Surface Mount Type

Series: FC Type : V

Country of Origin
Japan
Malaysia (ϕ4, ϕ5, ϕ6.3,ϕ8×6.2)

■ Features

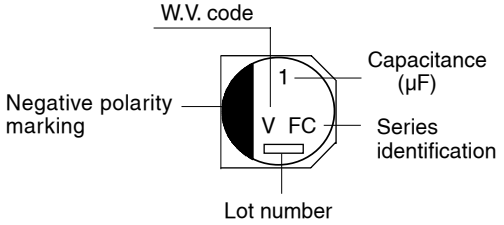
Endurance : 105°C 1000 h
Low impedance (1/2 for HA series)
5.4 mm height (≦ϕ6.3)
Vibration-proof product is available upon request.(ϕ8 ≦)
RoHS directive compliant(Parts No:EEE∗)

■ Specifications

Category temp. range	-40 to +105°C							
Rated W.V. Range	6.3 to 50 V .DC							
Nominal Cap. Range	1 to 1500 μ F							
Capacitance Tolerance	±20 % (120Hz/+20°C)							
DC Leakage Current	I ≦ 0.01 CV or 3(μ A) after 2 minutes (Whichever is greater)							
tan δ	W.V. (V)	6.3	10	16	25	35	50	(120Hz/+20°C) (max.)
	tan δ	0.26	0.19	0.16	0.14	0.12	0.12	
Characteristics at Low Temperature	W.V. (V)	6.3	10	16	25	35	50	(Impedance ratio at 120 Hz)
	-25 / +20 °C	2	2	2	2	2	2	
	-40 / +20 °C	3	3	3	3	3	3	
Endurance	After applying rated working voltage for 1000 hours at +105±2°C and then being stabilized at +20°C, capacitors shall meet the following limits.							
	Capacitance change	±20% of initial measured value						
	tan δ	≦ 200 % of initial specified value						
	DC leakage current	≦ initial specified value						
Shelf Life	After storage for 1000 hours at +105±2°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet the limits specified in Endurance.(With voltage treatment)							
Resistance to Soldering Heat	After reflow soldering and then being stabilized at +20°C, capacitor shall meet the following limits.							
	Capacitance change	±10% of initial measured value						
	tan δ	≦ initial specified value						
	DC leakage current	≦ initial specified value						

■ Marking

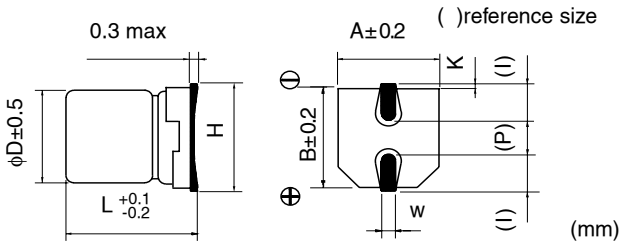
Example:35V 1 μF (Polarized)



W.V. code

V	6.3	10	16	25	35	50
Code	j	A	C	E	V	H

■ Dimensions in mm (not to scale)



Size code	D	L	A,B	H	I	W	P	K
B	4.0	5.4	4.3	5.5MAX	1.8	0.65±0.1	1.0	0.35 -0.20 to +0.15
C	5.0	5.4	5.3	6.5MAX	2.2	0.65±0.1	1.5	0.35 -0.20 to +0.15
D	6.3	5.4	6.6	7.8MAX	2.6	0.65±0.1	1.8	0.35 -0.20 to +0.15
E	8.0	6.2	8.3	9.5MAX	3.4	0.65±0.1	2.2	0.35 -0.20 to +0.15
F	8.0	10.2	8.3	10.0MAX	3.4	0.90±0.2	3.1	0.70 ±0.2
G	10.0	10.2	10.3	12.0MAX	3.5	0.90±0.2	4.6	0.70 ±0.2

■ Case size

Cap.(μF) \ W.V.(V)	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50(1H)
1 to 3.3					B	B
4.7					B	C
6.8				B	C	
10			B		C	D
22	B		C	D	D	E
33		C		D	E	F
47	C		D	E	E	G
68	D		E	F		
100	D	E	E	F	G	G
150		E				
220	E	F	G	G	G	G
330	F		G	G	G	
470		G	G	G		
680			G			
1000	G	G				
1500	G					

■ Impedance (Ω) (100kHz/+20°C)

(6.3 to 35W.V)

