOR

Rated Voltage	Voltage Derating	Case size	Capacitance (μF)	DF(%)Max 25℃,85℃,125℃	Impedance(Ω) -55℃ 100HZ
6.3	4	0	33	12	125
		0	47	15	125
		0	68	18	125
		0	100	20	100
		0	150	30	80
		1	220	40	70
		1	330	40	60
		2	470	50	50
		2	680	50	35
		3	1000	60	25
		4	1200	60	25
		4	1500	60	20
		5	2200	70	20
		6	3300	80	15
10	6.3	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	250
		0	15	10	200
		0	22	10	175
		0	33	12	125
		0	47	15	100
		0	68	18	80
		0	100	20	60
		1	150	30	55
		2	220	40	45
		2	330	45	50
		3	470	50	35
		3	680	50	30
		4	1000	50	25
		4	1200	60	25
		5	1500	60	20
		6	2200	70	20
16(15)	10	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		0	15	10	180
		0	22	10	150
		0	33	12	110
		0	47	12	90
		0	68	18	80
		1	100	20	72
		2	150	30	60
		2	220	40	55
		3	300	40	45
		4	470	40	40
		5	680	45	35
		6	1000	50	30
		6	1200	50	25
		7	1500	60	20

AXIAL LEADS WET TANTALUM CAPACITOR

Rated Voltage	Voltage Derating	Case size	Capacitance (μF)	DF(%)Max 25℃,85℃,125℃	Impedance(Ω) -55℃ 100HZ
25	16	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	300
		0	10	8	260
		0	15	10	175
		0	22	10	150
		0	33	12	110
		0	47	12	80
		1	68	20	75
		2	100	20	70
		3	150	25	60
		3	220	30	55
		4	330	30	45
		5	470	40	40
		6	680	40	35
		7	1000	40	30
		7	1200	50	25
		8	1500	60	20
40	25	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	450
		0	6.8	8	350
		0	10	8	260
		0	15	10	175
		0	22	12	140
		1	33	12	110
		2	47	15	80
		2	68	15	75
		2	100	20	65
		3	150	20	50
		4	220	25	45
		5	330	25	35
		5	350	25	35
		5	470	30	35
		6	680	40	30
		7	1000	45	30
		8	1200	50	25
50	30	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		0	6.8	8	350
		0	10	8	260
		0	15	10	175
		1	22	12	150
		2	33	12	110
		2	47	15	80
		3	68	15	75
		3	100	20	65
		4	150	20	50
		4	220	25	45
		5	330	25	45
		6	470	35	35
		7	680	40	30
		8	1000	50	30

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AXIAL LEADS WET TANTALUM CAPACITOR

Rated Voltage	Voltage Derating	Case size	Capacitance (μF)	DF(%)Max 25℃,85℃,125℃	Impedance(Ω) -55℃ 100HZ
63	40	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.4	6	500
		0	6.8	8	350
		0	10	8	260
		1	15	10	175
		2	22	12	140
		2	33	12	100
		2	47	15	80
		3	68	15	65
		3	100	20	60
		4	150	20	50
		5	220	25	45
		6	330	25	35
		7	470	40	30
75(70)	50	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		1	6.8	8	350
		1	10	8	260
		2	15	10	175
		2	22	12	150
		3	33	12	110
		3	47	15	80
		4	68	15	70
		4	100	20	60
		5	150	20	50
		6	220	25	45
		7	330	25	35
100(90)	63	0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		0	4.7	6	500
		1	6.8	8	350
		1	10	8	260
		2	15	10	175
		2	22	10	150
		3	33	15	100
		3	47	15	70
		4	68	15	65
		5	100	20	60
		6	150	20	50
		7	220	20	40
125	75	0	0.47	6	4500
		0	0.68	6	3000
		0	1.0	6	1800
		0	1.5	6	1400
		0	2.2	6	1100
		0	3.3	6	700
		1	4.7	6	500
		1	6.8	8	350
		2	10	10	260
		2	15	10	175
		3	22	15	150
		3	33	15	120
		4	47	15	90
		5	68	15	70
		6	100	15	50
		7	150	20	45

CBDAA Hermetic sealed

1,Brief Introduction

CBDAA （equative CA301 series)wet electrolyte tantalum capacitors
With polar axial leads are characterized in small size, low DC Leakage,
Silver case,stable and excellent performances, high reliability and long life.
Series meets the requirements of Chinese Electronic industry standard QZJ840628, QJ/PWV77-2003,
widely used in electronic equipment for military and civil applications
such as telecommunication, aerospace and aviation.



2, Technical Characteristics

Operating Temperature Range: -55℃～+125℃(>85℃ use derated voltage)
Capacitance Tolerance: M=±20%,K=±10%
DC Leakage: at +25℃, I ≤0.0008CR UR 1uA(Whichever is greater);
at +85℃ I≤ 8 I_0 or 8μA(Whichever is greater)
At +125℃, I≤ 8 I_0 or 8μA(Whichever is greater)
Dissipation factor (tgδ) at 25℃ please see table 2

3, Outline and dimensions:

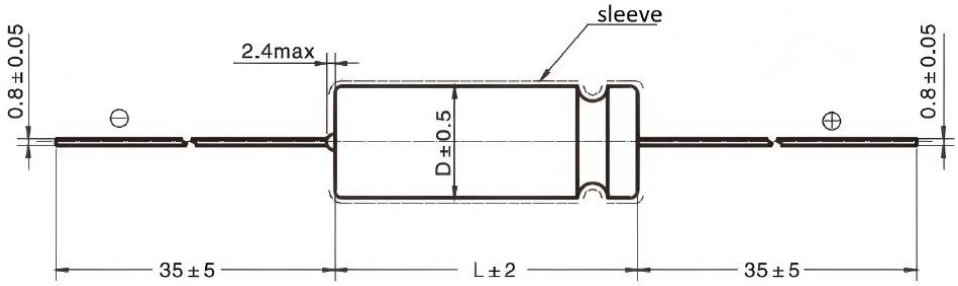


Table 1 case code and dimension:

Case Code	Max. weight（g）	Uninsulated		With insulated sleeve	
		D（mm）	L (mm)	D（mm）	L (mm)
0	3	5	10	5.8	12
1	4	5	14	5.8	16
2	5	6	16	6.8	18
3	7	8	16	8.8	18
4	10	8	22	8.8	24
5	14	10	22	10.8	24
6	17	10	25	10.8	27
7	20	10	30	10.8	32
8	25	12	30	12.8	32
9	30	12	36	12.8	38
10	35	14	36	14.8	38
11	55	14	48	14.8	50
12	65	16	48	16.8	50
13	80	19	58	19.8	60

CBDAA

Table 2 Dissipation factor at 25℃

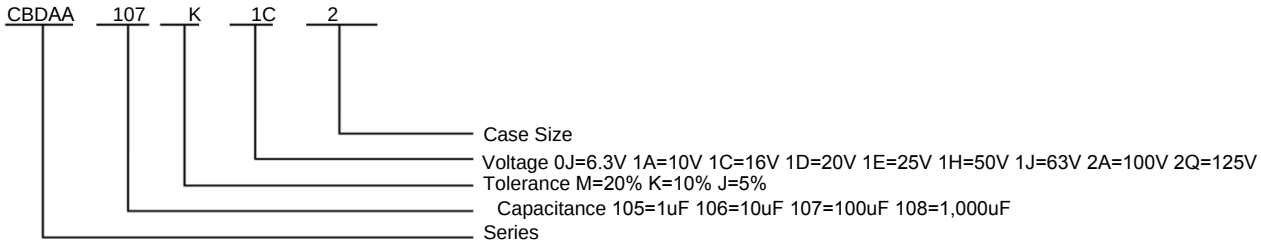
Dissipation Factor (%) / Capacitance (uF) / Rated Voltage(V)	1-4.7	6.8	10	15	22	33	47	68	100	150	220	330	470	680	1000	1500	≥2200
6.3					15	20	25	30	35	40	70	50	85	80	90		
10				10	15	15	15	30	20	50	45	70	75	65	80	90	110
16			10	10	10	12	20	20	35	35	60	70	50	70	90	90	110
25		8	8	10	10	20	15	30	25	50	50	40	50	80	80	80	100
40	6	8	8	10	20	12	25	20	35	35	30	40	45	80	80	80	100
63	6	8	8	10	18	12	25	25	20	28	40	40	45	80	80	80	100
100	6	8	10	18	15	25	28	20	25	40	45	45	45				
125	6	8	15	15	20	23	20	23	30	40	45	45	45				

Table 3 Rated voltage,derated voltage,dimensions and nominal capacitance.

Rated Voltage(V)		6.3	10	16	25	40	63	100	125
Derated Voltage(V)		4	6.3	10	16	25	40	63	75
Case Code	Max. Weight (g)	Nominal Capacitance(μF)							
0	3	15,22,33, 47,68	10,15,22 ,33,47	6.8,10,15, 22,33	4.7,6.8,10, 15,22	4.7,6.8, 10,15	2.2,3.3 4.7,6.8	1.5,2.2, 3.3,4.7	1.0,1.5, 2.2,3.3
1	4	100,150	68,100	47,68	33,47	22,33	10,15	6.8,10	4.7,6.8
2	5	220,330	150,220	100,150	68,100	47,68	22,33	15,22	10,15
3	7	470,680	330,470	220,330	150,220	100,150	47,68	33,47	22,33
4	10	1000	680	470	330	220	100,150	68	47
5	14	1500	1000	680	470	330	220	100	68
6	17	2200	1500	1000	680	470	330	150	100
7	20		2200	1500	1000	680	470	220	
8	25		3300	2200	1500	1000	680		150
9	30					1200		330	220
10	35			3300	2200	1500	1000	470	330
11	55			4700	3300	2200	1500	680	
12	65				4700	3300	2200	1000	
13	80					4700	3300		

CBDAA

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，U_{-}=2.2 $^{0}_{-1.0}$V，$U_{\sim}$=1.0 $^{0}_{-0.5}$V(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

CBDC

Hermetic Sealed，Equative CA35 series

1,Brief Introduction

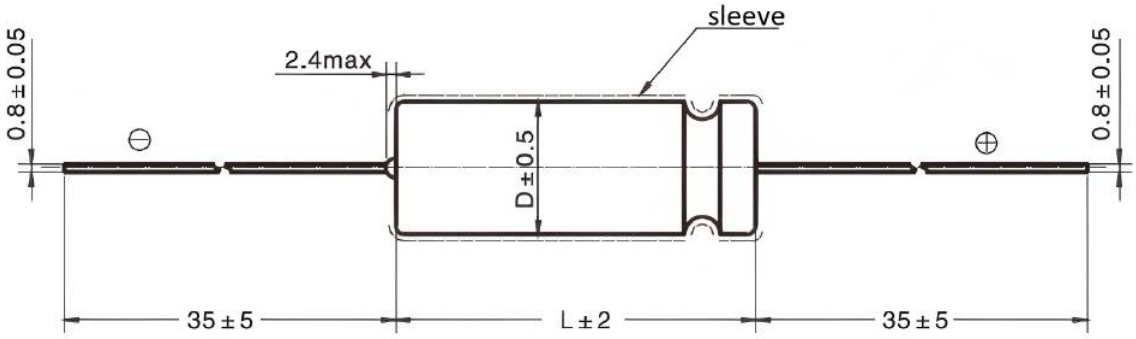
CBDC Series silver-cased ,hermetic sealed, with insulation sleeve
wet tantalum electrolytic capacitors.With polar axial leads are characterized
in stable and excellent performances, and high reliability.
CBDC Series meets the requirements of Chinese Electronic industry standard SJ/T10030-91, widely used in electronic equipment for military and civil applications such as telecommunication, aerospace and aviation.

2,General Characteristics

Operating Temperature Range: -55℃～+125℃(>85℃ with rated voltage derating);
Capacitance range: 1μF ~1500μF
Capacitance Tolerance: K=±10% ,M=±20%
Voltage: 6.3V~125V
DC Leakage: at +20℃, I0≤0.0008CR UR or 1μA(Whichever is greater);
at +85℃ and +125℃, I0≤0.0060 CR UR or 6μA(Whichever is greater)
Dissipation Factor at 20℃: please see Table 2
Impedance at -55℃ : please see Table 2
Case sizes, Dimensions and Max. weight: As shown in Table 1 and figure 1.
Nominal Capacitance, Rated voltage, Voltage Derating：See table 2



3,Drawing ， Case Dimension and Max. weight



Outline and Dimensions

Table 1

Code	Max. weight（g）	Uninsulated		With insulated sleeve	
		D±0.5（mm）	L±2 (mm)	D±0.5（mm）	L±2 (mm)
1	4	5	14	5.8	16
2	5	6	16	6.8	18
3	7	8	16	8.8	18
4	10	8	22	8.8	24
5	14	10	22	10.8	24
6	17	10	25	10.8	27

Note: When encapsulated with plastic insulation sleeve, dimension D increase 0.8mm and L increase 2mm.

CBDC

(hermetic sealed)

4, General Characteristics table 2

Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100Hz
6.3 1J	4	1	22	6	130
		1	33	8	100
		1	47	12	80
		1	68	15	60
		2	100	15	55
		2	150	20	50
		3	220	25	45
		3	330	30	40
		4	470	40	35
		5	680	45	30
		6	1000	50	25
		6	1200	55	25
		6	1500	70	20
10 1A	6.3	1	15	6	180
		1	22	6	130
		1	33	10	110
		1	47	12	90
		2	68	12	75
		2	100	12	50
		3	150	18	45
		3	220	25	40
		4	330	30	35
		5	470	35	30
		6	680	40	25
		6	1000	50	20
16 1C	10	1	10	5.7	200
		1	15	5.7	155
		1	22	6	130
		1	33	8	90
		2	47	10	80
		2	68	16	75
		3	100	18	60
		3	150	18	50
		4	220	18	45
		5	330	30	40
		6	470	35	35
		6	680	45	30

CBDC

(hermetic sealed)

Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100Hz
25 1E	16	1	6.8	4.6	300
		1	10	4.6	220
		1	15	6.5	175
		1	22	8.3	130
		2	33	9	100
		2	47	9	70
		3	68	9	60
		3	100	12	50
		4	150	14	45
		5	220	15	45
		6	330	20	35
		6	470	30	30
40 1G	25	1	4.7	4.5	450
		1	6.8	4.5	350
		1	10	4.5	260
		1	15	7	175
		2	22	7	130
		2	33	8	90
		3	47	8	65
		3	68	10	55
		4	100	12	40
		5	150	15	35
		6	220	20	30
		6	330	25	25
		10x30mm	1000	85	20
63 1J	40	1	2.2	4	1100
		1	3.3	4.5	700
		1	4.7	5	500
		1	6.8	5	350
		2	10	8	260
		2	15	8	150
		3	22	8	120
		3	33	10	85
		4	47	10	70
		5	68	10	55
		6	100	12	50
		6	150	15	40
		6	330	30	22

CBDC

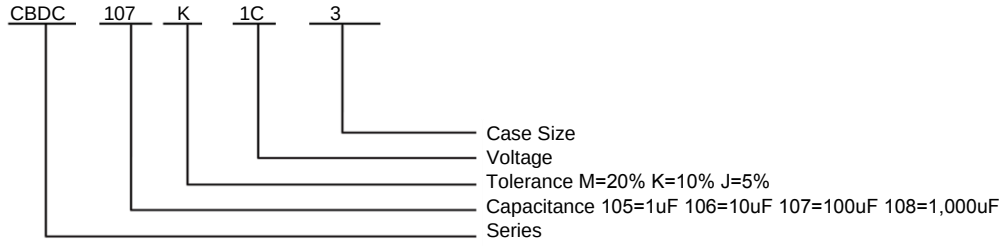
(hermetic sealed)

Rated Voltage	Voltage Derating	Case size	Capacitance （μF）	DF(%)Max 25℃,85℃,125℃	Impedance（Ω） -55℃ 100Hz
100 2A	63	1	1.5	5	1400
		1	2.2	5	1100
		1	3.3	6	700
		1	4.7	6	500
		2	6.8	8	350
		2	10	10	260
		3	15	10	160
		3	22	10	110
		4	33	12	110
		5	47	12	65
		6	68	12	50
		6	100	12	40
125 1Q	75	1	1.0	6	1800
		1	1.5	6	1400
		1	2.2	6	1100
		1	3.3	6	700
		2	4.7	6	500
		2	6.8	8	350
		3	10	9	260
		3	15	9	160
		4	22	9	130
		5	33	10	100
		6	47	10	70
		6	68	10	50

CBDC

(hermetic sealed)

PART NUMBER EXAMPLE



Notes：

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，$U_{=}$=2.2$^{0}_{-1.0}$V，$U_{\sim}$=1.0 $^{0}_{-0.5}$V(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

CBDEMetal Case |Hermetic Sealed

1,Brief Introduction and Feature

1) CBDE （equative CA30T series) Metal case ,hermetic sealed, with insulation sleeve wet tantalum electrolytic capacitors.
2) With polar, axial leads through hole, long life, good performances and stability.
3) Widely used in electronic equipment for communication equipment etc. industrial device.

Meet standard: QJ/PWV93-2003



2,General Characteristics

Operating Temperature Range: -55℃～+125℃(>85℃ with voltage derating);

Capacitance range: 1.7μF~1200μF

Capacitance Tolerance: K=±10% ,M=±20%

Voltage: 6V~125V

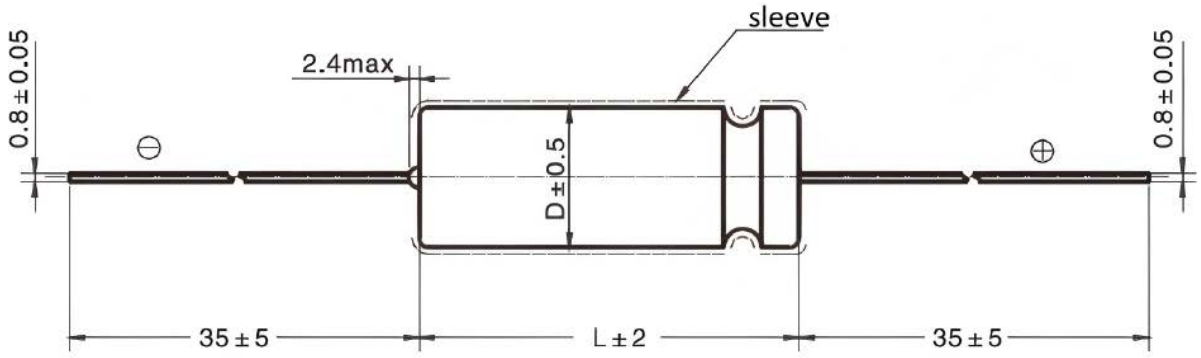
DF see Table 2

DCL see table 2

Case sizes, Dimensions and Max. weight: As shown in Table 1 and figure 1.

Nominal Capacitance, Rated voltage, Voltage Derating：See table 2

3,Drawing,Case Dimension and Max. weight



Outline and Dimensions

Table 1

Code	Max. weight（g）	Without sleeve		With sleeve	
		D±0.4（mm）	L±0.8 (mm)	D±0.4（mm）	L±0.8 (mm)
T1	4	4.8	11.5	5.6	12.8
T2	7	7.2	16.3	7.9	17.1
T3	14	9.5	19.5	10.3	20.3
T4	19	9.5	27	10.3	27.8

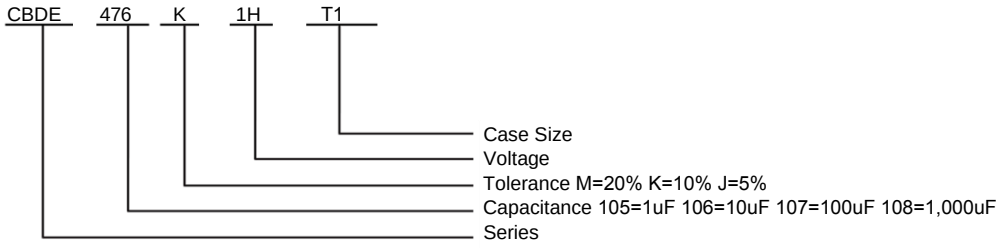
CBDE

4, **General Characteristics** Table 2

Rated Voltage (V)	Voltage Derating (V)	Case size	Cap. （μF）	DCL (μA)Max 25℃	DCL (μA)Max 85℃ 125℃	IMP（Ω） -55℃ 100Hz	Tgδ (%) 25℃ 85℃ 125℃	Rated Voltage (V)	Voltage Derating (V)	Case size	Cap. （μF）	DCL (μA)Max 25℃	DCL (μA)Max 85℃ 125℃	IMP（Ω） -55℃ 100Hz	Tgδ (%) 25℃ 85℃ 125℃
6 0I	4	T1	30	1	2	100	9.1	30	20	T4	300	8	32	25	35
		T1	68	1	2	60	20.4	50	30	T1	5	1	2	400	3.4
		T2	140	1	3	40	21.3			T1	10	1	2	250	6
		T2	270	1	6.5	25	81.8			T2	25	1	5	95	11.2
		T3	330	2	7.9	20	49.6			T2	47	1	9	70	21.4
		T3	560	2	13	25	128			T3	60	2	12	45	13.6
		T4	1200	3	14	20	144			T3	82	2	16+	45	24.9
8 0K	5	T1	25	1	2	100	7.6			T4	160	8	32	27	25.7
		T1	56	1	2	59	17	60	40	T1	4	1	2	550	3
		T2	220	1	7	30	66.4			T1	8.2	1	2	275	5
		T3	430	2	14	25	91.5			T2	20	1	5	105	7.6
		T4	850	4	16	22	65.8			T2	39	1	9	90	20.7
10 1A	7	T1	20	1	2	175	6.1			T3	50	2	12	50	15.3
		T1	47	1	2	100	18.1			T3	68	2	16	50	30.7
		T2	100	1	4	60	15.2			T4	140	8	32	28	25.7
		T2	180	1	7	40	54.4	75	50	T1	3.5	1	2	650	2.5
		T3	250	2	10	30	37.8			T1	6.8	1	2	300	4.1
		T3	390	2	16	25	87.6			T2	15	1	5	150	7.5
		T4	750	4	16	23	56.5			T2	33	1	10	90	17.5
15 1R	10	T1	15	1	2	155	5.7			T3	40	2	12	60	15.2
		T1	33	1	2	90	12.5			T3	56	2	17	60	25.6
		T2	70	1	4	75	13.1			T4	110	9	36	29	25.7
		T2	120	1	7	50	36.8	100	65	T1	2.5	1	2	950	5
		T3	170	2	10	35	25.4			T1	4.7	1	2	500	3.6
		T3	270	2	16	30	60.9			T2	11	1	4	200	5
		T4	540	6	24	23	49			T2	22	1	9	100	11.8
25 1E	15	T1	10	1	2	220	4.6			T3	30	2	12	80	9.1
		T1	22	1	2	140	8.3			T3	43	2	17	70	19.7
		T2	100	1	10	50	31.4			T4	86	9	36	30	20.7
		T3	180	2	18	32	54.3	125	85	T1	1.7	1	2	1250	7
		T4	350	7	28	24	35			T1	3.6	1	2	600	4.1
30 1U	20	T1	8	1	2	275	4.5			T2	9	1	5	240	10.2
		T1	15	1	2	175	9.1			T2	14	1	7	167	12.7
		T2	40	1	5	65	12.2			T3	18	2	9	129	15
		T2	68	1	8	60	31			T3	25	2	13	93	19
		T3	100	2	12	40	19			T4	56	10	40	32	17.5
		T3	150	2	18	35	46								

CBDE

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，U=2.2Ω-1.0V，U =1.00-0.5V(effective value), measure method is by series equivalent circuit.

