

# CABAH

for defense



- Suitable for reflow soldering, high-pressure resistant series.
- Low ESR, high frequency and low impedance.
- Military products meet environmental requirements such as vibration and low air pressure. It can be supplied according to the "seven specialty" level, and can also be supplied according to the "general military" level.
- 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	35V~100V	
Nominal capacitance (25℃, 120Hz)	4.7μF~2200μF	
Allowable deviation of nominal capacitance (25℃, 120Hz)	M (±20%)	
DC leakage current (25℃, 2min) *1	I≤0.02C <sub>R</sub> U <sub>R</sub> (μA) C <sub>R</sub> : Nominal capacitance (μF); U <sub>R</sub> : Rated voltage (V)	
Loss tangent (max) (25℃, 120Hz)	For details, please refer to the "List of Product Specifications and Technical Parameters"	
ESR (max) (25℃, 100KHz) *2	For details, please refer to the "List of Product Specifications and Technical Parameters"	
High and low temperature characteristics (impedance ratio, 100KHz)	-55℃:z <sub>55℃</sub> /z <sub>25℃</sub> ≤1.25; 105℃:z <sub>105℃</sub> /z <sub>25℃</sub> ≤1.25	
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	≤± 20% of the initial measurement
	The loss angle is tangent	≤ 150% of the initial measurement
	DC leakage current	≤ initial prescriptive value
	ESR	≤ 150% of the initial measurement
Steady-state damp heat	60℃, 90~95%RH storage for 1000h, recovery for 24h, room temperature (25±5℃) test, its electrical performance conforms:	
	Rate of change in capacitance	≤± 20% of the initial measurement
	The loss angle is tangent	≤ 150% of the initial specified value
	DC leakage current	≤ initial prescriptive value
	ESR	≤ 150% of the initial specified value

Executive standard number: Q/MN60006-2017 Seven special standard number: QZJ840634

\*1 1KΩ protection resistor in series during testing and charging; \*2 The test position is the root of the capacitor lead segment.

■ Outline drawing and size table (mm)

	D×L	D	L	A	B	C	E	H
Standard product: (Size: φ5×5.4~φ18×21.5)	5×5.4	5	5.4±0.3	2.2	5.3	5.3	1.4	0.5~0.8
	6.3×5.4	6.3	5.4±0.3	2.6	6.6	6.6	2.1	0.5~0.8
	6.3×7.7	6.3	7.7±0.3	2.6	6.6	6.6	2.1	0.5~0.8
	6.3×9.7	6.3	9.7±0.3	2.6	6.6	6.6	2.1	0.5~0.8
	8×6.2	8	6.2±0.3	2.9	8.3	8.3	3.2	0.8~1.1
	8×10	8	10±1.0	2.9	8.3	8.3	3.2	0.8~1.1
	8×11.7	8	11.7±1.0	2.9	8.3	8.3	3.2	0.8~1.1
	10×7.5	10	7.5±1.0	3.2	10.3	10.3	4.6	0.8~1.1
	10×10	10	10±1.0	3.2	10.3	10.3	4.6	0.8~1.1
	10×10.5	10	10.5±1.0	3.2	10.3	10.3	4.6	0.8~1.1
Vibration-resistant products: (Size: φ8×10~φ18×21.5)	10×12.3	10	12.3±1.0	3.2	10.3	10.3	4.6	0.8~1.1
	10×16	10	16±1.0	3.2	10.3	10.3	4.6	0.8~1.1
	12×13.5	12	13.5±1.0	4.7	12.8	12.8	4.4	0.8~1.2
	12.5×16	12.5	16±1.0	4.7	12.8	12.8	4.4	1.0~1.3
	16×16.5	16	16.5±1.0	5.7	17.0	17.0	6.5	1.0~1.3
	16×21.5	16	21.5±1.0	5.7	17.0	17.0	6.5	1.0~1.3
	18×16.5	18	16.5±1.0	6.7	19.0	19.0	6.5	1.0~1.3
	18×21.5	18	21.5±1.0	6.7	19.0	19.0	6.5	1.0~1.3

