Panasonic Aluminum Electrolytic Capacitors (SMD Type)

Surface Mount Type

Series: FC Type: V



HA



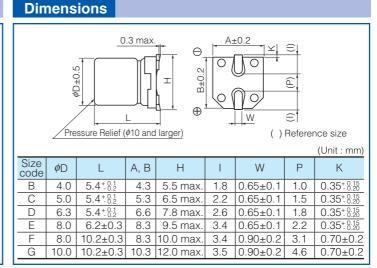
Features

- Endurance: 105 °C 1000 h
- Low impedance (1/2 for HA series)
- ◆ Vibration-proof product is available upon request. (Ø8 mm and larger)
- RoHS compliant

Specifications									
Category temperature range	−40 °C to +105 °C								
Rated voltage range	6.3 V.DC to 50 V.DC								
Capacitance range	1 μF to 1500 μF								
Capacitance tolerance	±20 % (120 Hz/+20 °C)								
Leakage current	I ≤ 0.01 CV or 3 (μA) After 2 minutes (Whichever is greater)								
Dissipation factor (tan δ)	Please see the attached characteristics list								
Characteristics at low temperature	V.DC	6.3	10	16	25	35	50		
	Z(-25 °C) / Z(+20 °C)	2	2	2	2	2	2	(Impedance ratio at 120 Hz)	
	Z(-40 °C) / Z(+20 °C)	3	3	3	3	3	3		
	After applying rated working voltage for 1000 hours at +105 °C±2 °C and then being stabilized								
	at +20 °C, Capacitors shall meet the following limits.								
Endurance	Capacitance change Within ±20 % of the initial value								
	tan δ	tan δ ≤200 % of the initial limit							
	DC leakage current Within the initial limit								
Shelf life	After storage for 1000 hours at +105 °C±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 Within ±10 % of the initial value								
	tan δ	Within the initial limit							
	DC leakage current	DC leakage current Within the initial limit							
AEC-Q200	AEC-Q200 compliant								

Frequency correction factor for ripple current									
Frequency (Hz)	50, 60	120	1 k	10 k	100 k to				
Correction factor	0.70	0.75	0.90	0.95	1.00				

Marking Example: 6.3 V.DC 22 µF Marking color: BLACK Negative polarity marking (-) Capacitance (µF) -Series identification -Mark for Lead-Free products (Black dot) Rated voltage code Lot number R. Voltage 6.3 10 16 25 35 50 (V.DC) Code С Ε ٧ Н Α





Aluminum Electrolytic Capacitors (SMD Type)