3、Measure leakage current above 125℃,please use derated voltage. DLC read within 5 minute.

4、Special size and big capacitance products, please negotiate with us

CBFF

Solid electrolyte tantalum capacitor with reliability index



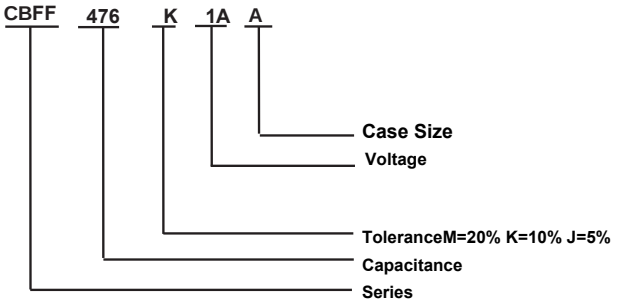
Features and uses

- Metal shell packaging, gas seal, cylindrical, axial lead-out, coat insulation casing, polarity;
- Excellent and stable electrical performance, high reliability, long life, good storage stability, loss Angle tangent and small leakage current, small volume, equivalent to the CSR13 model in MIL-C-39003E;
- DC or pulsating circuit suitable for aircraft, ship, vehicle, radar, electronic and other electronic equipment with reliability requirements.
- Implementation of the standard: GJB63B-2001, QJ / PWV 73-2002

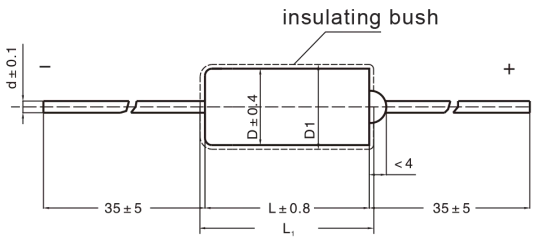
basic mechanical design feature

- Temperature range: -55℃ - + 125℃;
- see Application Guidance 4.1; Allowable deviation of capacity: K: ± 10%; M: ± 20%;
- Room temperature leakage current: 0.01 CU (A) or 0.5 μ A (large);
- Rated voltage, reduced voltage and nominal capacitance: see Table 1; Overall dimensions and maximum weight: see Figure 1 and Table 2;
- High and low temperature characteristics: not exceeding those specified in Table 3.

PART NUMBER EXAMPLE



unit:mm



graph 1

Table 1 Rated voltage, reduced voltage and nominal capacitance of the capacitor

rated voltage U_R(V)	6.3(6) 0J	10 1A	16(15) 1C	20 1D	25 1E	35(32) 1V	40 1G	50 1H	63(60) 1J	75 1M	100 2A
Case code	rated capacitance C_R(μF)										
A	5.6 6.8	3.9 4.7	2.7 3.3	1.2 1.5 1.8 2.2	2.2	0.10 0.12 0.15 0.18 0.22 0.27 0.33 0.39 0.47 0.56 0.68 0.82 1.0	0.1 1.0	0.047 0.056 0.068 0.082 0.1 0.12 0.15 0.18 0.22 0.27 0.33 0.39 0.47 0.56 0.68 0.82 1.0		0.10 0.12 0.15 0.18 0.22 0.27 0.33 0.39 0.47 0.56 0.68	0.047 0.056 0.068 0.082 0.10 0.12 0.15 0.18 0.22 0.27 0.33 0.39 0.47 0.56

CBFF

Table 1 (continued) capacitor rated voltage, reduced voltage and nominal capacity

rated voltage U.(V) 6.3 0J	10 1A	16(15)1C	20 1D	25 1E	35(32)1V	40 1G	50 1H	63(60)1J	75 1M	100 2A
Housing code nominal capacity C_R (μ F)										
B	47 56	27 33 39	18 22	8.2 10 12 15	3.3 4.7 6.8 10 15	1.2 1.5 1.8 2.2 2.7 3.3 3.9 4.7 5.6 6.8	3.3 4.7	1.2 1.5 1.8 2.2 2.7 3.3 3.9 4.7	1.0	0.82 1.0 1.2 1.5 1.8 2.2 2.7 3.3 3.9	0.68 0.82 1.0 1.2 1.5 1.8 2.2 2.7
B1			22	22 33		10				
C	150 180	82 100 120	28	27 33 39 47		8.2 10 12 15 18 22		5.6 6.8 8.2 10 12 15 18		4.7 5.6 6.8 8.2 10	3.3 3.9 4.7
D1					47		33				
D2							47		22		
D	270 330 390 470	150 180 220 270 330	82 100 120 150 180	56 68 82 100 120 150	150	27 33 39 47 56 68		22 27 33 47		12 15	

Table 2 External dimensions and maximum weight of capacitors

Case code	maximum weight (g)	No insulation casing		Insulation casing		d±0.1 (mm)
		D±0.4(mm)	L±0.8(mm)	D.max(mm)	L,max(mm)	
A	0.7	3.2	6.5	3.9	8.2	0.5
B	2.3	4.5	11.0	5.2	12.7	0.5
B1	3.0	6.0	14.0	6.7	15.7	0.6
C	6.5	7.0	16.5	7.7	18.2	0.6
D1	6.0	8.0	14.0	8.7	15.7	0.8
D2	8.0	8.0	22.0	8.7	23.7	0.8
D	11	8.6	19.0	9.3	20.7	0.6

Table 3. Characteristics of high and low temperature

nominal capacity Cn(μF)	Capitance change (%)			Loss angle tangent value max (%)				Leakage current max (μ A)	
	-55℃	+85℃	+125℃	-55℃	+25℃	+85℃	+125℃	+85℃	+125℃
≤1.0	±8	±8	±12	2	2	3	3	$8I_0$	$10I_0$
1.2～5.6				3	3	3	3		
6.8～82				5	5	5	5		
100～330				6	6	6	6		
390～470				8	8	8	8		

Note:

1. It is forbidden to use tantalum capacitors regardless of polarity;
2. The measuring frequency of capacitance and loss angle tangent is 100Hz, and the DC bias voltage is U =2.20-1.0V, AC bias voltage U~=1.00-0.5V (valid value),The measurement method adopts the series-connected equivalent circuit;
3. Products of special size with large capacity or exceeding this standard can be negotiated with our company;
4. Apply a derated voltage measurement when measuring the 125℃ leakage current.

CBFE

(Military Standard) Equative GCA Series



1,Brief Introduction:

CBFE Series metal-cased solid tantalum electrolytic capacitors

with polar axial,**Hermetically sealed.**

leads are characterized in small size, wide operating temperature range,

stable performances, high reliability and long life,

CBFE Series meets the requirements of Chinese National Standard QZJ840628,Q/RT0.464.150-2005,

Widely used in instruments meters and other electronic equipment for military and civil applications.

2, General Characteristics

Temperature Range: -55℃～+125℃(>85℃ with rated voltage derating).

Capacitance Tolerance: ±20%,±10%,±5%

DC Leakage current: (25℃): I0≤0.01CRUR or 0.5μA（whichever is greater）

(85℃): I0≤0.08CRUR (μA)

(125℃): I0≤0.1CRUR (μA)

Dissipation factor (20℃): see table 1

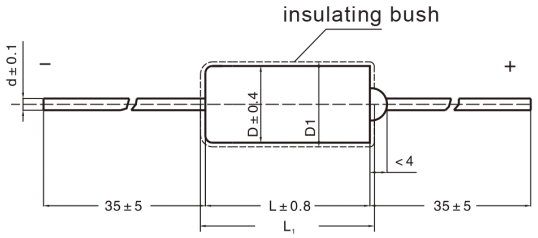
Table 1

Capacitance (μF)	Cap. Change△C/C（%）			MAX.					
				DF(%)Max				DCL Max.	
	-55℃	+85℃	+125℃	-55℃	+20℃	+85℃	+125℃	+85℃	+125℃
≤1	±8	±8	±10	3	3	3		8 I0	10I0
1.5～68				5	5	5			
100～330				6	6	6			
470～1000				8	8	8			

Note：（1）Measured at a voltage derating.

unit:mm

3,Drawing ,Dimensions and Max Weight



graph 1

Table 2

Case code	Weight Max （g）	uninsulated		With insulated sleeve		d±0.1（mm）
		D±0.5（mm）	L±2 (mm)	D±0.5（mm）	L±2 (mm)	
1	0.7	3.2	8	4	10	0.4
2	2.3	5	12	5.8	14	0.6
3	3.0	6	14	6.8	16	0.6
4	4.0	8	14	8.8	16	0.8
5	8.0	8	22	8.8	24	0.8
6	14.0	10	22	10.8	24	0.8

Note: When encapsulated with plastic insulation sleeve, dimension D increase 0.8mm and L increase 2mm.

CBFE

(Military Standard)

4, Nominal Capacitance, Rated voltage, Voltage Derating

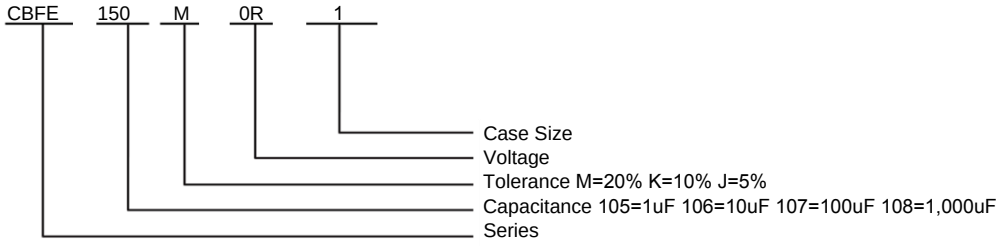
Table 3

Rated voltage	6.3 0J	10 1A	16 1C	25 1E	32 1X	40 1G	63 1J	75 1M	100 2A
Voltage Derating	4	6.3	10	16	20	25	40	50	63
Code	Capacitance (μF)								
1	1.0	0.68	0.33	0.33	0.22	0.22	0.22	0.22	0.047
	1.5	1.0	0.47	0.47	0.33	0.33	0.33	0.33	0.068
	2.2	1.5	0.68	0.68	0.47	0.47	0.47		0.1
	3.3	2.2	1.0	1.0	0.68	0.68			0.15
	4.7	3.3	1.5	1.5	1.0	1.0			0.22
	6.8	4.7	2.2	2.2	1.5				0.33
	10	6.8	3.3						
2	15	10	4.7	3.3	2.2	1.5	0.68	0.47	
	22	15	6.8	4.7	3.3	2.2	1.0	0.68	0.47
	33	22	10	6.8	4.7	3.3	1.5	1.0	0.68
	47	33	15	10	6.8	4.7	2.2	1.5	1.0
	68	47	22	15	10	6.8	3.3	2.2	1.5
			33						
3	100	68	47	22	15	10	4.7	3.3	2.2
		100	68	33		15		4.7	3.3
4	150	150	100	47	22	22	6.8		
	220			68	33	33	10		
5	330	220	150	100	47	47	15		
	470	330	220		68		22		
6	680	470	330	150	100	68	33		
	1000	680	470	220	150	100	47		

CBFE

(Military Standard)

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，$U_{=}$=2.2$^{0}_{-1.0}$ V，$U_{\sim}$=1.0 $^{0}_{-0.5}$V(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us.

AXIAL LEAD SOLID TANTALUM CAPACITOR

CBDY

Products Name:Axial Leads Solid Eelctrolytic Tantalum Capacitor
Model:CBDY Equative CA series
Value:1uF~1000uF
Votage:6.3V~100V
Size(mm):

1,Brief Introduction:

CBDY Series metal- cased solid tanta lum electrolytic capacitors with polar axial leads are characterized in small size, wide operating temperature range, stable performances, high reliability and long life, CBDY Series meets the requirements of Chinese National Standard GB8583- 88, widely used in instruments meters and other electronic equipment for military and civil applications.



2, General Characteristics

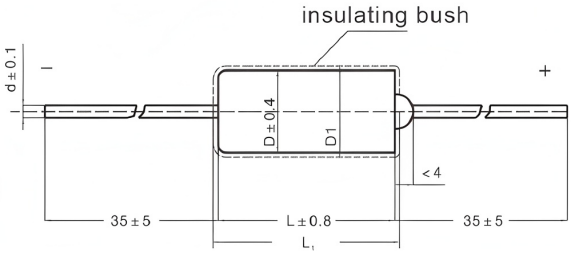
Temperature Range: - 55℃ ~ +125℃(>85℃ with rated voltage derating).
Capacitance Tolerance:± 20%,± 10%
DC Leakage:20℃ lO≤0.01CrUr or 0.5uA(whichever greater)
Dissipation factor (20℃): see table 1
Temperature Characteristics: See table 1

Table 1

Capacitance (μF)	Cap. Change△C/C(%)			MAX. DF(%)Max				DCL Max.	
	- 55℃	+85℃	+125℃	- 55℃	+20℃	+85℃	+125℃	+85℃	+125℃
≤ 1	± 8	± 8	± 10	3	3	3		8I0	10I0 (1)
1.5 ~ 68				5	5	5			
100 ~ 330				6	6	6			
470 ~ 1000				8	8	8			

Note: (1)Measured at a voltage derating.

3,Drawing ,Dimensions and Max Weight



Outline and Dimensions

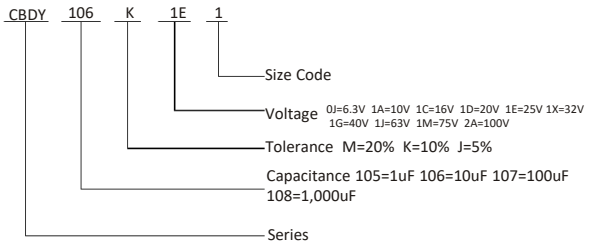
Case code	Weight Max(g)	D±0.5(mm)	L±2 (mm)	d±0.1(mm)
1	0.7	3.2	8	0.4
2	2.3	5	12	0.6
3	3.0	6	14	0.6
4	4.0	8	14	0.8
5	8.0	8	22	0.8
6	14.0	10	22	0.8

Note: When encapsulated with plastic insulation sleeve, dimension D increase 0.8mm and L increase 2mm.

4,Nominal Capacitance, Rated voltage, Voltage Derating

Rated voltage	6.3	10	16	25	32	40	63	75	100
Voltage Derating	4	6.3	10	16	20	25	40	50	63
Code	Capacitance (μF)								
1	1.0	0.68	0.33	0.33	0.22	0.22	0.22	0.22	0.047
	1.5	1.0	0.47	0.47	0.33	0.33	0.33	0.33	0.068
	2.2	1.5	0.68	0.68	0.47	0.47	0.47		0.1
	3.3	2.2	1.0	1.0	0.68	0.68			0.15
	4.7	3.3	1.5	1.5	1.0	1.0			0.22
	6.8	4.7	2.2	2.2	1.5				0.33
	10	6.8	3.3						
2	15	10	4.7	3.3	2.2	1.5	0.68	0.47	
	22	15	6.8	4.7	3.3	2.2	1.0	0.68	0.47
	33	22	10	6.8	4.7	3.3	1.5	1.0	0.68
	47	33	15	10	6.8	4.7	2.2	1.5	1.0
		47	22	15	10	6.8	3.3	2.2	1.5
	68		33					3.3	
3		68	47	22	15	10	4.7	4.7	
	100	100	68	33		15			
4	150	50	100	47	22	22	6.8		2.2
	220			68	33	33	10		3.3
5	330	220	150	100	47	47	15		
	470	330	220		68		22		
6	680	470	330	150	100	68	33		
	1000	680	470	220	150	100	47		

5,PART NUMBER EXAMPLE



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NON POLAR AXIAL TANTALUM CAPACITOR

This product is a axial leads non-polar solid tantalum capacitor. Suit for polar transform DC and pulse circuit

CBIA



Technic Performance:

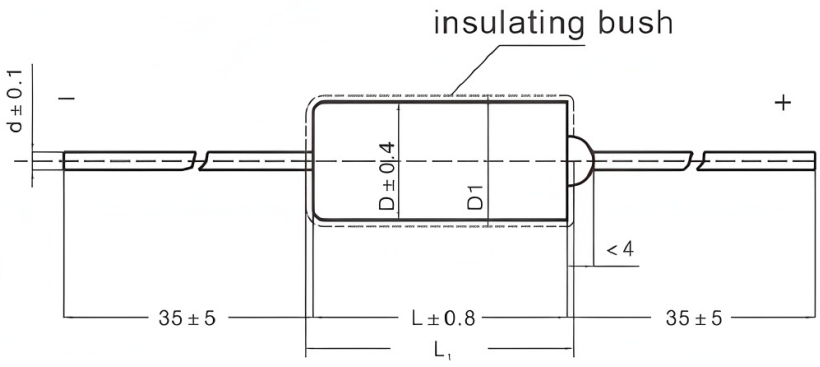
- Equative CA72 series
- Operation Temperature: -55~+85℃
- Operate Voltage Range: 6.3V~63V
- Capacitance Range: 0.22~220u F
- Capacitance Tolerance:±10%，±20%
- Leakage Current(μ A):20℃时：

  A:I_0≤0.08 C_RU_R(lower 1.5μ A use 1.5μ A)

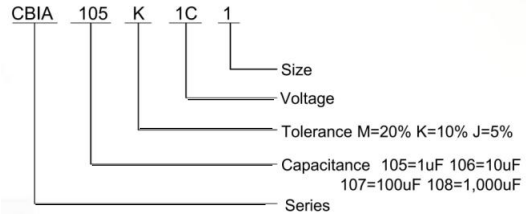
  B I_0≤0.04 C_RU_R(Lower 1μ A use 1μ A)
- Dissipation Factortgδ 0(%)：at 20℃.100Hz:

  Capacitance C_R<47μ F: tgδ 0≤10%

  Capacitance C_R≥47μ F: tgδ 0≤15%



PART NUMBER EXAMPLE:



Case size, Rated voltage, Capacitance: See table 1

CASE SIZE, MAX WEIGHT, CAPACITANCE Table1:

Rated Voltage DC				6.3 0J	10 1A	16 1C	25 1E	32 1X	40 1G	63 1J
Case code	Case size D×L(mm)	Pin Diameter d/mm	Max. Weight (g)	Capacitance CR (μF)						
1	4×17	0.4	3.5	3.3 4.7	1.5 2.2 3.3	1.0 1.5	0.68 1.0	0.47 0.68	0.33 0.47	0.22
2	6x25	0.6	5	6.8 10 15 22 33	4.7 6.8 10 15 22 33	2.2 3.3 4.7 6.8 10 15	1.5 2.2 3.3 4.7 6.8	1.0 1.5 2.2 3.3 4.7	0.68 1.0 1.5 2.2 3.3	0.33 0.47 0.68 1.0 1.5
3	7x30	0.6	9	47	47	22 33	10 15	6.8	4.7 6.8	2.2
4	9×30	0.8	12	68 100	68	47	22 33	10 15	10 15	3.3 4.7
5	9×45	0.8	20	150 220	100 150	68 100	47	22 33	22	6.8 10