Size Code	B	C	D	E	F	G
Impedance	3.0	1.8	1.0	0.4	0.3	0.15

(50W.V)

Size Code	B	C	D	E	F	G
Impedance	5.0	3.0	2.0	0.7	0.6	0.3

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Apr. 2005

■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size Dia. (mm)	Case size Length (mm)	Case size Size Code	Specification Ripple current (100kHz) (+105°C) (mA)	Specification Impedance (100kHz) (+20°C) (Ω)	Part No. (RoHS: not compliant)	Reflow	Part No. (RoHS: compliant)	Reflow	Min. Packaging Q'ty Taping (pcs)
6.3	22	4	5.4	B	60	3.00	EEVFC0J220R	(1)	EEEFC0J220R	(4)	2000
	47	5	5.4	C	95	1.80	EEVFC0J470R	(1)	EEEFC0J470R	(4)	1000
	68	6.3	5.4	D	140	1.00	EEVFC0J680P	(1)	EEEFC0J680P	(4)	1000
	100	6.3	5.4	D	140	1.00	EEVFC0J101P	(1)	EEEFC0J101P	(4)	1000
	220	8	6.2	E	230	0.40	EEVFC0J221P	(2)	EEEFC0J221P	(5)	1000
	330	8	10.2	F	450	0.30	EEVFC0J331P	(2)	EEEFC0J331P	(5)	500
	1000	10	10.2	G	670	0.15	EEVFC0J102P	(2)	EEEFC0J102P	(5)	500
	1500	10	10.2	G	670	0.15	EEVFC0J152P	(2)	EEEFC0J152P	(5)	500
10	33	5	5.4	C	95	1.80	EEVFC1A330R	(1)	EEEFC1A330R	(4)	1000
	100	8	6.2	E	230	0.40	EEVFC1A101P	(2)	EEEFC1A101P	(5)	1000
	150	8	6.2	E	230	0.40	EEVFC1A151P	(2)	EEEFC1A151P	(5)	1000
	220	8	10.2	F	450	0.30	EEVFC1A221P	(2)	EEEFC1A221P	(5)	500
	470	10	10.2	G	670	0.15	EEVFC1A471P	(2)	EEEFC1A471P	(5)	500
	1000	10	10.2	G	670	0.15	EEVFC1A102P	(2)	EEEFC1A102P	(5)	500
16	10	4	5.4	B	60	3.00	EEVFC1C100R	(1)	EEEFC1C100R	(4)	2000
	22	5	5.4	C	95	1.80	EEVFC1C220R	(1)	EEEFC1C220R	(4)	1000
	47	6.3	5.4	D	140	1.00	EEVFC1C470P	(1)	EEEFC1C470P	(4)	1000
	68	8	6.2	E	230	0.40	EEVFC1C680P	(2)	EEEFC1C680P	(5)	1000
	100	8	6.2	E	230	0.40	EEVFC1C101P	(2)	EEEFC1C101P	(5)	1000
	220	10	10.2	G	670	0.15	EEVFC1C221P	(2)	EEEFC1C221P	(5)	500
	330	10	10.2	G	670	0.15	EEVFC1C331P	(2)	EEEFC1C331P	(5)	500
	470	10	10.2	G	670	0.15	EEVFC1C471P	(2)	EEEFC1C471P	(5)	500
	680	10	10.2	G	670	0.15	EEVFC1C681P	(2)	EEEFC1C681P	(5)	500
25	6.8	4	5.4	B	60	3.00	EEVFC1E6R8R	(1)	EEEFC1E6R8R	(4)	2000
	22	6.3	5.4	D	140	1.00	EEVFC1E220P	(1)	EEEFC1E220P	(4)	1000
	33	6.3	5.4	D	140	1.00	EEVFC1E330P	(1)	EEEFC1E330P	(4)	1000
	47	8	6.2	E	230	0.40	EEVFC1E470P	(2)	EEEFC1E470P	(5)	1000
	68	8	10.2	F	450	0.30	EEVFC1E680P	(2)	EEEFC1E680P	(5)	500
	100	8	10.2	F	450	0.30	EEVFC1E101P	(2)	EEEFC1E101P	(5)	500
	220	10	10.2	G	670	0.15	EEVFC1E221P	(2)	EEEFC1E221P	(5)	500
	330	10	10.2	G	670	0.15	EEVFC1E331P	(2)	EEEFC1E331P	(5)	500
	470	10	10.2	G	670	0.15	EEVFC1E471P	(2)	EEEFC1E471P	(5)	500
35	1	4	5.4	B	60	3.00	EEVFC1V1R0R	(1)	EEEFC1V1R0R	(4)	2000
	2.2	4	5.4	B	60	3.00	EEVFC1V2R2R	(1)	EEEFC1V2R2R	(4)	2000
	3.3	4	5.4	B	60	3.00	EEVFC1V3R3R	(1)	EEEFC1V3R3R	(4)	2000
	4.7	4	5.4	B	60	3.00	EEVFC1V4R7R	(1)	EEEFC1V4R7R	(4)	2000
	6.8	5	5.4	C	95	1.80	EEVFC1V6R8R	(1)	EEEFC1V6R8R	(4)	1000
	10	5	5.4	C	95	1.80	EEVFC1V100R	(1)	EEEFC1V100R	(4)	1000
	22	6.3	5.4	D	140	1.00	EEVFC1V220P	(1)	EEEFC1V220P	(4)	1000
	33	8	6.2	E	230	0.40	EEVFC1V330P	(2)	EEEFC1V330P	(5)	1000
	47	8	6.2	E	230	0.40	EEVFC1V470P	(2)	EEEFC1V470P	(5)	1000
	100	10	10.2	G	670	0.15	EEVFC1V101P	(2)	EEEFC1V101P	(5)	500
	220	10	10.2	G	670	0.15	EEVFC1V221P	(2)	EEEFC1V221P	(5)	500

