

CABAE

for defense

- Conductive polymers are used to achieve ultra-low ESR.
- Super interference absorption ability, excellent temperature and frequency characteristics.
- The national military standard level meets the environmental requirements of vibration and low pressure.
- It is suitable for energy storage, filtering and bypass in electronic circuits in aerospace, aviation, cold, high altitude and ocean.



■ Main technical indicators

Item	characteristic	
Operating temperature range	-55℃~+105℃	
Rated operating voltage range	6.3V~100V	
Nominal capacitance range	12μF~15000μF	
Allowable deviation of nominal capacitance	M (±20%) (25℃, 120Hz)	
DC leakage current *1	I ≤ 0.02C _R U _R (25℃, 2min) C _R : Nominal capacitance (μF); U _R : Rated voltage (V)	
Loss tangent tgδ (max)	For details, please refer to the "List of Product Specifications and Technical Parameters" (25℃, 120Hz)	
ESR (maximum) *2	For details, please refer to the "List of Product Specifications and Technical Parameters" (25℃, 100KHz)	
Low temperature characteristics (capacitance rate of change)	C _{25℃} ~ C _{-55℃} C _{25℃} ≤ 35% (25℃, 120Hz)	
Durability (High Temperature Test)	The rated voltage is applied at 105℃ for 2000h, and after recovery for 24h, the electrical performance of the rated voltage (25℃ ± 5℃) is tested at room temperature	
	Rate of change in capacitance	≤ ± 10% of the initial measurement
	DC leakage current	≤ initial prescriptive value
	The loss angle is tangent	≤ initial measurements
	ESR	≤ 200% of the initial measurement
Store at high temperatures	After storage at 105℃ for 1000h, recovery for 24h, and test at room temperature (25℃ ± 5℃), its electrical properties meet the following requirements:	
	Rate of change in capacitance	≤ ± 10% of the initial measurement
	DC leakage current	≤ 200% initial provisions
	The loss angle is tangent	≤ initial measurements
	ESR	≤ 200% of the initial measurement

Execution standard number: Q/MN21003—2021 GJB10175—2021

Note: *1 1KΩ protection resistor in series during testing and charging; *2 The test location is the root of the capacitor lead terminal.

■ Outline drawing and size table (mm)

∅	6.3	8	10	12.5	16	18
F	2.5	3.5	5.0		7.5	
d	0.6				0.8	
A	1.0		2.0			
B	0.5			1.0		

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■ List of product specifications and technical parameters

rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR ($\text{m}\Omega, 25^\circ\text{C}$) (100kHz)	Ripple current mA,rms (100KH, 105 $^\circ\text{C}$)
6.3	390	6.3×8	0.08	15	2700
	470	6.3×8	0.08	15	2700
	560	6.3×8	0.08	15	2700
	560	6.3×11	0.08	13	3100
	680	6.3×11	0.08	13	3100
	680	8×8	0.08	13	3100
	820	6.3×11	0.08	13	3100
	820	8×12	0.08	13	3600
	1000	8×12	0.08	13	3600
	1200	8×12	0.08	13	3600
	1500	10×10	0.08	12	4100
	1800	10×10	0.08	12	4100
	1800	10×12.5	0.08	11	4500
	2200	10×12.5	0.08	11	4500
10	270	6.3×8	0.08	20	2200
	330	6.3×8	0.08	20	2200
	390	6.3×8	0.08	20	2200
	390	6.3×11	0.08	17	2600
	470	6.3×11	0.08	17	2600
	560	6.3×11	0.08	17	2600
	560	8×8	0.08	17	3000
	680	8×12	0.08	15	3400
	820	8×12	0.08	15	3400
	1000	8×12	0.08	15	3400
	1000	10×10	0.08	15	3800
	1200	10×10	0.08	15	3800
	1500	10×12.5	0.08	13	4200
	1800	10×12.5	0.08	13	4200
16	150	6.3×8	0.08	28	2200
	180	6.3×8	0.08	28	2200
	220	6.3×8	0.08	28	2200
	270	6.3×11	0.08	25	2600
	330	8×8	0.08	25	2600
	390	8×12	0.08	20	3000
	470	8×12	0.08	20	3000
	560	8×12	0.08	20	3000
	680	10×10	0.08	18	3000
	820	10×12.5	0.08	18	3400
	1000	10×12.5	0.08	18	3400

