

# FA Series for Large Backup Current Capacitors

The FA series is suitable for supplying a large current in a short time.

These capacitors are ideal for momentarily backing up a high-current, short-time load in an electronic system (in the event of momentary power failure).

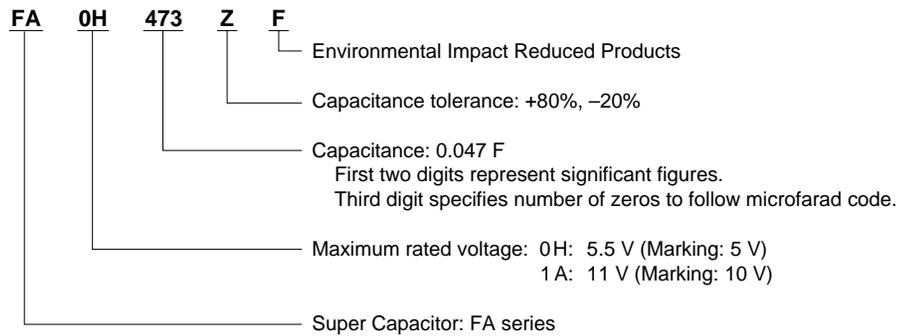
## Features

- Extremely low equivalent series resistance (ESR) ideal for supplying backup current of 10 mA to 1 A for a short time
- High breakdown voltage (maximum operating voltage: 11 V) that can drive microcomputers and actuators

## Applications

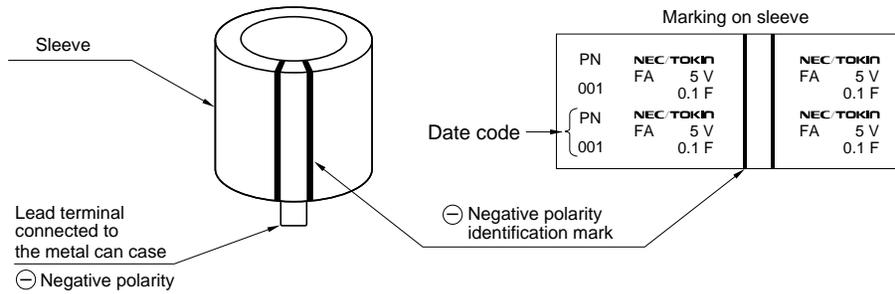
Momentary backup of microcomputers and DRAMs and auxiliary power supply of mechanical systems (motors, relays, electromagnetic valves)

## Part Number System

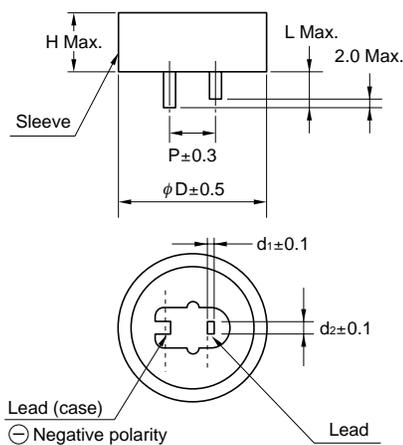


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## Markings



## Dimensions



Part No.	Dimensions mm (inch)						Weight g (oz)
	D	H	P	d <sub>1</sub>	d <sub>2</sub>	L	
FA0H473ZF	16.0 (0.630)	15.5 (0.610)	5.1 (0.2)	0.4 (0.016)	1.2 (0.047)	5.0 (0.197)	6.2 (0.219)
FA0H104ZF	21.5 (0.846)	15.5 (0.610)	7.6 (0.3)	0.6 (0.024)	1.2 (0.047)	5.5 (0.217)	12 (0.423)
FA0H224ZF	28.5 (1.122)	16.5 (0.650)	10.2 (0.4)	0.6 (0.024)	1.4 (0.055)	9.5 (0.374)	25 (0.882)
FA0H474ZF	36.5 (1.437)	16.5 (0.650)	15 (0.591)	0.6 (0.024)	1.7 (0.067)	9.5 (0.374)	42 (1.482)
FA0H105ZF	44.5 (1.752)	18.5 (0.728)	20 (0.787)	1.0 (0.039)	1.4 (0.055)	9.5 (0.374)	65 (2.293)
FA1A223ZF	16.0 (0.630)	25.0 (0.984)	5.1 (0.2)	0.4 (0.016)	1.2 (0.047)	5.0 (0.197)	7.5 (0.265)
FA1A104ZF	28.5 (1.122)	25.5 (1.004)	10.2 (0.4)	0.6 (0.024)	1.4 (0.055)	9.5 (0.374)	32 (1.129)
FA1A224ZF	36.5 (1.437)	27.5 (1.083)	15 (0.591)	1.0 (0.039)	1.4 (0.055)	9.5 (0.374)	55 (1.940)
FA1A474ZF	44.5 (1.752)	28.5 (1.122)	20 (0.787)	1.0 (0.039)	1.4 (0.055)	9.5 (0.374)	83 (2.928)

Note: Weight values are typical.