NON POLAR RADIAL TANTALUM CAPACITOR

CBIB

Equative CA72 series
This product is a redial leads non-polar solid tantalum capacitor.
Suit for polar trans form
DC and pulse circuit.
Implementation of standards SJ1510-79

Technic Performance:

- Operation Temperature: -55~+85℃
- Operate Voltage Range: 6.3V~63V
- Capacitance Range: 0.22~150u F
- Capacitance Tolerance:±10%，±20%
- Leakage Current(μ A): +20℃：

  A:I_0≤0.08 C_RU_R(lower 1.5μ A use 1.5μ A)

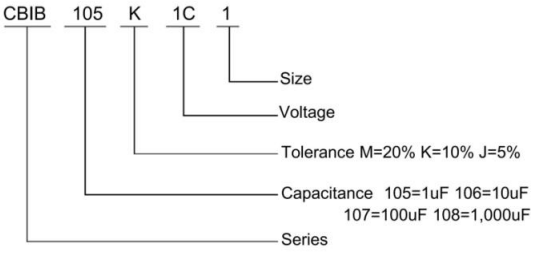
  B I_0≤0.04 C_RU_R(Lower 1μ A use 1μ A)
- Dissipation Factortgδ 0(%)：at 20℃.100Hz:

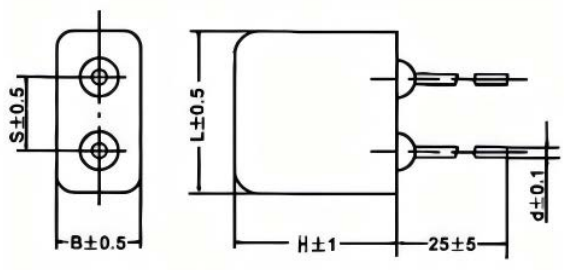
  Capacitance C_R<47μ F: tgδ 0≤10%

  Capacitance C_R≥47μ F: tgδ 0≤15%



PART NUMBER EXAMPLE:





CASE SIZE, MAX WEIGHT, CAPACITANCE

Table1:

Rated Voltage DC					6.3 0J	10 1A	16 1C	25 1E	32 1X	40 1G	63 1J
Case code	Case Size B×L×H/mm	Pin Diameter mm	Pin Space mm	Max. Weight (g)	Capacitance CR (μF)						
1	3.5×6.5×9.5	0.4	2.5	1.6	3.3 4.7	2.2 3.3	1.5 2.2	1.0 1.5	0.68 1.0	0.68 1.0	0.22 0.33
2	5.6×11×16	0.6	5.0	6.5	6.8 10 15 22 33	4.7 6.8 10 15 22	3.3 4.7 6.8 10 15	2.2 3.3 4.7 6.8 10	1.5 2.2 3.3 4.7 6.8	1.5 2.2 3.3 4.7	0.47 0.68 1.0 1.5 2.2
3	8.2×16×18	0.8	8.0	16	47 68	33 47	22 33	15 22	10 15	6.8 10	3.3 4.7
4	8.2×16×22	0.8	8.0	25	100 150	68 100	47 68	33 47	22 33	15 22	6.8 10

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CBHA

1,Brief Introduction



CBHA Series solid tantalum electrolytic capacitors is Cylindrical ,Metal case
With polar radial leads are characterized in small size, low DC Leakage,
stable and excellent performances, high reliability and long life. CBHA
Series meets the requirements of Chinese Electronic industry standard Q/PWV20002-2002,
Suit for polar transform DC and pulse circuit

2,General Characteristics

Operating Temperature Range: -55℃～+125℃(>85℃ with rated voltage derating)
Capacitance Tolerance:M=±20%,K=±10%
DC Leakage: at +20℃, I0≤0.01C U_R or 0.5uA(Whichever is greater);
Temperature performance please see Table3
Ouline , dimensions and max weight see table1
Rated Voltage,derated voltage and capacitance see table 2

3,Outline and dimensions:

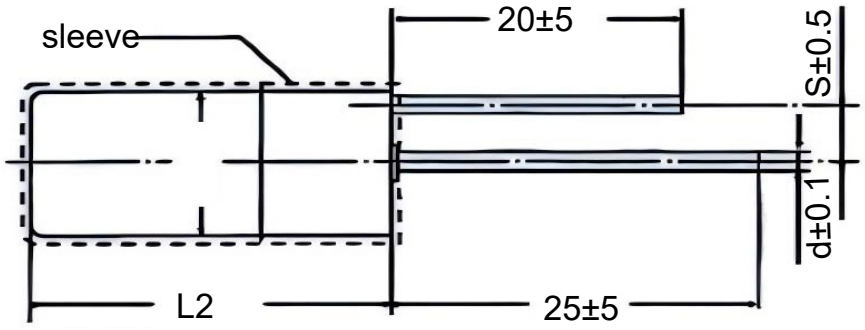


Table1:**Outline dimension**

Case Code	Weight (max.g)	Without insulation sleeve		With insulation sleeve		d±0.1 (mm)	s±0.5 (mm)
		D±0.5 (mm)	L±2 (mm)	D max (mm)	L max (mm)		
1	0.7	3.2	8	4.0	10	0.4	0.8
2	2.5	5	12	5.8	14	0.6	1.3
3	3.5	6	14	6.8	16	0.6	1.6
4	6.0	8	14	8.8	16	0.8	2.0
5	10.0	8	22	8.8	24	0.8	2.0
6	16.0	10	22	10.8	24	0.8	4.0

CBHA

4, Rated voltage,Derated voltage and Capacitance Table 2

Rated Voltage(V)	6.3 0J	10 1A	16 1C	25 1E	32 1X	40 1G	63 1J
Derated Voltage(V)	4	6.3	10	16	20	25	40
Case Code	Nominal Capacitance(μF)						
1	6.8 10	3.3 4.7 6.8	2.2 3.3	1.5 2.2	1.0 1.5	0.68 1.0	0.22 0.33 0.47
2	15 22 33 47 68	10 15 22 33 47	4.7 6.8 10 15 22 33	3.3 4.7 6.8 10 15	2.2 3.3 4.7 6.8 10	1.5 2.2 3.3 4.7 6.8	0.68 1.0 1.5 2.2 3.3
3	100	68 100	47 68	22 33	15	10 15	4.7
4	150 220	150	100	47 68	22 33	22 33	6.8 10
5	330 470	220 330	150	100	47 68	47	15 22
6	680 1000	470 680	220 330	150 220	100 150	68 100	33 47

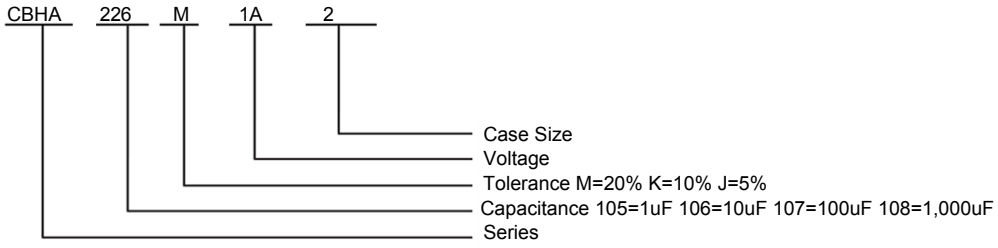
Feature of high and low temperature Table3:

Capacitance (uF)	Capacitance Change(%)			Maximum					
				Dissipation factor(%)				Leakage current(Ua)	
	-55℃	85℃	125℃	25℃	-55℃	85℃	125℃	85℃	125℃
≤1	±8	±8	±10	3	3			$8I_0$	$10I_0$
1.5~68				5	5				
100~330				6	6				
470~1000				8	8				

RADIAL LEADS SOLID TANTALUM CAPACITOR

CBHA

PART NUMBER EXAMPLE



Notes:

1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz，U_{-}=2.2$^{0}_{-1.0}$V，$U_{\sim}$=1.0 $^{0}_{-0.5}$V(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

CBHB

1,Brief Introduction

CBHB Series wet tantalum electrolytic capacitors
With polar radial leads are characterized in small size, low DC Leakage, stable and excellent performances, high reliability and long life. CBHB Series meets the requirements of Chinese Electronic industry standard QJ/PWV82-2003, widely used in electronic equipment for military and civil applications such as telecommunication, aerospace and aviation.



2, Technical Characteristics

Operating Temperature Range: -55℃～+125℃(>85℃ use derated voltage)
Capacitance Tolerance: M=±20%,K=±10%
DC Leakage: at +20℃, I0≤0.001CRUR or 1μA(Whichever is greater);
at +85℃ I0≤0.01CRUR or 10μA(Whichever is greater)
At +125℃, I0≤0.015 CRUR or15μA(Whichever is greater)
DF (tgδ) at 20℃ please see table 2

3, Outline and dimensions:

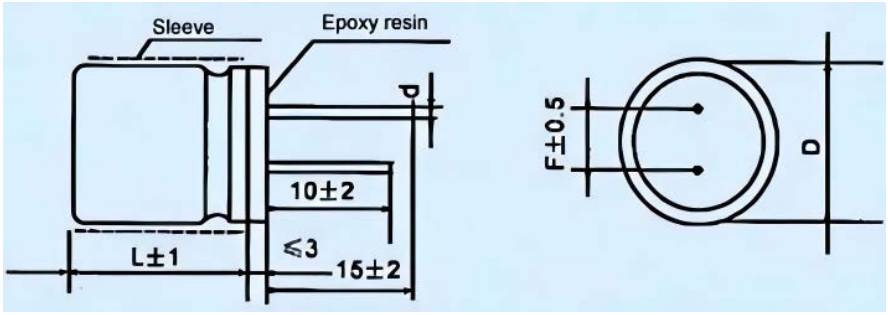


Table 1 Dissipation factor at 25℃

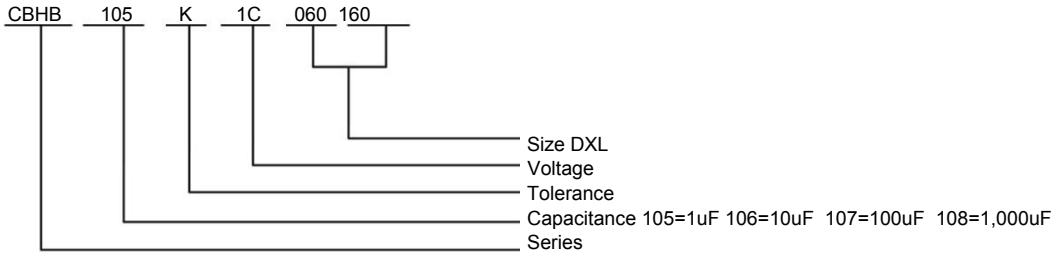
Dissipation Factor (%) / Capacitance (uF) / Rated Voltage(V)	1-4.7	6.8	10	15	22	33	47	68	100	150	220	330	470	680	1000
6.3 0J					15	20	25	30	45	40	70	50	85	80	90
10 1A				10	15	15	15	30	20	50	45	70	75	65	80
16 1C			10	10	10	12	20	20	35	35	60	70	50	70	90
25 1E		8	8	10	10	20	15	30	25	50	50	40	50	80	
40 1G	6	8	8	10	20	12	25	20	35	35	30	45	45		
63 1J	6	8	8	10	18	12	25	25	20	28	45	45			
100 2A	6	8	10	18	15	25	28	20	25	40					
125 1Q	6	8	15	15	20	23	20	23							

CBHB

Table 2 Rated voltage,derated voltage,dimensions and nominal capacitance.

Rated Voltage(V)			6.3	10	16	25	40	63	100	125
Derated Voltage(V)			4	6.3	10	16	25	40	63	75
Dimensions(mm)			Nominal Capacitance(uF)							
DxL	F	d								
6x16	3.5	0.8	100 150	68 100	47 68	33 47	22 33	15 22	6.8 10	4.7 6.8
8x14	5.0	0.8	220 330	150 220	100 150	68 100	47 68	33 47	15 22	10 15
10x14	5.0	0.8	470 680	330 470	220 330	150 220	100 150	68 100	33 47	22 33
10x16	5.0	0.8	1000	680	470	330	220	150	68	47
12x20	6.0	1.0			680	470	330	220	100	68
12x24	6.0	1.0			1000	680	470	330	150	

PART NUMBER EXAMPLE



Notes:

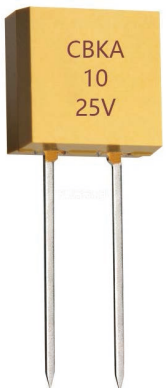
1、Tantalum capacitors can't been measured by multimeter (Easily cause irreversible damage and lead to reject)

2、Capacitance, DF measure frequency: 100Hz， U_{-}=2.2 $^{0}_{-1.0}$V， $U_{\sim}$=1.0 $^{0}_{-0.5}$V(effective value)

3、Measure leakage current above 85℃,please use derated voltage.

4、Special size and big capacitance products, please negotiate with us

CBKA



Features and Uses

- Molded plastic sealing, excellent sealing performance, rectangular design, unidirectional lead-out, precise shape, compact size, lightweight, and polarized capacitor;
- Excellent electrical performance, stable and reliable, low leakage current at high temperature, small loss tangent, large capacitance;
- Suitable for high density assembly and miniaturization of electronic equipment such as communication, instrumentation and other electronic equipment of direct current or pulsating circuit.

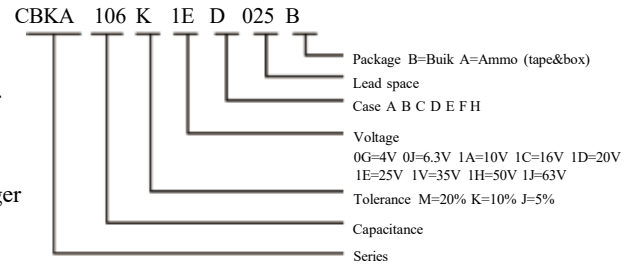
Basic mechanical design feature

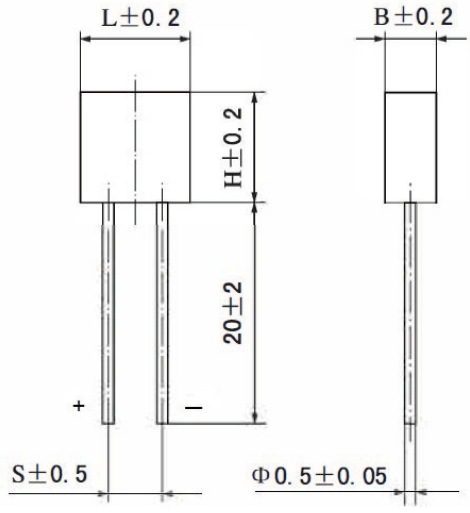
- Temperature range: -55℃ to 125℃ (category voltage applied when temperature exceeds 85℃);
- Rated voltage, category voltage, and nominal capacitance: see Table 3.
- Allowable capacitance deviation: K: ±10%, M: ±20%;

Room temperature leakage current: $I_0 \leq 0.01 C_R U_R$ (μA) or 0.5μA (the larger one);

- Room temperature loss tangent ($tg\delta_0$): must not exceed the values specified in Table 2.
- High and low temperature characteristics: must not exceed the specifications in Table 2.
- Dimensions and maximum weight: see Figure 1 and Table 1.

part number example





chat 3

Table 1. Dimensions and Maximum Weight

case code	outline dimension / mm				maximum weight g
	H	L	B	S	
B	4.2	3.1	1.8	2.0	0.4
C	5.7	4.7	1.9	2.54	0.6
D	7.4	5.6	2.8	2.54	0.8
E	7.9	5.8	3.3	2.54	1.0
F	10	9.5	4.5	5.08	2.0
H	10	9.5	5.8	5.08	3.0

Table 2: High and low temperature characteristics of capacitors

rated capacitance C_R μF	range of capacitance variation %			crest value					
				dissipation factor %				leakage current μA	
	-55℃	85℃	125℃	-55℃	25℃	85℃	125℃	85℃	125C
≤4.7	±10	±10	±15	6	3	5	6	8 I_0	10 I_0
6.8-68				7	5	5	9		
100-220				8	7	7	8		
330-470				10	10	10	10		
680-1000				15	12	15	15		

Note: 1) Measurement conditions for capacitance and loss $U_{\sim}=2.2^{0}_{-1.0}V$, $U_{\sim}=1.0^{0}_{-0.5}V$

tangent: Voltage: (effective value); Frequency: 100Hz.

2) When measuring leakage current at 125℃, apply category voltage for measurement.

Table 3: Rated Voltage, Category Voltage, Nominal Capacity, and Enclosure Code of Capacitors

Rated voltage (U_R) V	4		6.3(6)		10		16(15)		20		25		35(32)		40		50		63 (60)	
Category Voltage (U_C) V	2.5		4		6.3		10		13		16		20		25		32		40	
Nominal capacitance (C_R) μF	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ex.t	St.d	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.
0.047																			B	
0.068																	B		B	
0.1															B		B		B	
0.15													B		B		B		B	
0.22											B		B		B		B		C	
0.33									B		B		B		B		C		C	
0.47							B		B		B		B		C		C		C	
0.68					B		B		B		B		C		C		C		D	
1.0			B		B		B		B		C	B	C		C		D		D	
1.5	B		B		B		B		C	B	C		C		D		D		E	
2.2	B		B		B		C	B	C		C		D	C	D		E		E	
3.3	B		B		C	B	C		C		D		D		E		E		F	
4.7	B		C	B	C	B	C		D	C	D		E	D	E		F		F	
6.8	C	B	C	B	C		D	C	D		E	D	E		F		F		F	
10	C	B	C	B	D	C	D		E	D	E	D	F	E	F		F		H	
15	C	B	D	C	D	C	E	D	E	D	F	E	F		F		H			
22	D	C	D	C	E	D	E	D	F	E	F	E	F		H					
33	D	C	E	D	E	D	F	E	F	E	F		H	F						
47	E	D	E	D	F	E	F	E	F		H	F	H							
68	E	D	F	E	F	E	F		H	F	H	F								
100	F	E	F	E	F	E	H	F	H	F	H									
150	F	E	F	E	H	F	H	F	H											
220	F	E	H	F	H	F	H		H											
330	H	F	H	F	H	F														
470	H	F	H	F	H															
680	H	F	H																	
1000	H																			

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double 85

BASIC MECHANICAL DESIGN FEATURE

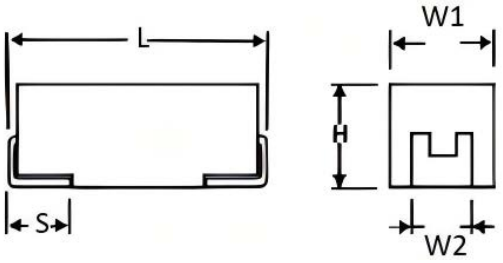
- ◆ resin molding packaging, good sealing, sheet type, small volume, light weight, polarity;
- ◆ electrical performance is excellent and stable, high reliability, good storage stability;
- ◆ conductive polymer electrolyte, ultra-low ESR (equivalent series resistance), high-frequency capacity retention, large ripple current resistance;
- ◆ benign failure mode;
- ◆ is suitable for aircraft, vehicles, ships, radar, electronics, communication and other fields with reliability requirements of electronic equipment surface mounted DC or pulse circuit;
- ◆ adds optional dual 85 products: Using new technology, the products have the ability to store and work at high temperature and high humidity for long periods (85℃, 85%RH, 1000h) despite maintaining the original performance.
- ◆ If users need double 85 products, please indicate them in the order contract.
- ◆ execution standards: GJB2283-95, QJ / PWV501-2011



(Note: When purchasing double 85 products, please note "double 85" in the notes of the order contract)

BASIC MECHANICAL DESIGN FEATURE

Use temperature range: -55~125℃; see Application Guide 4.1;
Rated voltage, downrated voltage and nominal capacitance: see Table 2;
allowable allowable capacity: K:±10%; M:±20%;
Room temperature DC leakage current, room temperature loss Angle is cut: do not exceed that specified in Table 2;
AC ripple current (85℃, 100KHz): not exceeding that specified in Table 2;
Equivalent series resistance ESR (25℃, 100KHz): not exceeding that specified in Table 2;
High and low temperature characteristics: see Table 2;
Overall dimensions and shell code: see Figure 1 and Table 1.