The taping dimensions are explained on p.187 of our Catalog. Endurance : 105°C 1000h
Please use it as a reference guide.
Reflow Profile(Fig-1 to Fig-5) listed on the last page.

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■ Standard Products

W.V. (V)	Cap. (±20%) (μF)	Case size Dia. (mm)	Case size Length (mm)	Case size Size Code	Specification Ripple current (100kHz) (+105°C) (mA)	Specification Impedance (100kHz) (+20°C) (Ω)	Part No. (RoHS: not compliant)	Reflow	Part No. (RoHS: compliant)	Reflow	Min. Packaging Q'ty Taping (pcs)
35	330	10	10.2	G	670	0.15	EEVFC1V331P	(2)	EEEFC1V331P	(5)	500
50	1	4	5.4	B	30	5.00	EEVFC1H1R0R	(1)	EEEFC1H1R0R	(4)	2000
	2.2	4	5.4	B	30	5.00	EEVFC1H2R2R	(1)	EEEFC1H2R2R	(4)	2000
	3.3	4	5.4	B	30	5.00	EEVFC1H3R3R	(1)	EEEFC1H3R3R	(4)	2000
	4.7	5	5.4	C	50	3.00	EEVFC1H4R7R	(1)	EEEFC1H4R7R	(4)	1000
	10	6.3	5.4	D	70	2.00	EEVFC1H100P	(1)	EEEFC1H100P	(4)	1000
	22	8	6.2	E	120	0.70	EEVFC1H220P	(2)	EEEFC1H220P	(5)	1000
	33	8	10.2	F	300	0.60	EEVFC1H330P	(2)	EEEFC1H330P	(5)	500
	47	10	10.2	G	500	0.30	EEVFC1H470P	(2)	EEEFC1H470P	(5)	500
	100	10	10.2	G	500	0.30	EEVFC1H101P	(2)	EEEFC1H101P	(5)	500
	220	10	10.2	G	500	0.30	EEVFC1H221P	(2)	EEEFC1H221P	(5)	500

The taping dimensions are explained on p.187 of our Catalog.
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Endurance : 105°C 1000h