## Standard Ratings

Part Number	Max. Rated Voltage (VDC)	Nominal Capacitance		Max. Current at 30 minutes (mA)	Max. ESR (at 1 kHz) (Ω)
		Charge System (F)	Discharge System (F)		
FA0H473ZF	5.5	0.047	0.075	0.071	20
FA0H104ZF	5.5	0.1	0.16	0.15	8
FA0H224ZF	5.5	0.22	0.35	0.33	5
FA0H474ZF	5.5	0.47	0.75	0.71	3.5
FA0H105ZF	5.5	1.0	1.6	1.5	2.5
FA1A223ZF	11	0.022	0.035	0.066	20
FA1A104ZF	11	0.1	0.16	0.30	8
FA1A224ZF	11	0.22	0.35	0.66	6
FA1A474ZF	11	0.47	0.75	1.41	4



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## Specifications: FA Series

Item		Specifications		Test Conditions Conforming to JIS C 5102-1994						
Operating Temperature Range		-25°C to 70°C								
Maximum Rated Voltage		5.5 VDC, 11.0 VDC								
Nominal Capacitance Range		Refer to standard ratings								
Capacitance Allowance		+80 %, -20 %		Refer to characteristics measuring conditions						
Equivalent Series Resistance		Refer to standard ratings		Refer to characteristics measuring conditions						
Current (30-minute value)		Refer to standard ratings		Refer to characteristics measuring conditions						
Temperature Variation of Characteristics	At min. temp. (-25°C) Step 2	Capacitance	More than 70 % of initial value	Conforms to 7.14 Phase 1 : +25±2.0°C Phase 2 : -25±2.0°C Phase 3 : +25±2.0°C Phase 4 : +70±2.0°C Phase 5 : +25±2.0°C						
		Equivalent Series Resistance	Not to exceed 3 times initial value							
		Current at 30 minutes	Not to exceed 1.5 CV (mA)							
	At max. temp. (+70°C) Step 4	Capacitance	Not to exceed 150 % of initial value							
		Equivalent Series Resistance	Not to exceed initial requirement							
		Current at 30 minutes	Not to exceed 1.5 CV (mA)							
	At room temp. (+25°C) Step 5	Capacitance	Not to change more than ±20 % from initial value							
		Equivalent Series Resistance	Not to exceed initial requirement							
		Current at 30 minutes	Not to exceed initial requirement							
Lead Strength (Tensile)		No loosening nor permanent damage of the leads		Conforms to 8.1.2 (1) <table border="1"> <tr> <td rowspan="2">5.5 VDC</td> <td>0.047 F to 0.22 F: 1 kg 10 sec</td> </tr> <tr> <td>0.47 F to 1.0 F: 2.5 kg 10 sec</td> </tr> <tr> <td rowspan="2">11 VDC</td> <td>0.022 F to 0.1 F: 1 kg 10 sec</td> </tr> <tr> <td>0.22 F to 0.47 F: 2.5 kg 10 sec</td> </tr> </table>	5.5 VDC	0.047 F to 0.22 F: 1 kg 10 sec	0.47 F to 1.0 F: 2.5 kg 10 sec	11 VDC	0.022 F to 0.1 F: 1 kg 10 sec	0.22 F to 0.47 F: 2.5 kg 10 sec
5.5 VDC	0.047 F to 0.22 F: 1 kg 10 sec									
	0.47 F to 1.0 F: 2.5 kg 10 sec									
11 VDC	0.022 F to 0.1 F: 1 kg 10 sec									
	0.22 F to 0.47 F: 2.5 kg 10 sec									
Vibration Resistance		Capacitance	Meet initial requirement	Conforms to 8.2.3 Frequency: 10 to 55 Hz Test duration: 6 hours						
		Equivalent Series Resistance	Meet initial requirement							
		Current at 30 minutes	Meet initial requirement							
Solderability		3/4 or more of the pin surface should be covered with new solder		Conforms to 8.4 245 ± 5°C, 5 ± 0.5 sec. Immersion depth: 2.5 mm from body						
Soldering Heat Resistance		Capacitance	Meet initial requirement	Conforms to 8.5 260 ± 10°C, 10 ± 1 sec. Immersion depth: 2.5 mm from body						
		Equivalent Series Resistance	Meet initial requirement							
		Current at 30 minutes	Meet initial requirement							
Temperature Cycle		Capacitance	Meet initial requirement	Conforms to 9.3 Temperature condition: -25°C → normal temperature → +70°C normal temperature Number of cycles : 5 cycles						
		Equivalent Series Resistance	Meet initial requirement							
		Current at 30 minutes	Meet initial requirement							
Humidity Resistance		Capacitance	More than 90 % of initial requirement	Conforms to 9.5 40 ± 2°C, 90 to 95 % RH 240 ± 8 hours						
		Equivalent Series Resistance	Not to exceed 120 % of initial requirement							
		Current at 30 minutes	Not to exceed 120 % of initial requirement							
High Temperature Load		Capacitance	More than 85 % of initial requirement	Conforms to 9.10 70 ± 2°C 5.5 V applied for 5 V type 11 V applied for 10 V type 1 000 <sup>+48</sup> <sub>-0</sub> hours						
		Equivalent Series Resistance	Not to exceed 120 % of initial requirement							
		Current at 30 minutes	Not to exceed 200 % of initial requirement							



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