Characteristics list

Endurance: 105 °C 1000 h

	Endurance:									105 °C 1000 n
		Case size (mm)			Specification					Min. Packaging Q'ty
Rated voltage (V.DC)	Cap. (±20 %) (µF)	φD	L	Size code	Ripple current (100 kHz) (+105 °C) (mA r.m.s.)	Impedance (100 kHz) (+20 °C) (Ω)	tan <i>δ</i> (120 Hz) (+20 °C)	Part No.	Reflow	Taping (pcs)
	22	4	5.4	В	60	3.00	0.26	EEEFC0J220R	(1)	2000
6.3	47	5	5.4	С	95	1.80	0.26	EEEFC0J470R	(1)	1000
	68	6.3	5.4	D	140	1.00	0.26	EEEFC0J680P	(1)	1000
	100	6.3	5.4	D	140	1.00	0.26	EEEFC0J101P	(1)	1000
	220	8	6.2	Е	230	0.40	0.26	EEEFC0J221P	(2)	1000
	330	8	10.2	F	450	0.30	0.26	EEEFC0J331P	(2)	500
	1000	10	10.2	G	670	0.15	0.26	EEEFC0J102P	(2)	500
	1500	10	10.2	G	670	0.15	0.26	EEEFC0J152P	(2)	500
	33	5	5.4	С	95	1.80	0.19	EEEFC1A330R	(1)	1000
Ì	100	8	6.2	Е	230	0.40	0.19	EEEFC1A101P	(2)	1000
4.0	150	8	6.2	Е	230	0.40	0.19	EEEFC1A151P	(2)	1000
10	220	8	10.2	F	450	0.30	0.19	EEEFC1A221P	(2)	500
	470	10	10.2	G	670	0.15	0.19	EEEFC1A471P	(2)	500
	1000	10	10.2	G	670	0.15	0.19	EEEFC1A102P	(2)	500
	10	4	5.4	В	60	3.00	0.16	EEEFC1C100R	(1)	2000
	22	5	5.4	C	95	1.80	0.16	EEEFC1C220R	(1)	1000
	47	6.3	5.4	D	140	1.00	0.16	EEEFC1C470P	(1)	1000
	68	8	6.2	E	230	0.40	0.16	EEEFC1C680P	(2)	1000
16	100	8	6.2	E	230	0.40	0.16	EEEFC1C101P	(2)	1000
10	220	10	10.2	G	670	0.40	0.16	EEEFC1C221P	(2)	500
	330	10	10.2	G	670	0.15	0.16	EEEFC1C331P	(2)	500
	470	10	10.2	G	670	0.15	0.16	EEEFC1C471P	(2)	500
	680	10	10.2	G	670	0.15	0.16	EEEFC1C681P	(2)	500
	6.8	4	5.4	В	60	3.00	0.10	EEEFC1E6R8R	(1)	2000
	22	6.3	5.4	D	140	1.00	0.14	EEEFC1E220P	(1)	1000
	33	6.3	5.4	D	140	1.00	0.14	EEEFC1E330P	(1)	1000
	47	8	6.2	E	230	0.40	0.14	EEEFC1E470P	(2)	1000
25	68	8	10.2	F	450	0.40	0.14	EEEFC1E680P	(2)	500
25	100	8	10.2	F	450	0.30	0.14	EEEFC1E101P	(2)	500
	220	10	10.2	G	670	0.30	0.14	EEEFC1E221P	(2)	500
	330	10	10.2	G	670	0.15	0.14	EEEFC1E331P	(2)	500
35	470	10	10.2	G	670	0.15	0.14	EEEFC1E471P	(2)	500
						3.00				
	2.2	4	5.4 5.4	B B	60 60		0.12	EEEFC1V1R0R	(1)	2000
	3.3	4	5.4	В	60	3.00	0.12 0.12	EEEFC1V2R2R EEEFC1V3R3R	(1)	2000
	4.7	4	5.4	В	60	+	0.12	EEEFC1V4R7R	(1)	2000
	6.8	5	5.4	С	95	3.00 1.80	0.12	EEEFC1V4R/R	(1)	1000
		5		C		+				
	10		5.4 5.4		95	1.80	0.12	EEEFC1V100R EEEFC1V220P	(1)	1000
	22 33	6.3	6.2	D E	140 230	1.00	0.12	EEEFC1V330P	(1)	1000
	47	8		E		0.40	0.12	EEEFC1V470P	(2)	
	100	10	6.2	G	230 670	0.40	0.12	EEEFC1V470P	(2)	1000
			10.2			0.15	0.12		(2)	500
	220	10	10.2	G	670	0.15	0.12	EEEFC1V221P	(2)	500
	330	10	10.2	G	670	0.15	0.12	EEEFC1V331P	(2)	500
	1	4	5.4	В	30	5.00	0.12	EEEFC1H1R0R	(1)	2000
	2.2	4	5.4	В	30	5.00	0.12	EEEFC1H2R2R	(1)	2000
	3.3	4	5.4	В	30	5.00	0.12	EEEFC1H3R3R	(1)	2000
	4.7	5	5.4	С	50	3.00	0.12	EEEFC1H4R7R	(1)	1000
	10	6.3	5.4	D	70	2.00	0.12	EEEFC1H100P	(1)	1000
	22	8	6.2	E	120	0.70	0.12	EEEFC1H220P	(2)	1000
	33	8	10.2	F	300	0.60	0.12	EEEFC1H330P	(2)	500
	47	10	10.2	G	500	0.30	0.12	EEEFC1H470P	(2)	500
	100	10	10.2	G	500	0.30	0.12	EEEFC1H101P	(2)	500
	220	10	10.2	G	500	0.30	0.12	EEEFC1H221P	(2)	500

Please refer to the page of "Reflow Profile" and "The Taping Dimensions"

[·] When requesting vibration-proof product, please put the last "V" instead to "P"