CHAT 1

Table 1 Overall dimensions of the capacitors (mm)

hull	L	W_1	H	S	W_2
A	3.2±0.3	1.6±0.3	1.6±0.3	0.8±0.2	1.2±0.2
B	3.5±0.3	2.8±0.3	1.9±0.3	0.8±0.2	2.2±0.2
C	6.0±0.3	3.2±0.3	2.5±0.3	1.3±0.2	2.2±0.2
H	7.3±0.3	4.3±0.3	2.1±0.3	1.7±0.2	2.4±0.2
D	7.3±0.3	4.3±0.3	2.8+0.3	1.5±0.2	2.4±0.2
E	7.3±0.3	4.3±0.3	4.1±0.3	1.5±0.2	2.4±0.2
V	7.3±0.3	6.1±0.3	3.6±0.3	1.5±0.2	3.0±0.2
W	7.3±0.3	6.1±0.3	4.1±0.3	1.5±0.2	3.0±0.2
X	7.3±0.3	6.0±0.3	6.0±0.3	1.5±0.2	4.0±0.2
S	11.0±0.3	9.0±0.3	4.5±0.3	1.5±0.2	10.5±0.4
T	11.0+0.3	12.5±0.3	5.5±0.3	2.1±0.2	10.5±0.4

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 2.5V												
1	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
15	A	0.150	0.73	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
15	B	0.100	0.94	5.0	40.0	50.0.	-10～+10	-10～+30	-10～+50	10	12	15
22	A	0.150	0.73	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
22	B	0.100	0.94	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
33	B	0.090	0.99	8.3	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.060	1.38	8.3	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
47	B	0.090	0.99	11.8	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.060	1.38	11.8	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
68	B	0.090	0.99	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
68	C	0.060	1.38	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
100	C	0.060	1.38	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.045	1.87	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.025	2.62	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.045	1.87	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
220	D	0.045	1.87	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.025	2.62	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
330	D	0.045	1.87	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.025	2.62	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
470	D	0.045	1.87	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
470	E	0.025	2.62	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
680	D	0.045	1.87	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
680	E	0.025	2.62	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
680	V	0.025	2.90	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	E	0.050*	1.85	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	E	0.020	2.94	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	V	0.040	2.29	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	W	0.025	2.93	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
2200	T	0.025	4.14	550.0	4400.0	5500.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R） 4V												
1	A	0.150	0.72	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.150	0.72	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 4V												
3.3	A	0.150	0.72	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	A	0.150	0.72	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	A	0.150	0.72	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.100	0.99	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.150	0.72	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.100	0.99	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
15	A	0.150	0.72	6.0	48.0	60.0	-10～+10	-10～+30	-10～+50	10	12	15
15	B	0.100	0.94	6.0	48.0	60.0	-10～+10	-10～+30	-10～+50	10	12	15
22	A	0.250	0.56	8.8	70.4	88.0	-10～+10	-10～+30	-10～+50	10	12	15
22	B	0.090	0.99	8.8	70.4	88.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.060	1.38	8.8	70.4	88.0	-10～+10	-10～+30	-10～+50	10	12	15
33	B	0.090	0.99	13.2	105.6	132.0	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.060	1.38	13.2	105.6	132.0	-10～+10	-10～+30	-10～+50	10	12	15
47	B	0.090	0.99	18.8	150.4	188.0	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.060	1.38	18.8	150.4	188.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060	1.62	18.8	150.4	188.0	-10～+10	-10～+30	-10～+50	10	12	15
68	B	0.090	0.99	27.2	217.6	272.0	-10～+10	-10～+30	-10～+50	10	12	15
68	C	0.060	1.38	27.2	217.6	272.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.060	1.62	27.2	217.6	272.0	-10～+10	-10～+30	-10～+50	10	12	15
100	C	0.060	1.38	40.0	320.0	400.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.045	1.87	40.0	320.0	400.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.025	2.62	40.0	320.0	400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	H	0.060	1.47	60.0	480.0	600.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.045	1.87	60.0	480.0	600.0	-10～+10	-10～+30	-10～+50	10	12	15
220	D	0.045	1.87	88.0	704.0	880.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.025	2.62	88.0	704.0	880.0	-10～+10	-10～+30	-10～+50	10	12	15
330	D	0.060*	1.62	132.0	1056.0	1320.0	-10～+10	-10～+30	-10～+50	10	12	15
330	D	0.045	1.87	132.0	1056.0	1320.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.025	2.62	132.0	1056.0	1320.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.040	2.30	132.0	1056.0	1320.0	-10～+10	-10～+30	-10～+50	10	12	15
470	D	0.045	1.87	188.0	1504.0	1880.0	-10～+10	-10～+30	-10～+50	10	12	15
470	E	0.025	2.62	188.0	1504.0	1880.0	-10～+10	-10～+30	-10～+50	10	12	15
470	V	0.040	2.30	188.0	1504.0	1880.0	-10～+10	-10～+30	-10～+50	10	12	15
680	D	0.090*	1.32	272.0	2176.0	2720.0	-10～+10	-10～+30	-10～+50	10	12	15
680	D	0.050	1.77	272.0	2176.0	2720.0	-10～+10	-10～+30	-10～+50	10	12	15
680	E	0.050*	1.85	272.0	2176.0	2720.0	-10～+10	-10～+30	-10～+50	10	12	15
680	E	0.025	2.62	272.0	2176.0	2720.0	-10～+10	-10～+30	-10～+50	10	12	15
680	V	0.025	2.90	272.0	2176.0	2720.0	-10～+10	-10～+30	-10～+50	10	12	15
680	W	0.025	2.93	272.0	2176.0	2720.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 4V												
1000	W	0.025	2.93	400.0	3200.0	4000.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	T	0.025	4.14	600.0	4800.0	6000.0	-10～+10	-10～+30	-10～+50	10	12	15
2200	T	0.025	4.14	880.0	7040.0	8800.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R） 6.3V												
1	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.250	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.250	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.250*	0.56	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.120	0.80	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.100	0.94	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
15	A	0.250	0.56	9.5	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
15	B	0.100	0.94	9.5	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.080	1.20	9.4	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
22	A	0.250	0.56	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
22	B	0.090	0.99	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.060	1.38	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
33	B	0.090	0.99	20.8	166.3	207.9	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.060	1.38	20.8	166.3	207.9	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.060	1.62	20.7	166.3	207.9	-10～+10	-10～+30	-10～+50	10	12	15
47	A	0.250	0.56	29.6	236.8	296.1	-10～+10	-10～+30	-10～+50	10	12	15
47	B	0.090	0.99	29.6	236.9	296.1	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.060	1.38	29.6	236.9	296.1	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060	1.62	29.6	236.8	296.1	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.050	1.85	29.6	236.8	296.1	-10～+10	-10～+30	-10～+50	10	12	15
68	B	0.090	0.99	42.8	342.7	428.4	-10～+10	-10～+30	-10～+50	10	12	15
68	C	0.060	1.38	42.8	342.7	428.4	-10～+10	-10～+30	-10～+50	10	12	15
68	H	0.060	1.47	42.8	342.7	428.4	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.060*	1.62	42.8	342.7	428.4	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.045	1.87	42.8	342.7	428.4	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.060	1.69	42.8	342.7	428.4	-10～+10	-10～+30	-10～+50	10	12	15
100	B	0.090	0.99	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100K Hz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 6.3V												
100	C	0.060	1.38	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
100	H	0.060	1.47	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.060	1.62	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.025	2.62	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.080	1.63	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
150	B	0.090	0.94	94.5	756.0	945.0	-10～+10	-10～+30	-10～+50	10	12	15
150	C	0.060	1.38	94.5	756.0	945.0	-10～+10	-10～+30	-10～+50	10	12	15
150	H	0.060	1.47	94.5	756.0	945.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.045	1.87	94.5	756.0	945.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.060	1.69	94.5	756.0	945.0	-10～+10	-10～+30	-10～+50	10	12	15
220	C	0.060	1.38	138.6	1108.8	1386.0	-10～+10	-10～+30	-10～+50	10	12	15
220	H	0.060	1.47	138.6	1108.8	1386.0	-10～+10	-10～+30	-10～+50	10	12	15
220	D	0.045	1.87	138.6	1108.8	1386.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.025	2.62	138.6	1108.8	1386.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.050	2.06	138.6	1108.8	1386.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.080	1.64	138.6	1108.8	1386.0	-10～+10	-10～+30	-10～+50	10	12	15
330	H	0.060	1.47	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
330	D	0.060*	1.62	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
330	D	0.045	1.87	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.050*	1.85	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.025	2.62	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
330	B	0.050	2.06	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.050	2.08	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
470	D	0.050	1.78	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
470	E	0.050*	1.85	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
470	E	0.025	2.62	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
470	V	0.025	2.90	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
470	W	0.050	2.08	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
680	E	0.050*	1.85	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
680	E	0.025	2.62	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
680	V	0.025	2.90	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
680	W	0.050	2.08	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	V	0.060	1.62	630.0	5040.0	6300.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	W	0.025	2.93	630.0	5040.0	6300.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	T	0.025	4.14	945.0	7560.0	9450.0	-10～+10	-10～+30	-10～+50	10	12	15
2200	T	0.025	4.14	1386.0	11088.0	13860.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R） 10V												
1	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.150	0.59	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 10V												
3.3	B	0.150	0.59	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	A	0.250	0.56	6.8	54.4	68.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.100	0.94	6.8	54.4	68.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	6.8	54.4	68.0	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.250*	0.56	10.0	80.0	100.0	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.120	0.80	10.0	80.0	100.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.100	0.94	10.0	80.0	100.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	10.0	80.0	100.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.090	1.32	10.0	80.0	100.0	-10～+10	-10～+30	-10～+50	10	12	15
15	A	0.250	0.56	15.0	120.0	150.0	-10～+10	-10～+30	-10～+50	10	12	15
15	B	0.090	0.99	15.0	120.0	150.0	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.060	1.38	15.0	120.0	150.0	-10～+10	-10～+30	-10～+50	10	12	15
22	A	0.250	0.56	22.0	176.0	220.0	-10～+10	-10～+30	-10～+50	10	12	15
22	B	0.090	0.99	22.0	176.0	220.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.060	1.38	22.0	176.0	220.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.060	1.62	22.0	176.0	220.0	-10～+10	-10～+30	-10～+50	10	12	15
33	B	0.090	0.99	33.0	264.0	330.0	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.060	1.38	33.0	264.0	330.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.045	1.87	33.0	264.0	330.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.050	1.85	33.0	264.0	330.0	-10～+10	-10～+30	-10～+50	10	12	15
47	B	0.090	0.99	47.0	376.0	470.0	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.060	1.38	47.0	376.0	470.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.045	1.87	47.0	376.0	470.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.050	1.85	47.0	376.0	470.0	-10～+10	-10～+30	-10～+50	10	12	15
68	B	0.090	0.99	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
68	C	0.060	1.38	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
68	H	0.060	1.47	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.045	1.87	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.060	1.85	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
100	B	0.090	0.99	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	C	0.060	1.38	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	H	0.060	1.47	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.060*	1.62	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.045	1.87	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.025	2.62	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.080	1.62	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100K Hz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R） 10V												
150	C	0.060	1.38	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	H	0.060	1.47	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.060*	1.62	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.045	1.87	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.050*	1.85	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.025	2.62	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
220	H	0.060	1.47	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
220	D	0.045	1.87	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.050*	1.85	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.025	2.62	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.050	2.05	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.080	2.93	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
330	D	0.060	1.62	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.050*	1.85	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.025	2.62	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.040*	2.29	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.025	2.90	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.050	2.93	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
470	E	0.050*	1.85	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
470	E	0.025	2.62	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
470	V	0.040*	2.29	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
470	V	0.025	2.90	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
470	W	0.050	2.93	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
680	V	0.040	2.29	680.0	5440.0	6800.0	-10～+10	-10～+30	-10～+50	10	12	15
680	W	0.025	2.93	680.0	5440.0	6800.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.025	4.14	680.0	5440.0	6800.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	W	0.050	2.93	1000.0	8000.0	10000.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	T	0.025	4.14	1000.0	8000.0	10000.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	T	0.025	4.14	1500.0	12000.0	15000.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R） 16V												
1	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.100	0.94	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.100	1.07	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.250	0.56	5.0	42.2	52.8	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.100	0.94	5.3	42.2	52.8	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	5.2	42.2	52.8	-10～+10	-10～+30	-10～+50	10	12	15
4.7	A	0.250	0.56	7.5	60.2	75.2	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.150	0.76	7.5	60.2	75.2	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ +25℃	+85℃	+125℃
rated voltage (U_R） 16V												
4.7	C	0.100	1.07	7.5	60.1	75.2	-10～+10	-10～+30	-10～+50	10	12	15
6.8	A	0.250	0.56	10.9	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.150	0.76	10.9	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	10.8	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.090	1.33	10.8	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.250	0.56	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.150	0.76	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.100*	0.94	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.060	1.38	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.090	1.33	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.080	1.47	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
15	B	0.100	0.94	24.0	192.0	240.0	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.060	1.38	24.0	192.0	240.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.075	1.45	24.0	192.0	240.0	-10～+10	-10～+30	-10～+50	10	12	15
22	B	0.150	0.76	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.060	1.38	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.045	1.87	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.055	1.77	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
33	B	0.150	0.77	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.060	1.38	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	H	0.060	1.47	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.045	1.87	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.050	1.85	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.060	1.38	75.2.	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
47	H	0.060	1.47	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060*	1.62	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.045	1.87	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.50	1.85	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
68	C	0.100	1.07	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.060*	1.62	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.045	1.87	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.050*	1.85	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.025	2.62	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.100	1.45	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
100	C	0.100	1.07	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.060*	1.62	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.045	1.87	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.050*	1.85	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.025	2.62	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100K Hz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ +25℃	+85℃	+125℃
rated voltage (U_R） 16V												
100	V	0.080	1.62	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.060*	1.62	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.045	1.87	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.050*	1.85	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.025	2.62	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	D	0.080	1.41	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.050*	1.85	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.025	2.62	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.040*	2.29	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.025	2.90	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.045	2.19	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.025	2.62	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.025	2.90	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.025	2.93	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
470	W	0.050	2.08	752.0	6016.0	7520.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.025	4.14	752.0	6016.0	7520.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.025	4.14	1088.0	8704.0	10880.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R） 20V												
1	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.150	0.76	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.120	0.98	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.150	0.76	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.120	0.98	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.250	0.56	6.6	52.8	66.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.150	0.76	6.6	52.8	66.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	6.6	52.8	66.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.150	0.76.	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.090	1.33	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.080	1.47	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.150	0.76	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.090	1.33	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.080	1.47	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.150	0.76	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.090	1.33	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.055	1.77	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 20V												
15	C	0.080	1.20	30.0	240.0	300.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.045	1.87	30.0	240.0	300.0	-10～+10	-10～+30	-10～+50	10	12	15
15	E	0.080	1.47	30.0	240.0	300.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.080	1.20	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	H	0.060	1.47	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.060*	1.62	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.045	1.87	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.035	2.22	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.080	1.20	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.045	1.87	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.050*	1.85	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.035	2.22	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
33	V	0.100	1.45	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.150	0.88	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060*	1.62	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.045	1.87	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.050*	1.85	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.035	2.22	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	V	0.100	1.45	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	W	0.100	1.47	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.090	1.33	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.080	1.47	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.100	1.45	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
68	W	0.100	1.47	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.090	1.33	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.080	1.47	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.080	1.62	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.080	1.64	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.080	1.47	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	V	0.080	1.62	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.080	1.64	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.080	1.47	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.080	1.62	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.080	1.64	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R） 25V												
1	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.150	0.76	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.120	0.98	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.250	0.56	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15

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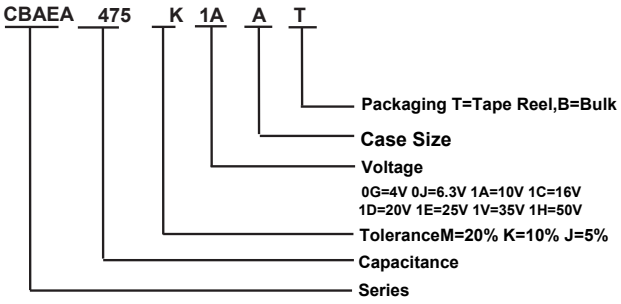
Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R） 25V												
2.2	B	0.150	0.76	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.100	1.07	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.090	1.32	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.150	0.76	8.3	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	8.3	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	D	0.090	1.32	8.2	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.150	0.76	11.8	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	11.8	94.0.	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.090	1.32	11.7	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.080	1.47	11.7	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.150	0.76	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.090	1.32	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.080	1.47	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.300	0.54	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.090*	1.32	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.075	1.44	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.080	1.47	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.100	1.07	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.090*	1.32	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.075	1.44	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
15	E	0.080	1.47	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.100	1.07	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	H	0.090	1.21	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.090*	1.32	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.075	1.44	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.080*	1.47	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.055	1.77	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	V	0.100	1.45	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.090*	1.32	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.075	1.44	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.080*	1.47	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.055	1.77	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	V	0.100	1.45	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	W	0.100	1.47	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.090	1.32	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.090	1.23	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
47	V	0.100	1.45	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max100K Hz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ +25℃	+85℃	+125℃
rated voltage (U_R） 25V												
47	W	0.100	1.47	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.080	1.47	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.100	1.45	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	W	0.100	1.47	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15

PART NUMBER EXAMPLE



CBAEA SERIES **Failure rate grade available**

double 85

FEATURES AND USES

◆ Resin molding packaging, good sealing, sheet type, small volume, light weight, polarity;

◆ Excellent and stable electrical performance, high reliability, good storage stability; conductive polymer electrolyte, ultra-low ESR (equivalent series resistance), high-frequency capacity retention, large ripple current resistance;

◆ High-level breakdown voltage;

◆ Benign failure mode;

◆ Suitable for aircraft, vehicles, ships, radar, electronics, communication and other fields with the reliability requirements of the electronic equipment surface mount DC or pulsation circuit;

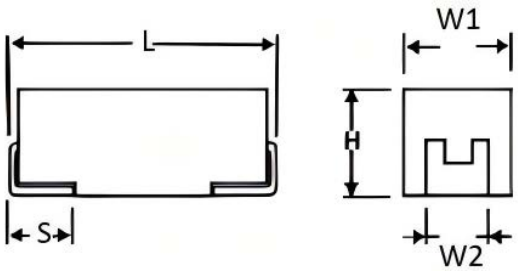
◆ New optional dual 85 products: using new technology, the products have the ability to store and work at high temperature and high humidity for a long time (85℃, 85%RH, 1000h) on the basis of maintaining the original performance.

If users need double 85 products, please indicate them in the order contract.

◆ Implementation standards: GJB2283-95, QJ / PWV502-2012

(Note: When purchasing double 85 products, please note "double 85" in the notes of the order contract)





chat1

BASIC MECHANICAL DESIGN FEATURE

Use temperature range: -55~125C ℃; reduction design see Application Guidance 4.1;
Rated voltage, downrated voltage and nominal capacitance: see Table 2;
allowable allowable capacity: K:±10%; M:±20%;
Room temperature DC leakage current, room temperature loss Angle is cut: do not exceed that specified in Table 2;
Equivalent series resistance ESR (25℃, 100KHz): not exceeding that specified in Table 2;
Marked "*" means the default delivery ESR, not marked "*", the ESR value is a special customization, the order should be noted in the order;
Overall dimensions and shell code: see Figure 1 and Table 1.