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■ List of product specifications and technical parameters

rated voltage (V)	Capacitance (μF)	Dimensions D×L (mm)	tgδ (120Hz)	ESR (mΩ) (100kHz)	Ripple current mA,ms (100kHz)
35	4.7	6.3×5.4	0.12	50	1900
	5.6	6.3×5.4	0.12	50	1900
	6.8	6.3×5.4	0.12	50	1900
	8.2	6.3×5.4	0.12	50	1900
	10	6.3×5.4	0.12	50	1900
	12	6.3×5.4	0.12	50	1900
	15	6.3×5.4	0.12	50	1900
	18	6.3×5.4	0.12	50	1900
	22	6.3×5.4	0.12	50	1900
	27	6.3×7.7	0.12	45	2700
	33	6.3×7.7	0.12	45	2700
	39	6.3×7.7	0.12	45	2700
	47	6.3×7.7	0.12	45	2700
	56	8×10	0.12	35	2900
	68	8×10	0.12	35	2900
	82	8×10	0.12	35	2900
	100	8×11.7	0.12	24	3100
	120	8×11.7	0.12	24	3100
	150	10×10	0.12	22	3300
	180	10×10	0.12	22	3300
	220	10×12.3	0.12	20	3400
	270	10×12.3	0.12	20	3400
	330	10×16	0.12	20	3800
	390	10×16	0.12	20	3800
	470	10×16	0.12	20	3800
	470	12.5×13.5	0.12	20	4200
	560	12.5×16	0.12	20	4400
	680	12.5×16	0.12	20	4400
	820	16×16.5	0.12	18	4800
	1000	16×16.5	0.12	18	4800
	1200	18×16.5	0.13	18	5300
	1500	16×21.5	0.13	18	5300
1500	18×16.5	0.13	18	6000	
1800	18×21.5	0.13	18	6200	
2200	18×21.5	0.13	18	6200	
40	6.8	6.3×5.4	0.12	50	1900
	8.2	6.3×5.4	0.12	50	1900
	10	6.3×5.4	0.12	50	1900
	12	6.3×5.4	0.12	50	1900
	15	6.3×5.4	0.12	50	1900
	18	6.3×5.4	0.12	50	1900
	22	6.3×7.7	0.12	45	2700

rated voltage (V)	Capacitance (μF)	Dimensions D×L (mm)	tgδ (120Hz)	ESR (mΩ) (100kHz)	Ripple current mA,rms (100kHz)	
40	27	6.3×7.7	0.12	45	2700	
	33	6.3×7.7	0.12	45	2700	
	39	6.3×7.7	0.12	45	2700	
	47	8×10	0.12	35	2900	
	56	8×10	0.12	35	2900	
	68	8×10	0.12	35	2900	
	82	8×11.7	0.12	24	3100	
	100	8×11.7	0.12	24	3100	
	120	10×10	0.12	22	3300	
	150	10×10	0.12	22	3300	
	180	10×12.3	0.12	20	3400	
	220	10×12.3	0.12	20	3400	
	270	10×16	0.12	20	3800	
	330	10×16	0.12	20	3800	
	390	10×16	0.12	20	3800	
	390	12.5×13.5	0.12	20	4200	
	470	12.5×13.5	0.12	20	4200	
	470	12.5×16	0.12	20	4400	
	560	12.5×16	0.12	20	4400	
	680	16×16.5	0.12	20	4800	
	820	16×16.5	0.12	20	4800	
	1000	16×16.5	0.12	20	4800	
	1200	16×21.5	0.13	18	5300	
	1200	18×16.5	0.13	18	5300	
	1500	16×21.5	0.13	18	6200	
	1500	18×21.5	0.13	18	6200	
	1800	18×21.5	0.13	18	6200	
	50	4.7	6.3×5.4	0.12	50	1900
		5.6	6.3×5.4	0.12	50	1900
		6.8	6.3×5.4	0.12	50	1900
		8.2	6.3×5.4	0.12	50	1900
		10	6.3×5.4	0.12	50	1900
12		6.3×5.4	0.12	50	1900	
15		6.3×7.7	0.12	45	2700	
18		6.3×7.7	0.12	45	2700	
22		6.3×7.7	0.12	45	2700	
27		8×10	0.12	35	2900	
33		8×10	0.12	35	2900	
39		8×11.7	0.12	24	3100	
47	8×11.7	0.12	24	3100		
56	8×11.7	0.12	24	3100		
68	8×11.7	0.12	24	3100		