rated voltage v	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR ($\text{m}\Omega, 25^\circ\text{C}$) (100kHz)	Ripple current mA,rms (100KHz, 105 $^\circ\text{C}$)	
16	1200	10×16	0.08	18	3800	
	1500	10×20	0.08	15	4000	
	1800	12.5×16	0.08	15	4400	
	2200	12.5×20	0.08	15	4800	
	2700	12.5×20	0.08	15	4800	
	3300	12.5×25	0.08	15	5000	
	3900	12.5×25	0.08	15	5000	
	4700	16×25	0.08	15	5300	
	5600	16×25	0.08	15	5300	
	6800	16×30	0.08	15	5500	
	8200	16×35	0.08	15	5900	
	10000	18×30	0.10	15	6000	
	12000	18×35	0.12	15	6300	
	15000	18×40	0.15	15	6700	
	20	120	6.3×8	0.08	28	2400
		150	6.3×8	0.08	28	2400
180		6.3×11	0.08	25	2800	
220		6.3×11	0.08	25	2800	
270		8×8	0.08	25	2800	
330		8×12	0.08	20	3200	
390		8×12	0.08	20	3200	
470		8×12	0.08	20	3200	
560		10×10	0.08	18	3200	
680		10×12.5	0.08	18	3600	
820		10×12.5	0.08	18	3600	
1000		10×16	0.08	18	4000	
1200		10×20	0.08	18	4400	
1500		10×20	0.08	18	4400	
1500		12.5×16	0.08	18	4700	
1800		12.5×20	0.08	18	5200	
2200		12.5×20	0.08	18	5200	
2700		12.5×25	0.08	15	5300	
3300		16×25	0.08	15	5600	
3900		16×25	0.09	15	5600	
4700	16×30	0.09	15	5800		
5600	16×30	0.10	15	5800		
6800	16×35	0.11	15	6200		
8200	18×30	0.12	15	6200		
10000	18×35	0.13	15	6400		

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■ List of product specifications and technical parameters

rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR ($\text{m}\Omega, 25^\circ\text{C}$) (100kHz)	Ripple current mA_{rms} (100KHz, 105°C)
20	12000	18×40	0.15	15	6600
25	100	6.3×8	0.08	28	2000
	120	6.3×8	0.08	28	2000
	150	6.3×11	0.08	25	2400
	180	6.3×11	0.08	25	2400
	220	8×8	0.08	25	2800
	270	8×12	0.08	20	3200
	330	8×12	0.08	20	3200
	390	10×10	0.08	18	3200
	470	10×12.5	0.08	18	3200
	560	10×12.5	0.08	18	3200
	680	10×12.5	0.08	18	3200
	820	10×16	0.08	18	4000
	1000	10×20	0.08	18	4400
	1200	10×20	0.08	18	4400
	1200	12.5×16	0.08	16	4700
	1500	12.5×20	0.08	16	5200
	1800	12.5×25	0.08	15	5300
	2200	12.5×25	0.08	15	5300
	2700	16×25	0.08	15	5600
	3300	16×25	0.09	15	5600
3900	16×30	0.09	15	5900	
4700	16×30	0.10	15	5900	
5600	16×35	0.11	15	6200	
6800	18×35	0.12	15	6500	
8200	18×40	0.13	15	6600	
10000	18×40	0.13	15	6600	
35	56	6.3×8	0.08	28	2200
	68	6.3×8	0.08	28	2200
	82	6.3×11	0.08	25	2600
	100	6.3×11	0.08	25	2600
	120	8×8	0.08	25	2600
	150	8×12	0.08	22	3000
	180	8×12	0.08	22	3000
	220	10×10	0.08	20	3000
	270	10×12.5	0.08	20	3400
	330	10×12.5	0.08	20	3400
	390	10×16	0.08	20	3800
	470	10×16	0.08	20	3800

rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR ($\text{m}\Omega, 25^\circ\text{C}$) (100kHz)	Ripple current mA_{rms} (100KHz, 105°C)	
35	560	10×20	0.08	20	4000	
	680	10×20	0.08	20	4000	
	680	12.5×16	0.08	20	4400	
	820	12.5×20	0.08	17	4800	
	1000	12.5×20	0.08	17	4800	
	1200	12.5×25	0.08	17	5300	
	1500	16×25	0.08	17	6000	
	1800	16×25	0.08	17	6000	
	2200	16×30	0.08	17	6200	
	2700	16×35	0.08	17	6200	
	3300	18×30	0.09	17	6200	
	3900	18×35	0.09	17	6600	
	4700	18×40	0.10	17	7000	
	5600	18×40	0.10	17	7000	
	40	56	6.3×8	0.08	35	2200
		68	6.3×8	0.08	35	2200
82		6.3×11	0.08	32	2600	
100		6.3×11	0.08	32	2600	
120		8×12	0.08	30	3000	
150		8×12	0.08	30	3000	
180		8×12	0.08	30	3000	
220		10×10	0.08	28	3000	
270		10×12.5	0.08	25	3400	
330		10×12.5	0.08	25	3400	
390		10×16	0.08	22	3800	
470		10×20	0.08	20	4000	
560		10×20	0.08	20	4000	
560		12.5×16	0.08	20	4400	
680		12.5×20	0.08	20	4800	
820		12.5×20	0.08	20	4800	
1000	12.5×25	0.08	20	5300		
1200	12.5×25	0.08	20	5300		
1500	16×25	0.08	17	6000		
1800	16×30	0.08	16	6100		
2200	16×30	0.08	16	6100		
2700	16×35	0.08	16	6200		
3300	18×35	0.09	16	6600		
3900	18×40	0.10	16	7000		
4700	18×40	0.10	16	7000		

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rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR ($\text{m}\Omega, 25^\circ\text{C}$) (100kHz)	Ripple current mA,rms (100KH, 105°C)
50	27	6.3×8	0.08	35	1600
	33	6.3×8	0.08	35	1600
	39	6.3×11	0.08	32	2000
	47	6.3×11	0.08	32	2000
	56	6.3×11	0.08	32	2000
	68	8×12	0.08	30	2400
	82	8×12	0.08	30	2400
	100	8×12	0.08	30	2400
	120	10×10	0.08	28	2400
	150	10×12.5	0.08	25	2800
	180	10×12.5	0.08	25	2800
	220	10×16	0.08	21	3200
	270	10×20	0.08	18	3600
	330	10×20	0.08	18	3600
	330	12.5×16	0.08	18	4000
	390	12.5×20	0.08	18	4300
	470	12.5×20	0.08	18	4300
	560	12.5×25	0.08	17	4500
	680	12.5×25	0.08	17	4500
	820	16×25	0.08	16	5100
1000	16×25	0.08	16	5100	
1200	16×30	0.08	16	5500	
1500	16×35	0.08	16	5700	
1800	18×30	0.08	16	6000	
2200	18×35	0.08	16	6300	
2700	18×40	0.08	16	6700	
63	18	6.3×8	0.08	45	1600
	22	6.3×8	0.08	45	1600
	27	6.3×11	0.08	40	2000
	33	6.3×11	0.08	40	2000
	39	8×8	0.08	40	2000
	47	8×12	0.08	35	2400
	56	8×12	0.08	35	2400
	68	8×12	0.08	35	2400
	82	10×10	0.08	30	2400
	100	10×12.5	0.08	25	2800

rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR ($\text{m}\Omega, 25^\circ\text{C}$) (100kHz)	Ripple current mA,rms (100KH, 105°C)	
63	120	10×16	0.08	22	3200	
	150	10×16	0.08	22	3200	
	180	10×20	0.08	18	3400	
	220	10×20	0.08	18	3400	
	220	12.5×16	0.08	18	3800	
	270	12.5×20	0.08	17	4500	
	330	12.5×25	0.08	17	5000	
	390	12.5×25	0.08	17	5000	
	470	16×25	0.08	16	5600	
	560	16×25	0.08	16	5600	
	680	16×25	0.08	16	5600	
	820	16×30	0.08	16	5800	
	1000	16×35	0.08	16	5900	
	1200	18×35	0.08	16	6000	
	1500	18×40	0.08	16	6700	
	1800	18×40	0.08	16	6700	
	80	12	6.3×8	0.09	50	1300
		15	6.3×8	0.09	50	1300
18		6.3×11	0.09	45	1700	
22		6.3×11	0.09	45	1700	
27		8×8	0.09	45	1700	
33		8×12	0.09	40	2100	
39		8×12	0.09	40	2100	
47		8×12	0.09	40	2100	
56		10×10	0.09	35	2100	
68		10×12.5	0.09	30	2500	
82		10×16	0.09	25	2900	
100		10×16	0.09	25	2900	
120		10×20	0.09	24	3300	
150		10×20	0.09	24	3300	
180		10×20	0.09	24	3300	
180		12.5×16	0.09	22	3500	
220		12.5×20	0.09	20	3700	
270		12.5×25	0.09	18	4500	
330	12.5×25	0.09	18	4500		
390	16×25	0.09	18	5000		

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■ List of product specifications and technical parameters

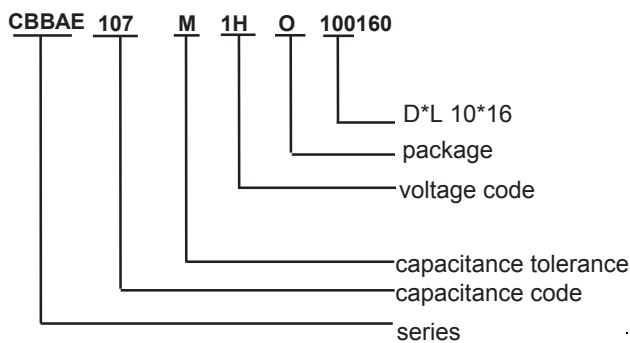
rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR (m Ω ,25 $^{\circ}\text{C}$) (100kHz)	Ripple current mA,rms (100KH, 105 $^{\circ}\text{C}$)
80	470	16×25	0.09	18	5000
	560	16×30	0.09	18	5400
	680	16×35	0.09	18	5800
	820	16×35	0.09	18	5800
	1000	18×35	0.09	17	5900
	1200	18×40	0.09	17	6200
100	27	10×10	0.09	40	1200
	33	10×10	0.09	40	1200
	39	10×12.5	0.09	35	1600
	47	10×16	0.09	30	1960
	56	10×16	0.09	30	1960
	68	10×20	0.09	26	2600
	82	10×20	0.09	26	2600

rated voltage V	capacity μF	Dimensions D×L (mm)	$\text{tg}\delta$ (120Hz)	ESR (m Ω ,25 $^{\circ}\text{C}$) (100kHz)	Ripple current mA,rms (100KH, 105 $^{\circ}\text{C}$)
100	82	12.5×16	0.09	24	2900
	100	12.5×20	0.09	22	3200
	120	12.5×20	0.09	22	3200
	150	12.5×25	0.09	22	3900
	180	12.5×25	0.09	22	3900
	220	16×25	0.09	20	4400
	270	16×25	0.09	20	4400
	330	16×30	0.09	20	4700
	390	16×35	0.09	19	5100
	470	18×30	0.09	19	5100
	560	18×35	0.09	19	5400
	680	18×40	0.09	18	5700

■ Ripple current frequency coefficient

Frequency (f)	1KHz≤f<1KHz	1KHz≤f<10KHz	10KHz≤f<100KHz	100KHz≤f<300KHz
coefficient	0.05	0.3	0.7	1.0

HOW TO MAKE A PART NUMBER



Code	Lead Forming Type
O	Bulk
T	5mm Chip tape
A	($\Phi 4\sim\Phi 6.3$)2.5mm tape
F	($\Phi 4\sim\Phi 8$)5mm tape
P	$\Phi \geq \Phi 8\text{mm}$ original(vertical)tape
M	5mm Lead forming
C	C Lead forming
B	B Lead forming
D	($\Phi 4\sim\Phi 8$)2.5mm Lead forming