Table 1 Overall dimensions of the capacitors (mm)

hull	L	W_1	H	S	W_2
A	3.2±0.3	1.6±0.3	1.6±0.3	0.8±0.2	1.2±0.2
B	3.5±0.3	2.8±0.3	1.9±0.3	0.8±0.2	2.2±0.2
C	6.0±0.3	3.2±0.3	2.5±0.3	1.3±0.2	2.2±0.2
H	7.3±0.3	4.3±0.3	2.1±0.3	1.7±0.2	2.4±0.2
D	7.3±0.3	4.3±0.3	2.8±0.3	1.5±0.2	2.4±0.2
E	7.3±0.3	4.3±0.3	4.1±0.3	1.5±0.2	2.4±0.2
F	7.3±0.3	6.1±0.3	2.5±0.3	1.35±0.2	3.0±0.2
V	7.3±0.3	6.1±0.3	3.6±0.3	1.5±0.2	3.0±0.2
W	7.3±0.3.	6.1±0.3	4.1±0.3	1.5±0.2	3.0 S. 0.2
X	7.3±0.3	6.0±0.3	6.0±0.3	1.5±0.2	4.0±0.2
Z	7.3±0.3	6.0±0.3	8.0±0.3	1.5±0.2	4.0±0.2
G	8.5±0.3	7.5±0.3	4.5±0.3	1.8±0.2	4.5±0.2
S	11.0±0.3	9.0±0.3	4.5±0.3	1.5±0.2	10.5±0.4
T	11.0±0.3	12.5±0.3	5.5±0.3	2.1±0.2	10.5±0.4
Y	8.0±0.3	12.0±0.3	8.0±0.3	1.4±0.2	8.0±0.4

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R （μF）	shell Number	ESR max 100KHz （Ω）	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R） 16V												
1	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.500	0.28	5.2	42.2	52.8	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.300	0.54	5.3	42.2	52.8	-10～+10	-10～+30	-10～+50	10	12	15
4.7	A	0.500	0.28	7.5	60.1	75.2	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.300	0.54	7.5	60.2	75.2	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	7.5	60.2	75.2	-10～+10	-10～+30	-10～+50	10	12	15
6.8	A	0.500	0.28	10.8	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.300	0.54	10.9	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	10.9	87.0	108.8	-10～+10	-10～+30	-10～+50	10	12	15
10	A	0.500	0.28	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.300	0.54	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	16.0	128.0	160.0	-10～+10	-10～+30	-10～+50	10	12	15
15	B	0.300	0.54	24.0	192.0	240.0	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.100	1.07	24.0	192.0	240.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.060	1.62	24.0	192.0	240.0	-10～+10	-10～+30	-10～+50	10	12	15
18	C	0.100	1.07	28.8	230.4	288.0	-10～+10	-10～+30	-10～+50	10	12	15
18	D	0.060	1.62	28.8	230.4	288.0	-10～+10	-10～+30	-10～+50	10	12	15
18	E	0.060	1.69	28.8	230.4	288.0	-10～+10	-10～+30	-10～+50	10	12	15
22	B	0.300	0.54	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.150*	0.87	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.100	1.07	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.060	1.62	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.060	1.69	35.2	281.6	352.0	-10～+10	-10～+30	-10～+50	10	12	15
33	B	0.300	0.54	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.100	1.07	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.060	1.62	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.060	1.69	52.8	422.4	528.0	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.100	1.07	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060	1.62	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.060	1.69	75.2	601.6	752.0	-10～+10	-10～+30	-10～+50	10	12	15
68	C	0100	1.07	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.060	1.62	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.060	1.69	108.8	870.4	1088.0	-10～+10	-10～+30	-10～+50	10	12	15
100	C	0.100	1.07	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 16V												
100	D	0.080*	1.40	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.060	1.62	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.080*	1.47	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.060	1.69.	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.080	1.62	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
100	S	0.080	2.32	160.0	1280.0	1600.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.080*	1.40	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	D	0.060	1.62	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.080*	1.47	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.060	1.69.	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	V	0.060	1.87	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.060	1.89	240.0	1920.0	2400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	D	0.080	1.40	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.080*	1.47	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.060	1.69	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.060	1.87	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.060	1.89	352.0	2816.0	3520.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.080*	1.47	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.060*	1.69	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	E	0.025	2.62	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.080*	1.62	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.060	1.87	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.080*	1.63	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.060	1.89	528.0	4224.0	5280.0	-10～+10	-10～+30	-10～+50	10	12	15
470	V	0.080	1.62	752.0	6016.0	7520.0	-10～+10	-10～+30	-10～+50	10	12	15
470	W	0.060	1.89	752.0	6016.0	7520.0	-10～+10	-10～+30	-10～+50	10	12	15
470	X	0.080	1.98	752.0	6016.0	7520.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.060	2.67	752.0	6016.0	7520.0	-10～+10	-10～+30	-10～+50	10	12	15
680	W	0.080	1.63	1088.0	8704.0	10880.0	-10～+10	-10～+30	-10～+50	10	12	15
680	X	0.080	1.98	1088.0	8704.0	10880.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.040	3.28	1088.0	8704.0	10880.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	T	0.080	2.31	1600.0	12800.0	16000.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	T	0.040	3.28	1600.0	12800.0	16000.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	T	0.080*	2.31	2400.0	19200.0	24000.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	T	0.040	3.28	2400.0	19200.0	24000.0	-10～+10	-10～+30	-10～+50	10	12	15
2200	T	0.080*	2.31	3520.0	28160.0	35200.0	-10～+10	-10～+30	-10～+50	10	12	15
2200	T	0.040	3.28	3520.0	28160.0	35200.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R) 20V												
1	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 20V												
1.5	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	A	0.500	0.28.	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	A	0.500	0.28	6.6	52.8	66.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.300	0.54	6.6	52.8	66.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	6.6	52.8	66.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.300	0.54	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.075	1.45	9.4	75.2	94.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.300	0.54	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.075	1.45	13.6	108.8	136.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.300	0.54	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.150*	0.87	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.075	1.45	20.0	160.0	200.0	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.150*	0.87	30.0	240.0	300.0	-10～+10	-10～+30	-10～+50	10	12	15
5	C	0.100	1.07	30.0	240.0	300.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.060	1.62	30.0	240.0	300.0	-10～+10	-10～+30	-10～+50	10	12	15
18	C	0.100	1.07	36.0	288.0	360.0	-10～+10	-10～+30	-10～+50	10	12	15
18	D	0.060	1.62	36.0	288.0	360.0	-10～+10	-10～+30	-10～+50	10	12	15
18	E	0.060	1.69	36.0	288.0	360.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.100	1.07	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.060	1.62	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.080*	1.47	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.060	1.69	44.0	352.0	440.0	-10～+10	-10～+30	-10～+50	10	12	15
33	C	0.100	1.07	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.060	1.62	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.060	1.69	66.0	528.0	660.0	-10～+10	-10～+30	-10～+50	10	12	15
47	C	0.100	1.07	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.080*	1.40	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060	1.62	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.060	1.69	94.0	752.0	940.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.080*	1.40	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.060	1.62	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.060	1.69	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.060	1.87	136.0	1088.0	1360.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.080	1.41	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.080*	1.47	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 20V												
100	E	0.060	1.69	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.060	1.87	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.080	1.63	200.0	1600.0	2000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.080*	1.47	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	E	0.060	1.69	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	V	0.080*	1.62	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	V	0.060	1.87	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.080*	1.63	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.060	1.89	300.0	2400.0	3000.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.080*	1.47	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	E	0.060	1.69	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.080*	1.62	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.060	1.87	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.080*	1.63	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.060	1.89	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
220	X	0.080	1.97	440.0	3520.0	4400.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.080*	1.62	660.0	5280.0	6600.0	-10～+10	-10～+30	-10～+50	10	12	15
330	V	0.060	1.87	660.0	5280.0	6600.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.060	1.89	660.0	5280.0	6600.0	-10～+10	-10～+30	-10～+50	10	12	15
330	X	0.080	1.97	660.0	5280.0	6600.0	-10～+10	-10～+30	-10～+50	10	12	15
470	X	0.080*	1.97	940.0	7520.0	9400.0	-10～+10	-10～+30	-10～+50	10	12	15
470	X	0.040	2.79	940.0	7520.0	9400.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.040	3.28	940.0	7520.0	9400.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.080*	2.31	1360.0	10880.0	13600.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.040	3.28	1360.0	10880.0	13600.0	-10～+10	-10～+30	-10～+50	10	12	15
680	Y	0.04.	3.29	1360.0	10880.0	13600.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	T	0.080*	2.31	2000.0	16000.0	20000.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	T	0.040	3.28	2000.0	16000.0	20000.0	-10～+10	-10～+30	-10～+50	10	12	15
1000	Y	0.040	3.29	2000.0	16000.0	20000.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	T	0.040	3.28	3000.0	24000.0	30000.0	-10～+10	-10～+30	-10～+50	10	12	15
1500	Y	0.040	3.29	3000.0	24000.0	30000.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R) 25V												
0.68	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.150	0.87	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	B	0.300	0.54	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.150	0.87	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 25V												
2.2	B	0.300	0.54	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.150	0.87	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.120	1.15	5.5	44.0	55.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.300	0.54	8.3	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.150*	0.87	8.3	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	8.3	66.0	82.5.	-10～+10	-10～+30	-10～+50	10	12	15
3.3	D	0.100	1.26	8.2	66.0	82.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.300	0.54	11.8	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.150*	0.87	11.8	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	11.8	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.075	1.45	11.7	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.120	1.21	11.7	94.0	117.5	-10～+10	-10～+30	-10～+50	10	12	15
6.8	B	0.300	0.54	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.150*	0.87	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.075	1.45	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.120	1.21	17.0	136.0	170.0	-10～+10	-10～+30	-10～+50	10	12	15
10	B	0.300	0.54	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.150*	0.87	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.075	1.45	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.075	1.52	25.0	200.0	250.0	-10～+10	-10～+30	-10～+50	10	12	15
15	C	0.100	1.07	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.060	1.62	37.5.	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
15	E	0.075	1.52	37.5	300.0	375.0	-10～+10	-10～+30	-10～+50	10	12	15
18	C	0.100	1.07	45.0	360.0	450.0	-10～+10	-10～+30	-10～+50	10	12	15
18	D	0.060	1.62	45.0	360.0	450.0	-10～+10	-10～+30	-10～+50	10	12	15
18	E	0.060	1.69	45.0	360.0	450.0	-10～+10	-10～+30	-10～+50	10	12	15
22	C	0.100	1.07	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.080*	1.40	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.060	1.62	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.060	1.69	55.0	440.0	550.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.080*	1.40	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.060	1.62	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.080*	1.47	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.060	1.69	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
33	V	0.090	1.53	82.5	660.0	825.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.080*	1.40	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.060	1.62	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 25V												
47	E	0.080*	1.47	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.060	1.69	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
47	V	0.080	1.62	117.5	940.0	1175.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.080*	1.40	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	D	0.060	1.62	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.080*	1.47	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.060	1.69	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.080*	1.62	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.060	1.87	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	W	0.080	1.63	170.0	1360.0	1700.0	-10～+10	-10～+30	-10～+50	10	12	15
100	D	0.080	1.40	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.080*	1.47	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	E	0.060	1.69	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.080*	1.62	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	V	0.060	1.87	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.080*	1.63	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.060	1.89	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.080	2.31	250.0	2000.0	2500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	V	0.080*	1.62	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
150	V	0.060	1.87	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.080*	1.63	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.060	1.89	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
150	T	0.060	2.67	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
220	V	0.060	1.87	550.0	4400.0	5500.0	-10～+10	-10～+30	-10～+50	10	12	15
220	W	0.080	1.63	550.0	4400.0	5500.0	-10～+10	-10～+30	-10～+50	10	12	15
220	X	0.080*	1.97	550.0	4400.0	5500.0	-10～+10	-10～+30	-10～+50	10	12	15
220	X	0.060	2.27	550.0	4400.0	5500.0	-10～+10	-10～+30	-10～+50	10	12	15
220	T	0.060	2.67	550.0	4400.0	5500.0	-10～+10	-10～+30	-10～+50	10	12	15
330	W	0.080	1.63	825.0	6600.0	8250.0	-10～+10	-10～+30	-10～+50	10	12	15
330	X	0.080*	1.97	825.0	6600.0	8250.0	-10～+10	-10～+30	-10～+50	10	12	15
330	X	0.060	2.27	825.0	6600.0	8250.0	-10～+10	-10～+30	-10～+50	10	12	15
330	T	0.060	2.67	825.0	6600.0	8250.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.080*	2.31	1175.0	9400.0	11750.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.060	2.67	1175.0	9400.0	11750.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.080*	2.31	1700.0	13600.0	17000.0	-10～+10	-10～+30	-10～+50	10	12	15
680	T	0.060	2.67	1700.0	13600.0	17000.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R) 35V												
0.1	A	0.600	0.26	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.1	B	0.600	0.39	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 35V												
0.47	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.47	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	C	0.200	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	A	0.500	0.28	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.200*	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.100	1.07	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	B	0.350	0.50	5.3	42.0	52.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.200*	0.75	5.3	42.0	52.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.100	1.07	5.3	42.0	52.5	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.350	0.50	7.7	61.6	77.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.200*	0.75	7.7	61.6	77.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.100	1.07	7.7	61.6	77.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.120	1.15	7.7	61.6	77.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	B	0.350	0.50	11.6	92.4	115.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.200*	0.75	11.6.	92.4	115.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	11.6	92.4	115.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	D	0.100	1.26	11.5	92.4	115.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	B	0.350	0.50	16.5	131.6	164.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.200*	0.75	16.5	131.6	164.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	16.5	131.6	164.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.120	1.15	16.4	131.6	164.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.120	1.20	16.4	131.6	164.5	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.200*	0.75	23.8	190.4	238.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	23.8	190.4	238.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.075	1.44	23.8	190.4	238.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.120	1.20	23.8	190.4	238.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.200*	0.75	35.0	280.0	350.0	-10～+10	-10～+30	-10～+50	10	12	15
10	C	0.100	1.07	35.0	280.0	350.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.090*	1.32	35.0	280.0	350.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.075	1.44	35.0	280.0	350.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.075	1.51	35.0	280.0	350.0	-10～+10	-10～+30	-10～+50	10	12	15
10	V	0.120	1.33	35.0	280.0	350.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.090*	1.32	52.5	420.0	525.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.075	1.44	52.5	420.0	525.0	-10～+10	-10～+30	-10～+50	10	12	15
15	E	0.075	1.51	52.5	420.0	525.0	-10～+10	-10～+30	-10～+50	10	12	15
15	V	0.100	1.46	52.5	420.0	525.0	-10～+10	-10～+30	-10～+50	10	12	15
18	D	0.075	1.44	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
18	E	0.075	1.51	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
18	V	0.100	1.46	63.0	504.0	630.0	-10～+10	-10～+30	-10～+50	10	12	15
22	H	0.090	1.14	77.0	616.0	770.0	-10～+10	-10～+30	-10～+50	10	12	15