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- List of product specifications and technical parameters

rated voltage (V)	Capacitance (μF)	Dimensions D×L (mm)	tgδ (120Hz)	ESR (mΩ) (100kHz)	Ripple current mA,rms (100kHz)
50	82	10×10	0.12	22	3300
	100	10×10	0.12	22	3300
	100	10×12.3	0.12	20	3400
	120	10×12.3	0.12	20	3400
	150	10×12.3	0.12	20	3400
	180	10×16	0.12	20	3500
	220	10×16	0.12	20	3500
	220	12.5×13.5	0.12	20	3800
	270	12.5×13.5	0.12	20	3800
	270	12.5×16	0.12	20	4000
	330	12.5×16	0.12	20	4000
	470	16×16.5	0.12	18	4500
	560	16×16.5	0.12	18	4500
	560	18×16.5	0.12	18	4500
	680	16×21.5	0.12	18	5100
	680	18×16.5	0.12	18	5500
1000	18×21.5	0.12	18	5700	
63	4.7	6.3×5.4	0.12	50	1900
	5.6	6.3×5.4	0.12	50	1900
	6.8	6.3×5.4	0.12	50	1900
	8.2	6.3×5.4	0.12	50	1900
	10	6.3×7.7	0.12	45	2700
	12	6.3×7.7	0.12	45	2700
	15	6.3×7.7	0.12	45	2700
	18	8×10	0.12	35	2900
	22	8×10	0.12	35	2900
	27	8×10	0.12	35	2900
	33	8×11.7	0.12	24	3100
	39	8×11.7	0.12	24	3100
	47	8×11.7	0.12	24	3100
	56	8×11.7	0.12	24	3100
	68	10×10	0.12	22	3300
	82	10×12.3	0.12	20	3400
	100	10×12.3	0.12	20	3400
	120	10×16	0.12	20	3500
	150	10×16	0.12	20	3500
	150	12.5×13.5	0.12	20	3500
180	12.5×16	0.12	20	3800	
270	16×16.5	0.12	18	4500	
330	16×16.5	0.12	18	4500	

rated voltage (V)	Capacitance (μF)	Dimensions D×L (mm)	tgδ (120Hz)	ESR (mΩ) (100kHz)	Ripple current mA,rms (100kHz)
63	390	16×21.5	0.12	20	4700
	390	18×16.5	0.12	20	4700
	470	16×21.5	0.12	18	4700
	470	18×16.5	0.12	18	4700
	560	18×21.5	0.12	18	5000
	680	18×21.5	0.12	18	5000
80	10	8×10	0.12	60	1700
	12	8×10	0.12	60	1700
	15	8×10	0.12	60	1700
	18	8×11.7	0.12	50	1900
	22	8×11.7	0.12	50	1900
	27	8×11.7	0.12	50	1900
	33	10×10	0.12	45	2700
	39	10×10	0.12	45	2700
	47	10×12.3	0.12	35	2900
	56	10×12.3	0.12	35	2900
	68	10×16	0.12	35	2900
	82	10×16	0.12	35	2900
	100	10×16	0.12	35	2900
	100	12.5×13.5	0.12	30	3300
120	12.5×16	0.12	30	3500	
150	12.5×16	0.12	30	3500	
180	16×16.5	0.12	28	3700	
220	16×16.5	0.12	28	3700	
270	16×21.5	0.12	28	4500	
270	18×16.5	0.12	28	4500	
330	16×21.5	0.12	28	4500	
330	18×16.5	0.12	28	5000	
390	18×21.5	0.12	26	5600	
470	18×21.5	0.12	26	5600	
560	18×21.5	0.12	26	5600	
100	8.2	8×10	0.12	60	1700
	10	8×10	0.12	60	1700
	12	8×11.7	0.12	50	1900
	15	8×11.7	0.12	50	1900
	18	8×11.7	0.12	50	1900
	22	10×10	0.12	45	2700
	27	10×10	0.12	45	2700
	33	10×12.3	0.12	35	2900
	39	10×12.3	0.12	35	2900

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rated voltage (V)	Capacitance (μF)	Dimensions D×L (mm)	tgδ (120Hz)	ESR (mΩ) (100kHz)	Ripple current mA,rms (100kHz)
100	47	10×16	0.12	35	2900
	56	10×16	0.12	35	2900
	56	12.5×13.5	0.12	30	3100
	68	12.5×16	0.12	30	3100
	100	16×16.5	0.12	30	3900

rated voltage (V)	Capacitance (μF)	Dimensions D×L (mm)	tgδ (120Hz)	ESR (mΩ) (100kHz)	Ripple current mA,rms (100kHz)
100	47	10×16	0.12	35	2900
	56	10×16	0.12	35	2900
	56	12.5×13.5	0.12	30	3100
	68	12.5×16	0.12	30	3100
	100	16×16.5	0.12	30	3900

■ Ripple current frequency coefficient

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

PART NUMBER EXAMPLE

CABAH 477 M 1C T 080117