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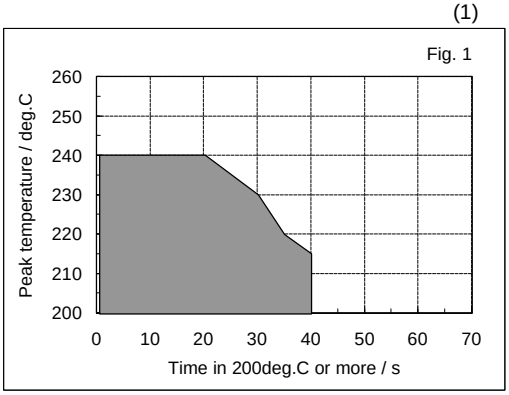
Pre-fix	Suffix	Case Diameter	RoHS Compliant	Terminal Finish	Reflow Condition		Reflow Chart
					Peak Temperature	Time above 200℃	
ECE-V	R	3mm to 5mm	No	Sn-Pb	240℃ for 5 seconds	20 seconds	(1) Fig.1
	P	6mm	No	Sn-Pb	240℃ for 5 seconds	20 seconds	(1) Fig.1
	P	8mm to 10mm	No	Sn-Pb	230℃ for 5 seconds	20 seconds	(2) Fig.2
EEV-	R	4mm to 5mm	No	Sn-Pb	240℃ for 5 seconds	20 seconds	(1) Fig.1
	P	6mm	No	Sn-Pb	240℃ for 5 seconds	20 seconds	(1) Fig.1
	P	8mm to 10mm	No	Sn-Pb	230℃ for 5 seconds	20 seconds	(2) Fig.2
	Q	12.5mm	Yes	Sn	230℃ for 5 seconds	20 seconds	(2) Fig.2 (Except for EB series)
							(3) Fig.3 (EB series only)
	M	16mm to 18mm	Yes	Sn	230℃ for 5 seconds	20 seconds	(2) Fig.2 (Except for EB series)
							(3) Fig.3 (EB series only)
EEE-	R	3mm to 5mm	Yes	Sn-Bi	250℃ for 5 seconds	60 seconds	(4) Fig.4
	P	6mm	Yes	Sn-Bi	250℃ for 5 seconds	60 seconds	(4) Fig.4
	P	8mm to 10mm	Yes	Sn-Bi	235℃ for 5 seconds	60 seconds	(5) Fig.5

(1)



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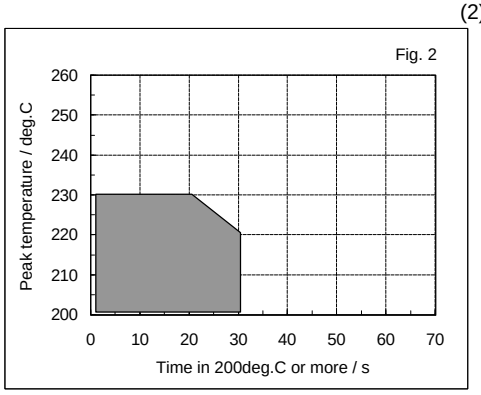

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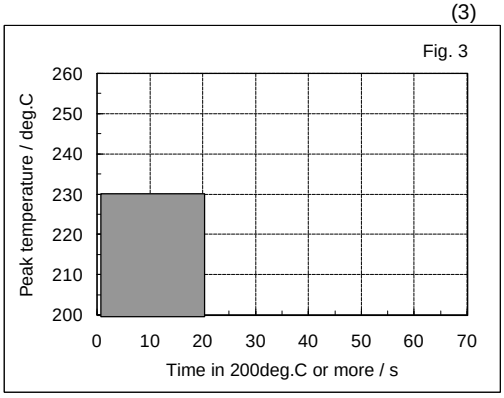

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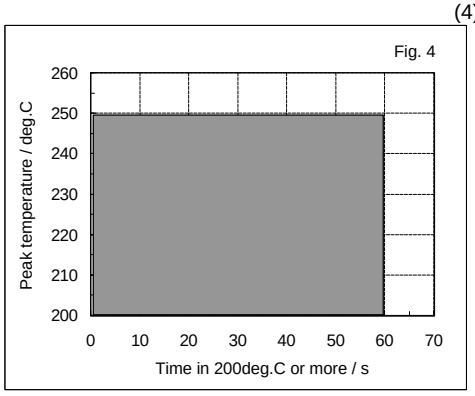
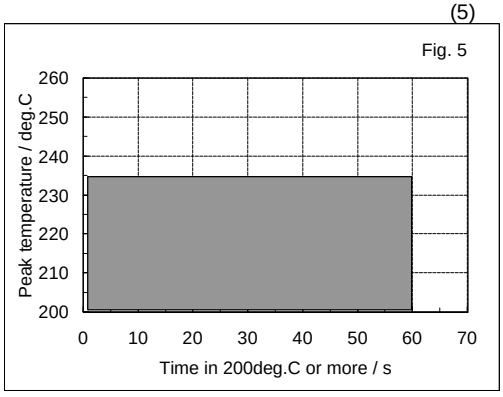
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