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Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R) 35V												
22	D	0.090*	1.32	77.0	616.0	770.0	-10～+10	-10～+30	-10～+50	10	12	15
22	D	0.075	1.44	77.0	616.0	770.0	-10～+10	-10～+30	-10～+50	10	12	15
22	E	0.075	1.51	77.0	616.0	770.0	-10～+10	-10～+30	-10～+50	10	12	15
22	V	0.070	1.74	77.0	616.0	770.0	-10～+10	-10～+30	-10～+50	10	12	15
22	W	0.120	1.34	77.0	616.0	770.0	-10～+10	-10～+30	-10～+50	10	12	15
33	D	0.090	1.32	115.5	924.0	1155.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.090*	1.38	115.5	924.0	1155.0	-10～+10	-10～+30	-10～+50	10	12	15
33	E	0.075	1.51	115.5	924.0	1155.0	-10～+10	-10～+30	-10～+50	10	12	15
33	V	0.075	1.67	115.5	924.0	1155.0	-10～+10	-10～+30	-10～+50	10	12	15
33	W	0.080	1.64	115.5	924.0	1155.0	-10～+10	-10～+30	-10～+50	10	12	15
47	D	0.090	1.32	164.5	1316.0	1645.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.090*	1.38	164.5	1316.0	1645.0	-10～+10	-10～+30	-10～+50	10	12	15
47	E	0.075	1.51	164.5	1316.0	1645.0	-10～+10	-10～+30	-10～+50	10	12	15
47	V	0.090*	1.53	164.5	1316.0	1645.0	-10～+10	-10～+30	-10～+50	10	12	15
47	V	0.075	1.67	164.5	1316.0	1645.0	-10～+10	-10～+30	-10～+50	10	12	15
47	W	0.090*	1.54	164.5	1316.0	1645.0.	-10～+10	-10～+30	-10～+50	10	12	15
47	W	0.075	1.69	164.5	1316.0	1645.0	-10～+10	-10～+30	-10～+50	10	12	15
68	E	0.090	1.38	238.0	1904.0	2380.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.090*	1.53	238.0	1904.0	2380.0	-10～+10	-10～+30	-10～+50	10	12	15
68	V	0.075	1.67	238.0	1904.0	2380.0	-10～+10	-10～+30	-10～+50	10	12	15
68	W	0.090*	1.54	238.0	1904.0	2380.0	-10～+10	-10～+30	-10～+50	10	12	15
68	W	0.060	1.89	238.0	1904.0	2380.0	-10～+10	-10～+30	-10～+50	10	12	15
68	T	0.100	2.07	238.0	1904.0	2380.0	-10～+10	-10～+30	-10～+50	10	12	15
100	F	0.09	1.28	350	2800.0	3500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.090*	1.54	350.0	2800.0	3500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.060	1.89	350.0	2800.0	3500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.090*	2.18	350.0	2800.0	3500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.050	2.93	350.0	2800.0	3500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	W	0.090	1.54	525.0	4200.0	5250.0	-10～+10	-10～+30	-10～+50	10	12	15
150	X	0.090*	1.86	525.0	4200.0	5250.0	-10～+10	-10～+30	-10～+50	10	12	15
150	X	0.050	2.49	525.0	4200.0	5250.0	-10～+10	-10～+30	-10～+50	10	12	15
150	T	0.090*	2.18	525.0	4200.0	5250.0	-10～+10	-10～+30	-10～+50	10	12	15
150	T	0.050	2.93	525.0	4200.0	5250.0	-10～+10	-10～+30	-10～+50	10	12	15
220	X	0.090*	2.18	770.0	6160.0	7700.0	-10～+10	-10～+30	-10～+50	10	12	15
220	X	0.050	2.93	770.0	6160.0	7700.0	-10～+10	-10～+30	-10～+50	10	12	15
220	T	0.090	2.18	770.0	6160.0	7700.0	-10～+10	-10～+30	-10～+50	10	12	15
330	T	0.090*	2.18	1155.0	9240.0	11550.0	-10～+10	-10～+30	-10～+50	10	12	15
330	T	0.050	2.93	1155.0	9240.0	11550.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.090*	2.18	1645.0	13160.0	16450.0	-10～+10	-10～+30	-10～+50	10	12	15
470	T	0.050	2.93	1645.0	13160.0	16450.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 50V												
0.47	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.47	C	0.200	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	C	0.200*	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	C	0.100	1.07	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	B	0.350	0.50	5.0	40.0	50.0 .	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.200*	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.100	1.07	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	D	0.120	1.15	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	B	0.350	0.50	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.200*	0.75	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.100	1.07	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	B	0.350	0.50	11.0	88.0	110.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.200*	0.75	11.0	88.0	110.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.100	1.07	11.0	88.0	110.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.120	1.15	11.0	88.0	110.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	E	0.150	1.07	11.0	88.0	110.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.200*	0.75	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.100	1.07	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	H	0.100	1.09	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	D	0.100*	1.25	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	D	0.080	1.40	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	E	0.120	1.20	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.200*	0.75	23.5	188.0	235.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	C	0.100	1.07	23.5	188.0	235.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	H	0.100	1.09	23.5	188.0	235.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.100*	1.25	23.5	188.0	235.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.080	1.40	23.5	188.0	235.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.120	1.20	23.5	188.0	235.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.200*	0.75	34.0	272.0	340.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	C	0.100	1.07	34.0	272.0	340.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	H	0.100	1.09	34.0	272.0	340.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.100*	1.25	34.0	272.0	340.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.080	1.40	34.0	272.0	340.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.120	1.20	34.0	272.0	340.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.100*	1.25	50.0	400.0	500.0	-10～+10	-10～+30	-10～+50	10	12	15
10	D	0.080	1.40	50.0	400.0	500.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.100*	1.31	50.0	400.0	500.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.080	1.47	50.0	400.0	500.0	-10～+10	-10～+30	-10～+50	10	12	15
10	V	0.120	1.32	50.0	400.0	500.0	-10～+10	-10～+30	-10～+50	10	12	15
10	W	0.120	1.34	50.0	400.0	500.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μA)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 50V												
15	D	0.100	1.25	75.0	600.0	750.0	-10~+10	-10~+30	-10~+50	10	12	15
15	E	0.100*	1.31	75.0	600.0	750.0	-10~+10	-10~+30	-10~+50	10	12	15
15	E	0.080	1.47	75.0	600.0	750.0	-10~+10	-10~+30	-10~+50	10	12	15
15	V	0.100*	1.45	75.0	600.0	750.0	-10~+10	-10~+30	-10~+50	10	12	15
15	V	0.080	1.62	75.0	600.0	750.0	-10~+10	-10~+30	-10~+50	10	12	15
18	W	0.120	1.34	90.0	720.0	900.0	-10~+10	-10~+30	-10~+50	10	12	15
18	D	0.100	1.25	90.0	720.0	900.0	-10~+10	-10~+30	-10~+50	10	12	15
18	E	0.100*	1.31	90.0	720.0	900.0	-10~+10	-10~+30	-10~+50	10	12	15
18	E	0.080	1.47	90.0	720.0	900.0	-10~+10	-10~+30	-10~+50	10	12	15
18	V	0.100*	1.45	90.0	720.0	900.0	-10~+10	-10~+30	-10~+50	10	12	15
18	V	0.080	1.62	90.0	720.0	900.0	-10~+10	-10~+30	-10~+50	10	12	15
22	D	0.100	1.25	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
22	E	0.100*	1.31	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
22	E	0.070	1.57	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
22	V	0.100*	1.45	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
22	V	0.070	1.73	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
22	W	0.100*	1.46	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
22	W	0.070	1.75	110.0	880.0	1100.0	-10~+10	-10~+30	-10~+50	10	12	15
33	E	0.100*	1.31	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
33	E	0.070	1.57	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
33	V	0.100*	1.45	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
33	V	0.080	1.62	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
33	W	0.100*	1.46	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
33	W	0.080	1.63	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
47	E	0.100*	1.31	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	E	0.070	1.57	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	V	0.100*	1.45	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	V	0.070	1.73	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	W	0.100*	1.46	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	W	0.060	1.89	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	X	0.100	1.76	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	T	0.100*	2.07	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
47	T	0.060	2.67	235.0	1880.0	2350.0	-10~+10	-10~+30	-10~+50	10	12	15
68	V	0.100	1.45	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
68	W	0.100*	1.46	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
68	W	0.060	1.89	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
68	X	0.100*	1.76	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
68	X	0.060	2.27	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
68	T	0.100*	2.07	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
68	T	0.060	2.67	340.0	2720.0	3400.0	-10~+10	-10~+30	-10~+50	10	12	15
75	W	0.100*	1.76	375.0	3000.0	3750.0	-10~+10	-10~+30	-10~+50	10	12	15
75	W	0.060	2.27	375.0	3000.0	3750.0	-10~+10	-10~+30	-10~+50	10	12	15
75	X	0.100*	1.76	375.0	3000.0	3750.0	-10~+10	-10~+30	-10~+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 50V												
75	X	0.060	2.27	375.0	3000.0	3750.0	-10～+10	-10～+30	-10～+50	10	12	15
100	W	0.100	1.46	500.0	4000.0	5000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	X	0.100*	2.27	500.0	4000.0	5000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	X	0.060	2.07	500.0	4000.0	5000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.100*	2.67	500.0	4000.0	5000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.060	1.96	500.0	4000.0	5000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	S	0.100	1.76	500.0	6000.0	5000.0	-10～+10	-10～+30	-10～+50	10	12	15
150	X	0.100	2.07	750.0	6000.0	7500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	T	0.100*	2.67	750.0	6000.0	7500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	T	0.060	2.08	750.0	6000.0	7500.0	-10～+10	-10～+30	-10～+50	10	12	15
150	Y	0.100	1.88	750.0	8800.0	7500.0	-10～+10	-10～+30	-10～+50	10	12	15
220	Z	0.100	2.07	1100.0	8800.0	11000.0	-10～+10	-10～+30	-10～+50	10	12	15
220	T	0.100	2.07	1100.0	8800.0	11000.0	-10～+10	-10～+30	-10～+50	10	12	15
220	Y	0.100	2.07	1100.0	13200.0	11000.0	-10～+10	-10～+30	-10～+50	10	12	15
330	T	0.1	2.08	1650.0	13200.0	16500.0	-10～+10	-10～+30	-10～+50	10	12	15
330	Y	0.1	2.27	1650.0	3000.0	16500.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R) 63V												
0.47	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.47	C	0.200*	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.47	C	0.120	0.98	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	C	0.200*	0.75	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	C	0.120	0.98	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.200*	0.75	6.3	50.4.	63.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.120	0.98	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
1	D	0.120*	1.14	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
1	D	0.100	1.25	6.3	50.4	63.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.200*	0.75	9.5	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.120	0.98	9.5	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	D	0.120*	1.14	9.5	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	D	0.100	1.25	9.5	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	E	0.150	1.08	9.4	75.6	94.5	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.200*	0.75	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.120	0.98	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.120*	1.14	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.100	1.25	13.9	110.9	138.6	-10～+10	-10～+30	-10～+50	10	12	15
2.2	E	0.150	1.08	13.8	110.8	138.6	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.200*	0.75	20.8	166.3	207.9	-10～+10	-10～+30	-10～+50	10	12	15
3.3	C	0.120	0.98	20.8	166.3	207.9	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μA)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 63V												
3.3	D	0.120*	1.14	20.8	166.3	207.9	-10~+10	-10~+30	-10~+50	10	12	15
3.3	D	0.100	1.25	20.8	166.3	207.9	-10~+10	-10~+30	-10~+50	10	12	15
3.3	E	0.120	1.20	20.7	166.3	207.9	-10~+10	-10~+30	-10~+50	10	12	15
4.7	D	0.120*	1.14	29.6	236.9	296.1	-10~+10	-10~+30	-10~+50	10	12	15
4.7	D	0.100	1.25	29.6	236.9	296.1	-10~+10	-10~+30	-10~+50	10	12	15
4.7	E	0.120*	1.20	29.6	236.9	296.1	-10~+10	-10~+30	-10~+50	10	12	15
4.7	E	0.080	1.47	29.6	236.9	296.1	-10~+10	-10~+30	-10~+50	10	12	15
4.7	V	0.120	1.32	29.6	236.8	296.1	-10~+10	-10~+30	-10~+50	10	12	15
6.8	D	0.120*	1.14	42.8	342.7	428.4	-10~+10	-10~+30	-10~+50	10	12	15
6.8	D	0.100	1.25	42.8	342.7	428.4	-10~+10	-10~+30	-10~+50	10	12	15
6.8	E	0.120*	1.20	42.8	342.7	428.4	-10~+10	-10~+30	-10~+50	10	12	15
6.8	E	0.080	1.47	42.8	342.7	428.4	-10~+10	-10~+30	-10~+50	10	12	15
6.8	V	0.120	1.32	42.8	342.7	428.4	-10~+10	-10~+30	-10~+50	10	12	15
10	D	0.120*	1.14	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	D	0.100	1.25	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	E	0.120*	1.20	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	E	0.080	1.47	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	V	0.120*	1.32	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	V	0.080	1.62	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	W	0.120	1.33	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
10	S	0.120	1.79	63.0	504.0	630.0	-10~+10	-10~+30	-10~+50	10	12	15
15	E	0.120*	1.20	94.5	756.0	945.0	-10~+10	-10~+30	-10~+50	10	12	15
15	E	0.080	1.47	94.5	756.0	945.0	-10~+10	-10~+30	-10~+50	10	12	15
15	V	0.120*	1.32	94.5	756.0	945.0	-10~+10	-10~+30	-10~+50	10	12	15
15	V	0.080	1.62	94.5	756.0	945.0	-10~+10	-10~+30	-10~+50	10	12	15
15	W	0.120*	1.33	94.5	756.0	945.0	-10~+10	-10~+30	-10~+50	10	12	15
15	W	0.080	1.63	94.5	756.0	945.0	-10~+10	-10~+30	-10~+50	10	12	15
18	E	0.120*	1.20	113.4	907.2	1134.0	-10~+10	-10~+30	-10~+50	10	12	15
18	E	0.080	1.47	113.4	907.2	1134.0	-10~+10	-10~+30	-10~+50	10	12	15
18	V	0.120*	1.32	113.4	907.2	1134.0	-10~+10	-10~+30	-10~+50	10	12	15
18	V	0.080	1.62	113.4	907.2	1134.0	-10~+10	-10~+30	-10~+50	10	12	15
18	W	0.120*	1.33	113.4	907.2	1134.0	-10~+10	-10~+30	-10~+50	10	12	15
18	W	0.080	1.63	113.4	907.2	1134.0	-10~+10	-10~+30	-10~+50	10	12	15
22	V	0.120	1.32	138.6	1108.8	1386.0	-10~+10	-10~+30	-10~+50	10	12	15
22	W	0.120*	1.33	138.6	1108.8	1386.0	-10~+10	-10~+30	-10~+50	10	12	15
22	W	0.080	1.63	138.6	1108.8	1386.0	-10~+10	-10~+30	-10~+50	10	12	15
22	X	0.120	1.62	138.6	1108.8	1386.0	-10~+10	-10~+30	-10~+50	10	12	15
22	T	0.120*	1.89	138.6	1108.8	1386.0	-10~+10	-10~+30	-10~+50	10	12	15
22	T	0.080	2.31	138.6	1108.8	1386.0	-10~+10	-10~+30	-10~+50	10	12	15
33	W	0.120*	1.33	207.9	1663.2	2079.0	-10~+10	-10~+30	-10~+50	10	12	15
33	W	0.080	1.63	207.9	1663.2	2079.0	-10~+10	-10~+30	-10~+50	10	12	15
33	X	0.120	1.62	207.9	1663.2	2079.0	-10~+10	-10~+30	-10~+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 63V												
33	T	0.120*	1.89	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
33	T	0.080	2.31	207.9	1663.2	2079.0	-10～+10	-10～+30	-10～+50	10	12	15
47	V	0.120	1.32	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
47	W	0.120	1.33	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
47	X	0.120	1.62	296.1	2368 .8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
47	G	0.120	1.64	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
47	T	0.120*	1.89	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
47	T	0.080	2.31	296.1	2368.8	2961.0	-10～+10	-10～+30	-10～+50	10	12	15
68	W	0.120	1.33	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
68	X	0.090	1.86	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
68	G	0.120	1.64	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
68	T	0.120*	1.89	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
68	T	0.080	2.31	428.4	3427.2	4284.0	-10～+10	-10～+30	-10～+50	10	12	15
75	W	0.120	1.33	472.5	3780.0	4725.0	-10～+10	-10～+30	-10～+50	10	12	15
100	X	0.100	1.76	630.0	5040.0	6300.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.120*	1.89	630.0	5040.0	6300.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.080	2.31	630.0	5040.0	6300.0	-10～+10	-10～+30	-10～+50	10	12	15
100	Y	0.120	1.90	630.0	5040.0	6300.0	-10～+10	-10～+30	-10～+50	10	12	15
150	X	0.100	1.76	945.0	7560.0	9450.0	-10～+10	-10～+30	-10～+50	10	12	15
150	T	0.100	2.07	945.0	7560.0	9450.0	-10～+10	-10～+30	-10～+50	10	12	15
220	Z	0.100	1.88	1386.0	11088.0	13860.0	-10～+10	-10～+30	-10～+50	10	12	15
220	T	0.100	2.07	1386.0	11088.0	13860.0	-10～+10	-10～+30	-10～+50	10	12	15
220	Y	0.100	2.08	1386.0	11088.0	13860.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R) 75V												
0.47	B	0.350	0.50	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.47	C	0.250	0.67	5.0	40.0	50.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	B	0.350	0.50	5.1	40.8	51.0	-10～+10	-10～+30	-10～+50	10	12	15
0.68	C	0.250	0.67	5.1	40.8	51.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.250*	0.67	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1	C	0.120	0.98	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1	D	0.120*	1.14	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1	D	0.100	1.25	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1	E	0.150	1.08	7.5	60.0	75.0	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.250*	0.67	11.2	90.0	112.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	C	0.120	0.98	11.2	90.0	112.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	D	0.120*	1.14	11.2	90.0	112.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	D	0.100	1.25	11.2	90.0	112.5	-10～+10	-10～+30	-10～+50	10	12	15
1.5	E	0.150	1.08	11.2	90.0	112.5	-10～+10	-10～+30	-10～+50	10	12	15
2.2	C	0.250*	0.67	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 75V												
2.2	C	0.120	0.98	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.120*	1.14	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	D	0.100	1.25	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
2.2	E	0.150	1.08	16.5	132.0	165.0	-10～+10	-10～+30	-10～+50	10	12	15
3.3	D	0.120	1.14	24.7	198.0	247.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	E	0.120*	1.20	24.7	198.0	247.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	E	0.100	1.31	24.7	198.0	247.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	V	0.150	1.19	24.7	198.0	247.5	-10～+10	-10～+30	-10～+50	10	12	15
3.3	W	0.150	1.19	24.7	198.0	247.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.120	1.14	35.2	282.0	352.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.120*	1.20	35.2	282.0	352.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.100	1.31	35.2	282.0	352.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	V	0.120*	1.32	35.2	282.0	352.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	V	0.100	1.45	35.2	282.0	352.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	W	0.150	1.19	35.2	282.0	352.5	-10～+10	-10～+30	-10～+50	10	12	15
6.8	D	0.120	1.14	51.0	408.0	510.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.120*	1.20	51.0	408.0	510.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.100	1.31	51.0	408.0	510.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	V	0.120*	1.32	51.0	408.0	510.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	V	0.100	1.45	51.0	408.0	510.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	W	0.150	1.19	51.0	408.0	510.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.120*	1.20	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.100	1.31	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	V	0.120*	1.32	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	V	0.100	1.45	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	W	0.120*	1.33	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	W	0.100	1.46	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	S	0.150	1.60	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
10	T	0.120	1.89	75.0	600.0	750.0	-10～+10	-10～+30	-10～+50	10	12	15
15	D	0.120	1.14	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	E	0.120	1.20	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	V	0.120	1.32	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	W	0.120*	1.33	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	W	0.100	1.46	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	X	0.120	1.61	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	T	0.120*	1.89	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
15	T	0.100	2.07	112.5	900.0	1125.0	-10～+10	-10～+30	-10～+50	10	12	15
18	E	0.120	1.20	135.0	1080.0	1350.0	-10～+10	-10～+30	-10～+50	10	12	15
18	V	0.120	1.32	135.0	1080.0	1350.0	-10～+10	-10～+30	-10～+50	10	12	15
18	W	0.120	1.33	135.0	1080.0	1350.0	-10～+10	-10～+30	-10～+50	10	12	15
18	S	0.150	1.60	135.0	1080.0	1350.0	-10～+10	-10～+30	-10～+50	10	12	15
18	T	0.120*	1.89	135.0	1080.0	1350.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μA)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 75V												
18	T	0.100	2.07	135.0	1080.0	1350.0	-10~+10	-10~+30	-10~+50	10	12	15
22	V	0.200	1.02	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
22	W	0.120*	1.33	165.0	1320.0	1 650.0	-10~+10	-10~+30	-10~+50	10	12	15
22	W	0.100	.1.46	165.0	1320.0	1 650.0	-10~+10	-10~+30	-10~+50	10	12	15
22	X	0.120*	1.61	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
22	X	0.100	1.76	165.0	1320.0	1 650.0	-10~+10	-10~+30	-10~+50	10	12	15
22	T	0.120*	1.89	165.0	1320.0	1650.0	-10~+10	-10~+30	-10~+50	10	12	15
22	T	0.100	2.07	165.0	1320.0	1 650.0	-10~+10	-10~+30	-10~+50	10	12	15
33	W	0.120	1.33	247.5	1980.0	2475.0	-10~+10	-10~+30	-10~+50	10	12	15
33	X	0.120	1.61	247.5	1980.0	2475.0	-10~+10	-10~+30	-10~+50	10	12	15
33	T	0.120*	1.89	247.5	1980.0	2475.0	-10~+10	-10~+30	-10~+50	10	12	15
33	T	0.100	2.07	247.5	1980.0	2475.0	-10~+10	-10~+30	-10~+50	10	12	15
47	X	0.120	1.61	352.5	2820.0	3525.0	-10~+10	-10~+30	-10~+50	10	12	15
47	T	0.120	1.89	352.5	2820.0	3525.0	-10~+10	-10~+30	-10~+50	10	12	15
47	Y	0.120	1.90	352.5	2820.0	3525.0	-10~+10	-10~+30	-10~+50	10	12	15
68	T	0.120	1.89	510.0	4080.0	5100.0	-10~+10	-10~+30	-10~+50	10	12	15
68	Y	0.120	1.90	510.0	4080.0	5100.0	-10~+10	-10~+30	-10~+50	10	12	15
100	T	0.120	1.89	750.0	6000.0	7500.0	-10~+10	-10~+30	-10~+50	10	12	15
150	Y	0.120	1.90	1125.0	9000.0	11250.0	-10~+10	-10~+30	-10~+50	10	12	15
rated voltage (U_R) 100V												
0.1	B	0.700	0.36	5.0	40.0	50.0	-10~+10	-10~+30	-10~+50	10	12	15
0.1	C	0.600	0.44	5.0	40.0	50.0	-10~+10	-10~+30	-10~+50	10	12	15
0.47	B	0.400	0.47	5.0	40.0	50.0	-10~+10	-10~+30	-10~+50	10	12	15
0.47	C	0.300	0.62	5.0	40.0	50.0	-10~+10	-10~+30	-10~+50	10	12	15
0.68	C	0.300	0.62	6.8	54.4	68.0	-10~+10	-10~+30	-10~+50	10	12	15
0.68	D	0.150	1.02	6.8	54.4	68.0	-10~+10	-10~+30	-10~+50	10	12	15
1	C	0.300*	0.62	10.0	80.0	100.0	-10~+10	-10~+30	-10~+50	10	12	15
1	C	0.150	0.87	10.0	80.0	100.0	-10~+10	-10~+30	-10~+50	10	12	15
1	D	0.150*	1.02	10.0	80.0	100.0	-10~+10	-10~+30	-10~+50	10	12	15
1	D	0.100	1.25	10.0	80.0	100.0	-10~+10	-10~+30	-10~+50	10	12	15
1	E	0.150	1.07	10.0	80.0	100.0	-10~+10	-10~+30	-10~+50	10	12	15
1.5	D	0.150	1.02	15.0	120.0	150.0	-10~+10	-10~+30	-10~+50	10	12	15
1.5	E	0.150	1.07	15.0	120.0	150.0	-10~+10	-10~+30	-10~+50	10	12	15
2.2	E	0.150	1.07	22.0	176.0	220.0	-10~+10	-10~+30	-10~+50	10	12	15
2.2	V	0.150*	1.18	22.0	176.0	220.0	-10~+10	-10~+30	-10~+50	10	12	15
2.2	V	0.100	1.45	22.0	176.0	220.0	-10~+10	-10~+30	-10~+50	10	12	15
3.3	V	0.150*	1.18	33.0	264.0	330.0	-10~+10	-10~+30	-10~+50	10	12	15
3.3	V	0.100	1.45	33.0	264.0	330.0	-10~+10	-10~+30	-10~+50	10	12	15
3.3	W	0.150*	1.19	33.0	264.0	330.0	-10~+10	-10~+30	-10~+50	10	12	15
3.3	W	0.100	1.46	33.0	264.0	330.0	-10~+10	-10~+30	-10~+50	10	12	15
4.7	V	0.150*	1.18	47.0	376.0	470.0	-10~+10	-10~+30	-10~+50	10	12	15
4.7	V	0.100	1.45	47.0	376.0	470.0	-10~+10	-10~+30	-10~+50	10	12	15

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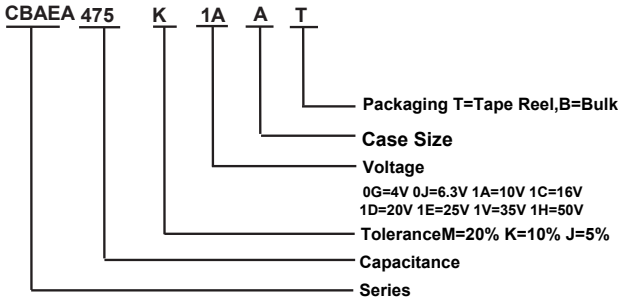
Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
				+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
		+25℃	+85℃									
rated voltage (U_R) 100V												
4.7	W	0.150*	1.19	47.0	376.0	470.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	W	0.100	1.46	47.0	376.0	470.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	V	0.150	1.18	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	W	0.150*	1.19	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	W	0.100	1.46	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	S	0.150	1.60	68.0	544.0	680.0	-10～+10	-10～+30	-10～+50	10	12	15
10	W	0.250	0.92	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
10	S	0.250*	1.24	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
10	S	0.150	1.60	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
10	T	0.250*	1.31	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
10	T	0.150	1.69	100.0	800.0	1000.0	-10～+10	-10～+30	-10～+50	10	12	15
15	X	0.150	1.44	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
15	S	0.150	1.60	150.0	1200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
15	T	0.150	1.69	150.0	1 200.0	1500.0	-10～+10	-10～+30	-10～+50	10	12	15
18	T	0.150	1.69	180.0	1440.0	1800.0	-10～+10	-10～+30	-10～+50	10	12	15
22	X	0.150	1.44	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
22	T	0.150*	1.69	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
22	T	0.100	2.07	220.0	1760. 0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
22	Y	0.150	1.70	220.0	1760.0	2200.0	-10～+10	-10～+30	-10～+50	10	12	15
33	T	0.150	1.69	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
33	T	0.150	1.70	330.0	2640.0	3300.0	-10～+10	-10～+30	-10～+50	10	12	15
47	T	0.150	1.69	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
47	Y	0.150	1.70	470.0	3760.0	4700.0	-10～+10	-10～+30	-10～+50	10	12	15
68	T	0.150	1.69	680.0	5440.0	6800.0	-10～+10	-10～+30	-10～+50	10	12	15
68	Y	0.150	1.70	680.0	5440.0	6800.0	-10～+10	-10～+30	-10～+50	10	12	15
75	T	0.150	1.69	750.0	6000.0	7500.0	-10～+10	-10～+30	-10～+50	10	12	15
85	T	0.150	1.69	850.0	6800.0	8500.0	-10～+10	-10～+30	-10～+50	10	12	15
100	T	0.150	1.69	1000.0	8000.0	10000.0	-10～+10	-10～+30	-10～+50	10	12	15
100	Y	0.150	1.70	1000.0	8000.0	10000.0	-10～+10	-10～+30	-10～+50	10	12	15
rated voltage (U_R) 125V												
3.3	D	0.150	1.02	33.0	264.0	330.0	-10～+10	-10～+30	-10～+50	10	12	15
4.7	D	0.150	1.02	58.7	470.0	587.5	-10～+10	-10～+30	-10～+50	10	12	15
4.7	E	0.150	1.07	58.7	470.0	587.5	-10～+10	-10～+30	-10～+50	10	12	15
6.8	E	0.150	1.07	85.0	680.0	850.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	V	0.150	1.18	85.0	680.0	850.0	-10～+10	-10～+30	-10～+50	10	12	15
6.8	W	0.150	1.19	85.0	680.0	850.0	-10～+10	-10～+30	-10～+50	10	12	15
10	E	0.250	0.83	125.0	1000.0	1250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	V	0.250	0.92	125.0	1000.0	1250.0	-10～+10	-10～+30	-10～+50	10	12	15
10	W	0.250	0.93	125.0	1000.0	1250.0	-10～+10	-10～+30	-10～+50	10	12	15
15	W	0.250	0.93	187.5	1500.0	1875.0	-10～+10	-10～+30	-10～+50	10	12	15

Table 2 Rated voltage, ripple current, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity C_R (μF)	shell Number	ESR max 100KHz (Ω)	AC ripple current max 100KHz (A)	Leak current max (μ A)			Capacity change range of (%)			Loss angle is tangent to max (%)		
		+25℃	+85℃	+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃ / +25℃	+85℃	+125℃
rated voltage (U_R) 125V												
15	X	0.250	1.12	187.5	1500.0	1875.0	-10～+10	-10～+30	-10～+50	10	12	15
18	W	0.250	0.93	225.0	1800.0	2250.0	-10～+10	-10～+30	-10～+50	10	12	15
18	X	0.250	1.12	225.0	1800.0	2250.0	-10～+10	-10～+30	-10～+50	10	12	15
22	W	0.300	0.85	275.0	2200.0	2750.0	-10～+10	-10～+30	-10～+50	10	12	15
22	X	0.250	1.12	275.0	2200.0	2750.0	-10～+10	-10～+30	-10～+50	10	12	15
22	T	0.200	1.47	275.0	2200.0	2750.0	-10～+10	-10～+30	-10～+50	10	12	15
33	T	0.200	1.47	412.5	3300.0	4125.0	-10～+10	-10～+30	-10～+50	10	12	15
33	Y	0.200	1.48	412.5	3300.0	4125.0	-10～+10	-10～+30	-10～+50	10	12	15
47	T	0.300	1.20	587.5	4700.0	5875.0	-10～+10	-10～+30	-10～+50	10	12	15
47	Y	0.300	1.21	587.5	4700.0	5875.0	-10～+10	-10～+30	-10～+50	10	12	15
68	T	0.200	1.47	850.0	6800.0	8500.0	-10～+10	-10～+30	-10～+50	10	12	15
68	Y	0.200	1.48	850.0	6800.0	8500.0	-10～+10	-10～+30	-10～+50	10	12	15

PART NUMBER EXAMPLE



CBAFB SERIES

High-frequency & failure rate grade available

FEATURES AND USES

- Resin molding packaging, good sealing, sheet type, polarity;
- Small volume, light weight, excellent and stable electrical performance, high reliability, good high frequency characteristics, ultra-low ESR (equivalent series resistance equivalent to KEMET company T495 type), large electric capacity;
- Suitable for aerospace, aviation, satellite, communications, missile and other reliable electronic equipment surface mounted with DC or pulsation circuit.
- Implementation standard: GJB2283-95
  QJ/PWV 347-2011



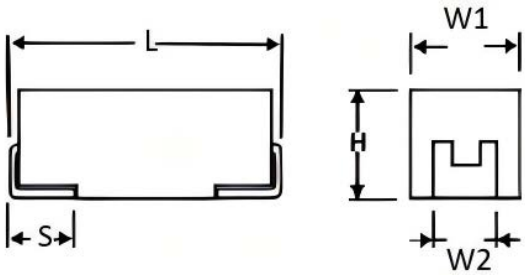


chart 1

BASIC MECHANICAL DESIGN FEATURE

Use temperature range: -55℃~+125℃, reduction design see Application Guidance 4.1;
allowable allowable capacity: K:±10%; M:±20%;
Overall dimensions: see Figure 1 and Table 1;
Room temperature leakage current: not exceeding that specified in Table 2;
Equivalent series resistance: not exceeding that specified in Table 2;
Loss angle tangent (tg δ) and high and low temperature characteristics: see Table 2;
Rated voltage, category voltage, and nominal capacitance: see Table 2.

Table 1 Overall dimensions of the capacitors (mm)

Case code	L	W_1	H	S	W_2
C	6.0±0.2	3.2±0.2	2.5±0.2	1.3±0.2	2.2±0.2
D	7.3±0.2	4.3±0.2	2.8±0.2	1.3±0.2	2.4±0.2
E	7.3±0.4	4.3±0.4	4.1±0.4	1.3±0.2	2.4±0.2
V	7.3±0.4	6.1±0.4	3.6±0.4	1.35±0.2	3.0±0.2
W	7.3±0.4	6.1±0.4	4.1±0.4	1.35±0.2	3.0±0.2

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Table 2 Rated voltage, category voltage, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity (C_R) μF	shell Number	ESR max 100KHz +25℃ Ω	Leak current max μA			Capacity variation range of %		Loss angle is cut to max %		
			+25℃	+85℃	+125℃	-55℃ / +85℃	+125℃	-55℃	+25℃	+85℃ / +125℃
Rated voltage (U_R) 4V (class voltage 2.7 V, 125℃)										
68	C	0.2	2.7	21.7	27.2	±10	±12	8	6	8
100	D	0.2	4.0	32.0	40	±10	±12	10	8	10
150	D	0.2	6.0	48.0	60	±10	±12	10	8	10
220	D	0.1	8.8	70.4	88	±12	±14	12	10	12
330	E	0.1	13.2	105.6	132	±12	±14	12	10	12
470	E	0.08	18.8	150.4	188	±14	±16	14	12	14
Rated voltage (U_R) 6.3V (class voltage 4 V, 125℃)										
15	C	0.4	0.9	7.5	9.4	±10	±12	8	6	8
22	C	0.35	1.3	11.0	13.8	±10	±12	8	6	8
33	D	0.2	2.0	16.6	20.7	±10	±12	8	6	8
33	C	0.3	2.0	16.6	20.7	±10	±12	8	6	8
47	D	0.2	2.9	23.6	29.6	±10	±12	8	6	8
68	D	0.17	4.2	34.2	42.8	±10	±12	8	6	8
100	D	0.15	6.3	50.4	63.0	±10	±12	10	8	10
150	E	0.125	9.4	75.6	94.5	±10	±12	10	8	10
220	E	0.1	13.8	110.8	138.6	±12	±14	12	10	12
330	E	0.1/0.09	20.7	166.3	207.9	±12	±14	12	10	12
470	E	0.08/0.06	29.6	236.8	296.1	±14	±16	14	12	14
Rated voltage (U_R) 10V (class voltage 7 V, 125℃)										
10	C	0.5	1.0	8.0	10	±10	±12	8	6	8
15	C	0.4	1.5	12.0	15	±10	±12	8	6	8
22	C	0.35	2.2	17.6	22	±10	±12	8	6	8
33	C	0.3	3.3	26.4	33	±10	±12	8	6	8
47	D	0.2	4.7	37.6	47	±10	±12	8	6	8
68	D	0.15	6.8	54.4	68	±10	±12	8	6	8
100	E	0.1	10	80	100	±10	±12	10	8	10
100	D	0.1	10	80	100	±10	±12	10	8	10
150	E	0.1	15	120	150	±10	±12	10	8	10
150	D	0.1	15	120	150	±10	±12	10	8	10
220	E	0.1	22	176	220	±12	±14	12	10	12
330	E	0.1/0.07	33	264	330	±12	±14	12	10	12
470	E	0.08/0.06	47	376	470	±14	±16	14	12	14

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Table 2 Rated voltage, class voltage, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity (C_R) μF	shell Number	ESR max 100KHz +25℃ Ω	Leak current max μA			Capacity variation range of %		Loss angle is cut to max %		
			+25℃	+85℃	+125℃	-55℃ / +85℃	+125℃	-55℃	+25℃	+85℃ / +125℃
Rated voltage (U_R) 16V (class voltage 10 V, 125℃)										
6.8	C	0.5	1.0	8.7	10.8	±10	±12	8	6	8
10	C	0.5	1.6	12.8	16.0	±10	±12	8	6	8
15	C	0.4	2.4	19.2	24.0	±10	±12	8	6	8
22	D	0.25	3.5	28.1	35.2	±10	±12	8	6	8
22	C	0.3	3.5	28.1	35.2	±10	±12	8	6	8
33	D	0.2	5.2	42.2	52.8	±10	±12	8	6	8
33	C	0.3	5.2	42.2	52.8	±10	±12	8	6	8
47	D	0.2	7.5	60.1	75.2	±10	±12	8	6	8
47	C	0.3	7.5	60.1	75.2	±10	±12	8	6	8
68	D	0.15	10.8	87.0	108.8	±10	±12	8	6	8
100	E	0.1	16	128	160	±10	±12	10	8	10
100	D	0.125	16	128	160	±10	±12	10	8	10
150	E	0.1	24	192	240	±10	±12	10	8	10
220	E	0.09	35.2	281.6	352	±12	±14	12	10	12
330	W	0.07	52.8	422.4	528	±12	±14	12	10	12
Rated voltage (U_R) 20V (class voltage 13 V, 125℃)										
4.7	C	0.6	0.9	7.5	9.4	±10	±12	8	6	8
6.8	C	0.5	1.3	10.8	13.6	±10	±12	8	6	8
10	C	0.45	2.0	16.0	20	±10	±12	8	6	8
15	D	0.275	3.0	24.0	30	±10	±12	8	6	8
22	E	0.225	4.4	35.2	44	±10	±12	8	6	8
33	E	0.17	6.6	52.8	66	±10	±12	8	6	8
33	D	0.2	6.6	52.8	94	±10	±12	8	6	8
47	E	0.15	9.4	75.2	136	±10	±12	8	6	8
68	E	0.15	13.6	108.8	200	±10	±12	8	6	8
100	E	0.12	20	160	300	±10	±12	10	8	10
150	E	0.12	30	240	440	±10	±12	10	8	10
220	W	0.08	44	352	660	±12	±14	12	10	12
330	W	0.07	66	528	9.4	±12	±14	12	10	12
Rated voltage (U_R) 25V (class voltage 17 V, 125℃)										
4.7	C	0.6	1.1	9.4	11.7	±10	±12	8	6	8
6.8	C	0.5	1.7	13.6	17.0	±10	±12	8	6	8
10	C	0.45	2.5	20	25.0	±10	±12	8	6	8
15	D	0.275	3.7	30	37.5	±10	±12	8	6	8

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Table 2 Rated voltage, class voltage, nominal capacitance, equivalent series resistance (ESR), shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity（CR） μF	shell Number	ESR max 100KHz +25℃ Ω	Leak current max μA			Capacity variation range of %		Loss angle is cut to max %		
			+25℃	+85℃	+125℃	-55℃ +85℃	+125℃	-55℃	+25℃	+85℃ +125℃
rated voltage (U_R) 25V (Category voltage: 17V, 125℃)										
22	E	0.2	5.5	44	55.0	±10	±12	8	6	8
22	D	0.225	5.5	44	55.0	±10	±12	8	6	8
33	E	0.175	8.2	66	82.5	±10	±12	8	6	8
47	E	0.2	11.7	94	117.5	±10	±12	8	6	8
68	W	0.2	17	136	170	±10	±12	8	6	8
68	E	0.2	17	136	170	±10	±12	8	6	8
100	W	0.15	25	200	250	±10	±12	10	8	10
100	V	0.15	25	200	250	±10	±12	10	8	10
100	E	0.15	25	200	250	±10	±12	10	8	10
150	W	0.15	37.5	200	375	±10	±12	10	8	10
rated voltage (U_R) 35V (Category voltage: 23V, 125℃)										
4.7	C	0.6	1.6	13.1	16.4	±10	±12	8	6	8
6.8	D	0.4	2.3	19.0	23.8	±10	±12	8	6	8
10	D	0.3	3.5	28.0	35	±10	±12	8	6	8
15	E	0.275	5.2	42.0	52.5	±10	±12	8	6	8
22	E	0.275	7.7	61.6	77	±10	±12	8	6	8
33	W	0.3	11.5	92.4	115.5	±10	±12	10	8	10
47	W	0.2	16.4	131.6	164.5	±10	±12	10	8	10
47	E	0.2	16.4	131.6	164.5	±10	±12	10	8	10
rated voltage (U_R) 50V (Category voltage: 33V, 125℃)										
2.2	D	0.5	1.1	8.8	11	±10	±12	8	6	8
2.2	C	0.5	1.1	8.8	11	±10	±12	8	6	8
3.3	D	0.4	1.6	13.2	16.5	±10	±12	8	6	8
4.7	D	0.3	2.3	18.8	23.5	±10	±12	8	6	8
6.8	D	0.3	3.4	27.2	34	±10	±12	8	6	8
10	E	0.25	5	40	50	±10	±12	8	6	8
15	W	0.4	7.5	60	75	±10	±12	10	8	10
22	W	0.3	11	88	110	±10	±12	10	8	10
33	W	0.3	16.5	132	165	±10	±12	10	8	10
rated voltage (U_R) 63V (Category voltage: 40V, 125℃)										
1.0	C	1.5	0.6	5.0	6.3	±10	±12	6	4	6
1.5	D	1.2	0.9	7.5	9.4	±10	±12	8	6	8
2.2	D	0.7	1.3	11.0	13.8	±10	±12	8	6	8
3.3	D	0.6	2.0	16.6	20.7	±10	±12	8	6	8

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Table 2 Rated voltage, class voltage, nominal capacitance, equivalent series resistance (ESR),shell code, and high and low temperature characteristics of the capacitor

Nominal electricity capacity（CR） μF	shell Number	ESR max 100KHz +25℃ Ω	Leak current max μA			Capacity variation range of%		Loss angle is cut to max%		
			+25℃	+85℃	+125℃	-55℃ +85℃	+125℃	-55℃	+25℃	+85℃ +125℃
rated voltage (U_R) 63V (Category voltage: 40V, 125℃)										
4.7	E	0.5	2.9	23.6	29.6	±10	±12	8	6	8
6.8	E	0.45	4.2	34.2	42.8	±10	±12	8	6	8
10	W	0.4	6.3	50.4	63	±10	±12	10	8	10
10	E	0.4	6.3	50.4	63	±10	±12	8	6	8
15	W	0.4	9.4	75.6	94.5	±10	±12	10	8	10
22	W	0.3	13.8	110.8	138.6	±10	±12	10	8	10
rated voltage (U_R) 75V (Category voltage 50V, 125℃)										
1.0	D	2.0	0.7	6.0	7.5	±10	±12	6	4	6
1.5	D	1.5	1.1	9.0	11.2	±10	±12	8	6	8
2.2	E	0.8	1.6	13.2	16.5	±10	±12	8	6	8
3.3	E	0.6	2.4	19.8	24.7	±10	±12	8	6	8
4.7	E	0.55	3.5	28.2	35.2	±10	±12	8	6	8
rated voltage (U_R) 100V (Category voltage: 63V, 125℃)										
1.0	D	2.0	1.0	8.0	10	±10	±12	6	4	6
1.5	E	1.3	1.5	12.0	15	±10	±12	8	6	8
2.2	E	0.6	2.2	17.6	22	±10	±12	8	6	8
3.3	W	0.6	3.3	26.4	33	±10	±12	10	8	10

Note: 1、It is forbidden to use tantalum capacitor regardless of polarity;

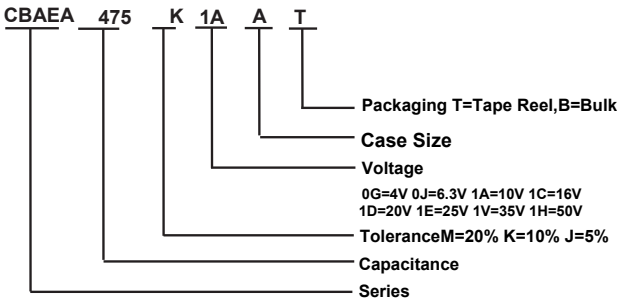
2、The measurement frequency of capacitance and loss angle tangent is 100Hz, $U_{_}=2.2^{0}_{-10}$V, $U_{\sim}=1.0^{0}_{-0.5}$V (valid value);

3、When measuring the 125℃ leakage current, please apply the category voltage;

4、Special size requirements or large capacity products can be negotiated with our company

5、ESR has two standards behind the diagonal standard is the added new standard, which is stricter than the CBAFB detailed specification. If there is a demand, please indicate the order;

PART NUMBER EXAMPLE



CBJB

tantalum case, hermetic Seal
high temperature 200℃

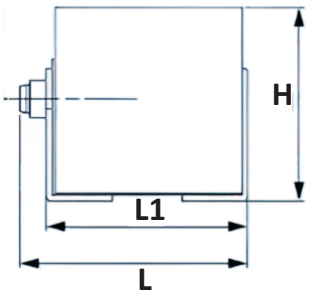
CBJB 's a hybrid capacitor composed of tantalum electrolytic and chemical capacitors, capable of functioning as a battery in energy conversion circuits and power pulse circuits. It supports unlimited cycle of charge and discharge providing power buffering, energy absorption, energy replenishment, and power interruption delay functions for circuits.

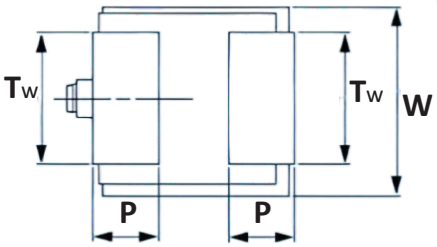
- Unidirectional lead, polarized; equivalent to Vishay's **T22**
- Temperature range: -55°C to +200°C (apply 50% rated voltage above 85°C)
- Standard： GJB 733B-2011

Application

This product is suitable for direct current, pulsating, and low-ripple circuits in military electronic equipment with high reliability requirements,such as aviation, aerospace, weapons, satellites, and radar systems.

DIMENSION

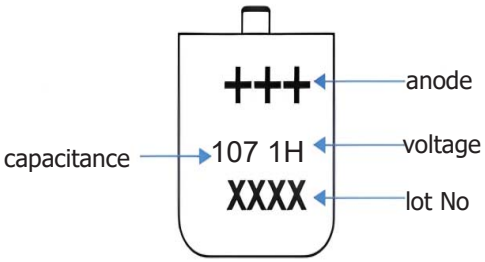




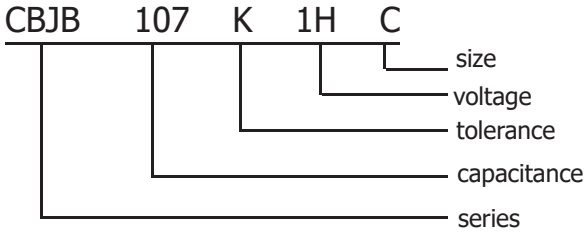


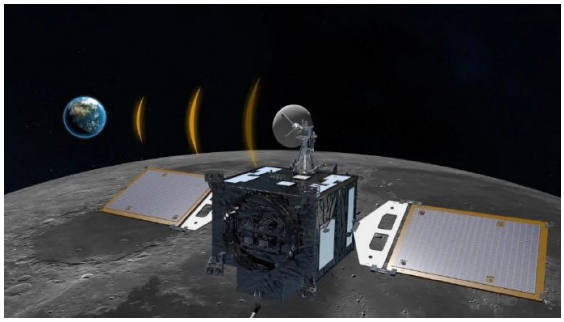
Case code	L_{max}	L1	W	H	P	T_W	weight（g）
C	9.0	8.0 ±0.2	7.0 ±0.2	7.6 ±0.2	2.5 ±0.2	5.1 ±0.2	2.4
D	14.5	13.5±0.2	8.5±0.2	10.5±0.5	4.0 ±0.2	5.0 ±0.2	6.5

50V	63V	75V	100V	125V
1H	1J	1M	2A	2Q



PART NUMBER





CBJB

PARAMETER SHEET

Rated voltage Ur / V	200℃ Reduced voltage V	Nominal capacitance Cr/ μF	Size code	Leakage Current μA		Capacitance change			100HZ -55℃ impedance Ω	85℃ 40KHZ AC ripple current mA
				25 ℃	85℃ 200℃	-55℃	85℃	200℃		
50	30	68	C	3.5	10	-25	+8	+16	1.5	1650
		100	C	5	15	-40	+14	+16	1.0	1590
		220	C	10	30	-40	+20	+25	0.8	1640
		330	C	15	45	-40	+25	+30	0.6	1700
		470	D	20	50	-40	+25	+30	0.5	1800
		680	D	30	60	-40	+30	+40	0.5	2000
		1000	D	50	100	-40	+40	+40	0.4	2000
63	40	47	C	5	15	-40	+14	+16	1.5	1590
		68	C	5	10	-40	+14	+10	1.5	1590
		100	C	10	20	-40	+20	+20	1.0	1650
		150	C	20	40	-40	+25	+30	1.0	1800
		220	D	30	50	-40	+25	+30	0.8	2000
		330	D	50	60	-40	+30	+30	0.8	2400
		470	D	50	100	-40	+40	+30	0.6	2400
		680	D	50	100	-40	+40	+30	0.5	2510
75	50	33	C	5	5	-25	+5	10	2.5	1310
		47	C	10	20	-25	+15	+16	2.5	1200
		68	C	15	30	-25	+15	+10	1.5	1300
		100	D	20	40	-40	+25	+20	1.5	1300
		220	D	30	50	-40	+25	+30	1.0	1650
		330	D	50	100	-40	+30	+30	0.8	1690
		470	D	50	100	-40	+30	+30	0.7	1740
100	65	15	C	5	10	-18	+5	10	3.5	1030
		22	C	5	25	-20	+15	+16	3.5	1200
		33	C	10	30	-30	+15	+10	3.0	1200
		47	C	15	40	-30	+20	+20	2.5	1400
		110	D	20	50	-30	+20	+30	2.5	1400
		220	D	30	100	-40	+25	+30	2.0	1650
		330	D	35	100	-40	+25	+30	2.0	1700
125	85	10	C	5	5	-15	+5	10	5.5	832
		22	C	10	20	-15	+10	+16	5.0	1000
		33	C	15	30	-18	+10	+10	5.0	1200
		47	C	15	40	-20	+10	+20	3.5	1200
		68	D	20	50	-30	+15	+30	3.5	1200
		100	D	30	100	-30	+20	+30	3.0	1400
		220	D	35	100	-30	+20	+30	2.8	1450

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tantalum case, hermetic Seal

CBJA

Equal Vishay – DLA19001 DLA20012 T24



Implementation standard: GJB733B-2011Q/GY-39-2014-A0

Product introduction

●**CBJA** series products are tantalum shell packaging, fully sealed, surface mount, external insulation tape,polarized capacitors;

●This series of products have the characteristics of small size, light weight, large storage capacity, excellent and stable electrical performance, high reliability, long life and stable storage;

● This series of products are suitable for surface mounting DC or pulsating circuits of military electronic equipment with reliability requirements such as aerospace, aviation, weapons, electronics, ships and communications;

● It can play the role of battery in energy conversion circuit and power pulse circuit. This product can be charged and discharged infinitely, and play the role of power buffer, energy absorption, energy supply, power failure delay, etc.;

Basic mechanical design feature

● Operating temperature range: -55℃~+125℃ (when greater than 85℃, apply reduced voltage for use);

● Storage temperature range: -62℃~+130℃;

● Capacitance allowable deviation: K class: ±10%, M class: ±20%;

● Rated voltage, derated voltage, surge voltage: see Table 3;

● Nominal capacitance and high and low temperature capacity change: see Table 3;

● Constant temperature and high temperature leakage current: not exceeding the provisions of Table 3;

● Equivalent series resistance (ESR): not exceeding that specified in Table 3;

● Impedance at negative temperature (-55℃): not exceeding that specified in Table 3;

● External dimensions and maximum weight: see Figure 1 and Table 1.

Part number example

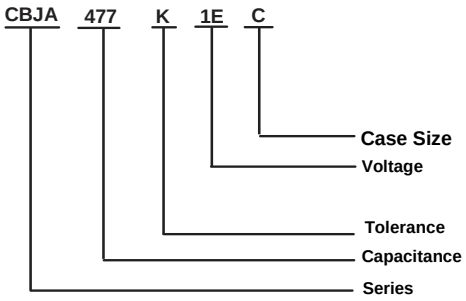


Figure 1 shows the external dimensions of the capacitor

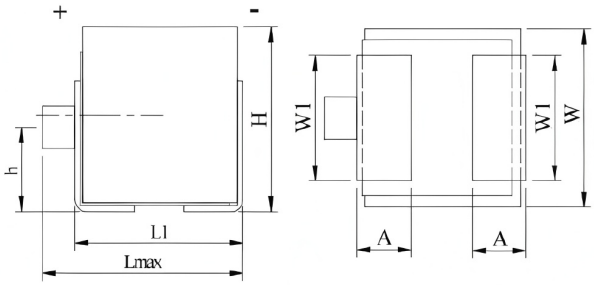


Table 1 Capacitor external dimensions (unit: mm)

Case code	Lmax	Ll±0.2	W±0.2	H±0.2	h±0.2	A±0.2	WI±0.2	maximum weight g
B	9	7.8	6.1	6.6	3.0	2.5	4.0	2.5
C	9	7.8	7.1	7.6	3.5	2.5	5.0	3.0
D	11	9.8	7.1	7.6	3.5	3.5	5.0	4.0
E	11	9.8	9.1	7.6	3.5	3.5	7.0	6.5
F	12	10.8	10.1	7.6	4.1	3.8	8.0	9.5
G	12	10.8	10.1	9.1	4.9	3.8	8.0	11.0

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Table 2 Identification of capacitors

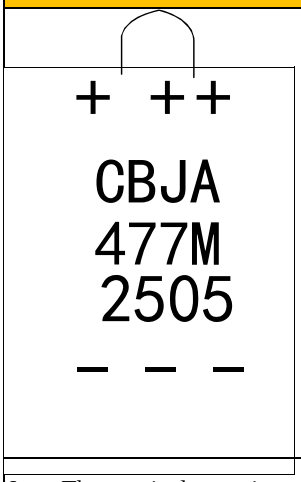
Capacitor identification			Rated voltage code	
	Trademark description		rated voltage	Voltage code
			10	1A
	first line Line 5	Capacitor polarity mark	16	1C
			25	1E
	Line 2	series	35	1V
			40	1G
	Line 3	capacitance/ tolerance	50	1H
			63	1J
	Line 4	production year	75	1M
			80	1K
Note: The nominal capacitance code is a three-digit number, the first two digits are valid numbers, and the third digit indicates the number of zeros after the valid numbers. The unit is pF.			100	2A
			110	2F
			125	2Q

Table 3 Main electrical parameters of capacitors

specified voltage (V)	derate voltage (V)	surge voltage (V)	nominal capacitance (μF)	case code	Range of capacitance variation max (%)			ESR max 100Hz (Ω)	d-c leakage current max (μA)		impedance Max 100Hz (Ω)
					-55℃	85℃	125℃	25℃	25℃	85℃ 125℃	-55℃
10 1A	6	11	1400	B	-80	+30	+40	1.0	11	55	15
			2200	C	-80	+30	+40	1.0	17	85	15
			3300	D	-85	+30	+40	1.0	26	130	10
			4700	E	-85	+30	+40	1.0	37	185	10
			6800	F	-85	+30	+40	1.0	54	270	8
16 1C	9.5	17.6	680	B	-80	+35	+45	1.0	8	40	20
			1000	C	-80	+35	+45	1.0	12	60	20
			1700	D	-80	+35	+45	1.5	21	105	15
			2200	E	-80	+35	+45	1.5	28	140	15
			3300	F	-80	+35	+45	1.5	42	210	12
25 1E	15	27.5	560	B	-50	+30	+40	1.0	11	55	20
			470	C	-50	+30	+40	1.0	5	25	20
			750	C	-75	+50	+60	1.5	15	75	25
			1400	D	-75	+50	+60	1.5	28	140	20
			1700	E	-75	+50	+60	1.5	34	170	18
			2200	F	-75	+50	+60	1.5	44	220	16
35 1V	20	38.5	330	B	-75	+60	+70	1.5	9	45	30
			560	C	-75	+60	+70	1.5	15	75	30
			850	D	-75	+60	+70	1.5	24	120	25
			1200	E	-75	+60	+70	1.5	33	165	22
			1700	F	-75	+60	+70	1.5	47	235	20

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40 1G	20	44	330	B	-60	+50	+60	1.5	10	50	30
			470	C	-60	+50	+60	1.5	10	30	30
			850	D	-60	+50	+60	1.5	25	120	25
			1100	E	-60	+50	+60	1.5	35	175	22
			1500	F	-60	+50	+60	1.5	48	240	20
50 1H	30	55	68	B/C	-25	+8	+15	1.5	3	15	35
			110	B/C	-60	+60	+80	2.0	4	20	30
			220	B/C	-60	+60	+80	2.0	9	45	30
			330	C	-60	+60	+80	1.5	13	65	25
			560	D	-60	+60	+80	1.5	20	100	15
			680	E	-60	+60	+80	1.5	27	135	13
			1000	F	-60	+60	+80	1.5	40	200	12
			1500	G	-70	+70	+100	0.8	60	250	10
63 1J	38	70	120	B	-50	+50	+70	2.0	6	30	35
			180	C	-50	+50	+70	1.5	9	45	30
			330	D	-50	+50	+70	1.5	16	80	20
			420	E	-50	+50	+70	1.5	21	100	18
			560	F	-50	+50	+70	1.5	28	140	16
75 1M	45	82.5	82	B	-40	+40	+50	2.0	5	25	30
			120	C	-40	+40	+50	1.5	7	35	25
			220	D	-40	+40	+50	1.5	13	65	20
			270	E	-40	+40	+50	1.5	16	80	18
			370	F	-40	+40	+50	1.5	22	110	16
80 1K	48	88	75	B	-15	+25	+35	2.0	5	25	30
			110	C	-15	+25	+35	1.5	7	35	25
			180	D	-25	+30	+45	1.5	11	55	20
			220	E	-25	+30	+45	1.5	14	70	18
			330	F	-25	+30	+45	1.5	21	100	16
100 2A	60	110	47	B	-15	+15	+35	2.5	4	20	50
			68	C	-15	+15	+35	2.0	5	25	40
			110	D	-20	+15	+35	1.5	8	40	30
			150	E	-20	+15	+35	1.5	12	60	27
			200	F	-20	+15	+35	1.5	16	80	25
110 2F	66	121	33	B	-12	+15	+30	2.5	3	15	60
			47	C	-12	+15	+30	2.0	4	20	50
			82	D	-20	+15	+30	2.0	6	30	40
			100	E	-20	+15	+30	2.0	9	45	35
			150	F	-20	+15	+30	2.0	13	65	32
125 2Q	75	138	22	B	-15	+10	+20	3.0	2	10	90
			33	C	-15	+10	+20	2.5	3	15	80
			60	D	-15	+10	+20	3.0	5	25	70
			75	E	-15	+10	+20	3.0	7	35	60
			100	F	-15	+10	+20	3.0	10	50	55

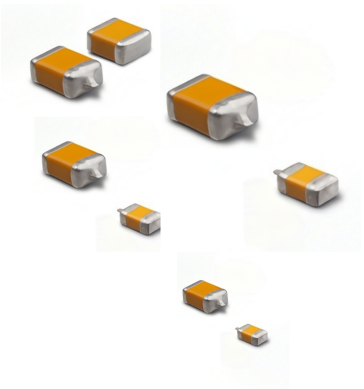
1. The product is a polarity capacitor, and the positive and negative poles should be distinguished when measuring and using, and it is forbidden to use a multimeter to measure without polarity;

2. DC leakage current: apply the rated voltage, and the charging time should not exceed 5 minutes (when measuring the DC leakage current of 125°C, apply the derating voltage to measure);

3. Capacitance, equivalent series resistance (ESR), impedance: the measurement frequency is 100Hz, the measurement DC bias voltage is U_=2.20V, and the AC bias voltage is U~=1.00V (effective value), and the measurement method adopts series equivalent circuit.

CBLA





- Use conductive polymer as the cathode. and can meet the double **85** requirements. Only 10-20% reduced voltage in rating is needed to meet the reliability requirements. In case of accidental breakdown, it does not burn or explode.

- Silicone resin housing packaging, leadless type, small in size,large capacitance, light , polar.

- Excellent electrical performance, stable, high reliability, strong surge resistance; technical characteristics are superior to those of Vishay's T95 and T97.

- High frequency &low ESR、

- Temperature range：-55℃~+150℃

Apply category voltage when temperature over 85℃.

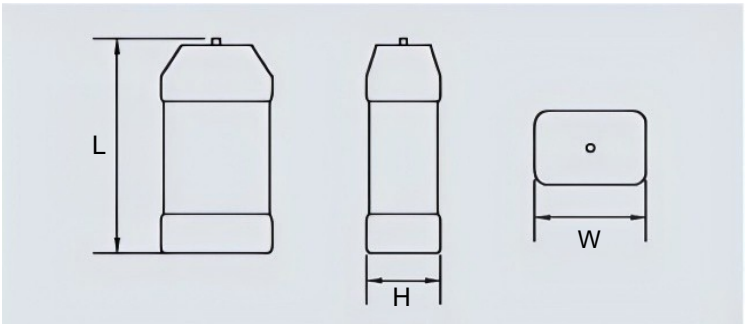
- GJB 733B-2011 Q/TCPC2007-2024

APPLICATION

Applicable to military defense and commercial aerospace fields such as aviation, aerospace, weapons, satellites, and radars etc.

DIMENSION

Size code	L	W	H
E	7.5±0.5	4.3±0.5	4.1±0.5
Y	7.2±0.5	6.0±0.5	6.0±0.5



C_R	Capacitance change (%)			Max DF (%)				LC (μA)		
μF	-55℃	85℃	125℃	-55℃	25℃	85℃	125℃	25℃	85℃	125℃
1~68	-25	+20	+30	10	6	10		I≤0.1CU or 0.5μA (Max)	10I	12.5I
100~2200				12	10	12				

Note: I - DC leakage current, C - nominal capacitance, U - rated voltage

CBLA

Rated voltage （V）		4	6.3	10	16	20	25	35	50	63	75	100	125
Voltage code		0G	0J	1A	1C	1D	1E	1V	1H	1J	1M	2A	2Q
Catergory voltage（V）		2.7	4	7	10	13	17	23	33	45	53	70	88
Surge voltage（V）		5	8	13	20	26	32	46	65	75	90	120	138
Capacitance(uF)	code	Size code											
1	105												E
1.5	155												E
2.2	225											E	Y
3.3	335									E	E	Y	Y
4.7	475								E	E	E	Y	
6.8	685								E	E/Y	Y		
10	106								E	Y	Y		
15	156							E	E	Y	Y		
22	226							E	E/Y	Y	Y		
33	336						E	E	Y	Y			
47	476						E	E/Y	Y	Y			
68	686			E	E	E	E	Y	Y				
100	107			E	E	E/Y	E/Y	Y					
120	127			E/Y	E	E/Y	E/Y	Y					
150	157			E/Y	E	E/Y	E/Y						
180	187	E	E	E/Y	E	Y	Y						
220	227	E	E	E/Y	E	Y	Y						
270	277	E/Y	E/Y	E/Y	Y	Y							
330	337	E/Y	E/Y	E/Y	Y	Y							
390	397	E/Y	E/Y	E/Y	Y								
470	477	E/Y	E/Y	Y	Y								
560	567	E/Y	E/Y	Y									
680	687	E/Y	E/Y	Y									
1000	108	Y	Y	Y									
1500	158	Y	Y										
2200	228	Y											

CBLA

Rated voltage（V）	4	6.3	10	16	20	25	35	50	63	75	100	125
Capacitance (uF)	ESR （100KHz Max mΩ）											
1												800
1.5												600
2.2											600	500
3.3									400	500	500	500
4.7								200	400	500	400	
6.8								200	300	400		
10								180	180	400		
15							120	100	120	300		
22							100	100	100	200		
33						160	100	100	100			
47						150	100	100	100			
68					100	100	100	100				
100				55	70	100	100					
120			50	50	70	100	100					
150			50	50	70	100						
180	55	55	50	50	70	100						
220	55	50	40	40	60	100						
270	50	50	40	40	60							
330	45	40	40	40	60							
390	45	40	40	40								
470	40	35	40	40								
560	40	35	40									
680	35	35	35									
1000	35	35	35									
1500	35	35										
2200	35											

TEST

a) Capacity and loss: Measurement frequency 100Hz, AC signal 1V, DC bias 2.2V

b) Leakage current: Rated voltage, charging time 3 minutes

c) Equivalent series resistance: Measurement frequency 100KHz, AC signa1V, DC bias 2.2V

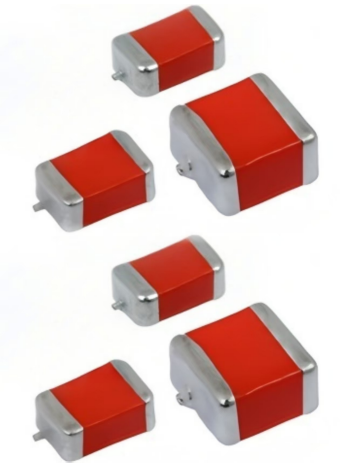
PART NUMBER EXAMPLE

CBKA	107	K	1C	E
series	capacitance	tolerance	voltage code	size code

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CBMA

- Resin encapsulation, end cap type, small in size, light in weight, polar in nature;;
- High frequency, low ESR;
- Applicable to the fields of defense mlitary and commercial aerospace such as aviation, weapons, electronics, ships, and communications.
- Equivalent to the T95 of VISHAY;
- Executive standard：GJB2283-95 QJ/PWV212-2014



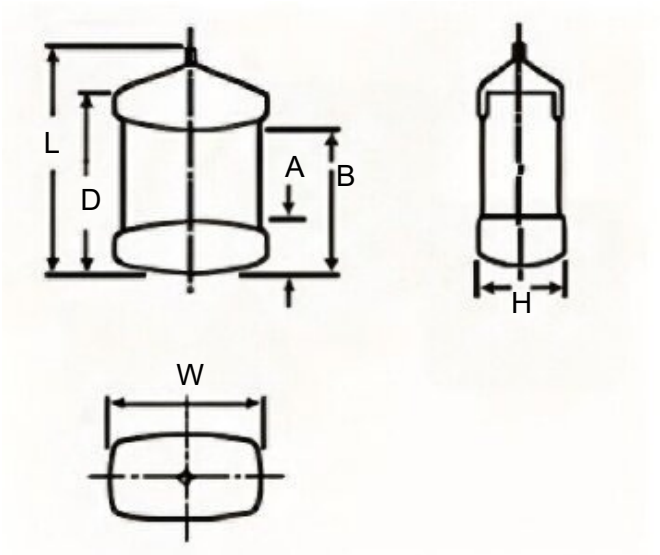
Temperature range：-55℃~+125℃，

Capacitance tolerance：K：±10%；M：±20%；

DIMENSION（mm）

Size code	L±0.5	W±0.5	H±0.5	A±0.5	B±0.6	D
C	7.1	3.2	2.5	1.3	4.6	6.0
D	7.5	4.3	2.8	1.3	4.6	6.4
R	7.2	6.0	3.5	1.3	4.6	6.2

Note: The D in the table are reference values.



CBMA

(C_R) μF	Size code	ESR max 100KHz +25℃ mΩ	LC max μA			Capacitance change %			DF max%		
			+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃	+25℃	+85℃ / +125℃
Rated voltage (U_R) 4V (catergory voltage 2.7V,125℃)											
270	D	60	10.8	108	130	±12	±10	±12	12	8	12
330	R	80	13.2	132	158	±12	±10	±12	12	8	12
Rated voltage (U_R) 6.3（6）V (catergory voltage 4V,125℃)											
180	R	80	10.8	108	130	±12	±10	±12	12	8	12
200	D	65	22	220	264	±12	±10	±12	12	8	12
220	R	80	13.2	132	158	±12	±10	±12	12	8	12
330	C	80	20.8	208	249	±12	±10	±12	12	8	12
390	R	45	23.4	234	280	±12	±10	±12	12	8	12
470	D	60	28.2	282	338	±15	±10	±15	14	10	14
680	R	45	40.8	408	489	±15	±10	±15	16	12	16
Rated voltage (U_R) 10V (catergory voltage 7V,125℃)											
100	R	75	10	100	120	±12	±10	±12	12	8	12
120	D	85	12	120	144	±12	±10	±12	12	8	12
120	R	70	12	120	144	±12	±10	±12	12	8	12
150	D	75	15	150	180	±12	±10	±12	12	8	12
150	R	65	15	150	180	±12	±10	±12	12	8	12
220	D	65	22	220	264	±12	±10	±12	12	8	12
220	R	55	22	220	264	±12	±10	±12	12	8	12
330	D	65	33	330	396	±12	±10	±12	12	8	12
330	R	45	33	330	396	±12	±10	±12	12	8	12
470	R	45	47	470	564	±15	±10	±15	12	8	12
680	R	90	68	680	816	±15	±10	±15	18	14	18
Rated voltage (U_R) 16（15）V (catergory voltage 10V,125℃)											
68	R	95	10.9	109	130	±12	±10	±12	10	6	10
100	C	90	16	160	192	±12	±10	±12	12	8	12
100	D	80	16	160	192	±12	±10	±12	12	8	12
150	D	85	24	240	288	±12	±10	±12	12	8	12
180	R	55	28.8	288	345	±12	±10	±12	12	8	12
220	R	55	35.2	352	422	±12	±10	±12	12	8	12
330	R	55	52.8	528	633	±12	±10	±12	18	14	18
Rated voltage (U_R) 25V (catergory voltage 17V,125℃)											
10	C	280	2.5	25	30	±12	±10	±12	10	6	10
33	D	130	8.3	83	99	±12	±10	±12	10	6	10
33	R	130	8.3	83	99	±12	±10	±12	10	6	10
47	D	130	11.8	118	141	±12	±10	±12	10	6	10
47	R	108	11.8	118	141	±12	±10	±12	10	6	10

CBMA

(C_R) μF	Size code	ESR max 100KHz +25℃ mΩ	LC max μA			Capacitance change %			DF max%		
			+25℃	+85℃	+125℃	-55℃	+85℃	+125℃	-55℃	+25℃	+85℃ / +125℃
Rated voltage (U_R) 25V (catergory voltage17V,125℃)											
68	D	200	17	170	204	±12	±10	±12	12	8	12
68	R	95	17	170	204	±12	±10	±12	10	6	10
100	R	90	25	250	300	±12	±10	±12	12	8	12
Rated voltage (U_R) 35（32）V (catergory voltage23V,125℃)											
15	D	270	5.3	53	63	±12	±10	±12	10	6	10
15	R	190	5.3	53	63	±12	±10	±12	10	6	10
22	R	240	7.7	77	92	±12	±10	±12	10	6	10
33	R	200	11,6	116	139	±12	±10	±12	10	6	10
47	R	320	16.5	165	198	±12	±10	±12	10	6	10
Rated voltage (U_R) 50V (catergory voltage33V,125℃)											
4.7	C	800	2.4	24	28	±12	±10	±12	10	6	10
6.8	C	700	3.4	34	40	±12	±10	±12	10	6	10
6.8	D	450	3.4	34	40	±12	±10	±12	10	6	10
10	R	500	5	50	60	±12	±10	±12	10	6	10
15	R	350	7.5	75	90	±12	±10	±12	10	6	10
22	R	300	11	110	132	±12	±10	±12	10	6	10

Noticed

The measurement frequency for capacitance and tangent of loss angle is 100Hz, U_ = 2.20 - 1.0 V, U_ = 1.00 - 0.5 V (rms value).;

When measuring the leakage current at 125℃, please apply the specified voltage.

PART NUMBER EXAMPLE

CBMA	107	K	1C	D
series	capacitance	tolerance	voltage code	size code

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2005

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