Surface Mount Type

Series : **FK** Type : **V**
High temperature
Lead-Free reflow (suffix : A*)

Features

- Endurance : 105 °C 2000 h
- Low impedance (40 % to 60 % less than FC series)
  Miniaturized (30 % to 50 % less than FC series)
- Vibration-proof product is available upon request. (φ8 mm and larger)
- RoHS compliant

Specifications

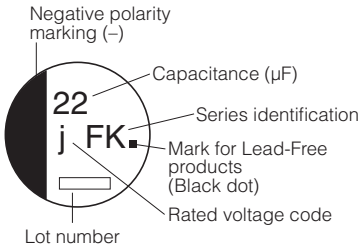
Category temperature range	–55 °C to +105 °C						
Rated voltage range	6.3 V.DC to 35 V.DC						
Capacitance range	4.7 μF to 1500 μF						
Capacitance tolerance	±20 % (120 Hz/+20 °C)						
Leakage current	I ≦ 0.01 CV or 3 (μA) After 2 minutes (Whichever is greater)						
Dissipation factor (tan δ)	Please see the attached characteristics list						
Characteristics at low temperature	V.DC	6.3	10	16	25	35	(Impedance ratio at 120 Hz)
	Z(–25 °C)/Z(+20 °C)	2	2	2	2	2	
	Z(–40 °C)/Z(+20 °C)	3	3	3	3	3	
	Z(–55 °C)/Z(+20 °C)	4	4	4	3	3	
Endurance	After applying rated working voltage for 2000 hours at +105 °C±2 °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.						
	Capacitance change	Within ±30 % of the initial value					
	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	Within the initial limit					
AEC-Q200	AEC-Q200 compliant						

Frequency correction factor for ripple current

Capacitance (μF) \ Frequency (Hz)	120	1 k	10 k	100 k to
4.7 to 470	0.65	0.85	0.95	1.00
680 to 1500	0.70	0.90	0.95	1.00

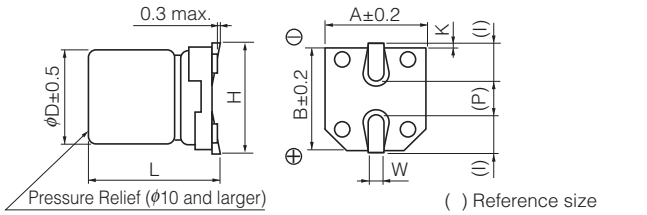
Marking

Example : 6.3 V.DC 22 μF
Marking color : BLACK



R. Voltage (V.DC)	6.3	10	16	25	35
Code	j	A	C	E	V

Dimensions



( ) Reference size

(Unit : mm)

Size code	φD	L	A, B	H	I	W	P	K
B	4.0	5.8±0.3	4.3	5.5 max.	1.8	0.65±0.1	1.0	$0.35^{+0.15}_{-0.20}$
C	5.0	5.8±0.3	5.3	6.5 max.	2.2	0.65±0.1	1.5	$0.35^{+0.15}_{-0.20}$
D	6.3	5.8±0.3	6.6	7.8 max.	2.6	0.65±0.1	1.8	$0.35^{+0.15}_{-0.20}$
D8	6.3	7.7±0.3	6.6	7.8 max.	2.6	0.65±0.1	1.8	$0.35^{+0.15}_{-0.20}$
E	8.0	6.2±0.3	8.3	9.5 max.	3.4	0.65±0.1	2.2	$0.35^{+0.15}_{-0.20}$
F	8.0	10.2±0.3	8.3	10.0 max.	3.4	0.90±0.2	3.1	0.70±0.20
G	10.0	10.2±0.3	10.3	12.0 max.	3.5	0.90±0.2	4.6	0.70±0.20

Characteristics list

Endurance : 105 °C 2000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size* code	Specification			Part No.	Reflow	Min. Packaging Q'ty
		φD	L		Ripple current (100 kHz) (+105 °C) (mA r.m.s.)	Impedance (100 kHz) (+20 °C) (Ω)	tan δ (120 Hz) (+20 °C)			Taping (pcs)
6.3	22	4	5.8	B	90	1.35	0.26	EEEFK0J220AR	(5)	2000
	47	4	5.8	(B)	90	1.35	0.26	EEEFKJ470UAR	(5)	2000
		5	5.8	C	160	0.70	0.26	EEEFK0J470AR	(5)	1000
	100	5	5.8	(C)	160	0.70	0.26	EEEFKJ101UAR	(5)	1000
		6.3	5.8	D	240	0.36	0.26	EEEFK0J101AP	(5)	1000
	220	6.3	5.8	D	240	0.36	0.26	EEEFK0J221AP	(5)	1000
	330	6.3	7.7	D8	280	0.34	0.26	EEEFKJ331XAP	(5)	900
		8	6.2	E	300	0.26	0.26	EEEFK0J331AP	(6)	1000
	470	8	10.2	F	600	0.16	0.26	EEEFK0J471AP	(6)	500
	1000	8	10.2	F	600	0.16	0.26	EEEFK0J102AP	(6)	500
	1500	10	10.2	G	850	0.08	0.26	EEEFK0J152AP	(6)	500
10	22	4	5.8	B	90	1.35	0.19	EEEFK1A220AR	(5)	2000
	33	4	5.8	(B)	90	1.35	0.19	EEEFKA330UAR	(5)	2000
		5	5.8	C	160	0.70	0.19	EEEFK1A330AR	(5)	1000
	150	6.3	5.8	D	240	0.36	0.19	EEEFK1A151AP	(5)	1000
	220	6.3	7.7	D8	280	0.34	0.19	EEEFKA221XAP	(5)	900
		8	6.2	E	300	0.26	0.19	EEEFK1A221AP	(6)	1000
	330	8	10.2	F	600	0.16	0.19	EEEFK1A331AP	(6)	500
	470	8	10.2	F	600	0.16	0.19	EEEFK1A471AP	(6)	500
	680	8	10.2	F	600	0.16	0.19	EEEFK1A681AP	(6)	500
	1000	10	10.2	G	850	0.08	0.19	EEEFK1A102AP	(6)	500
16	10	4	5.8	B	90	1.35	0.16	EEEFK1C100AR	(5)	2000
	22	4	5.8	(B)	90	1.35	0.16	EEEFKC220UAR	(5)	2000
		5	5.8	C	160	0.70	0.16	EEEFK1C220AR	(5)	1000
	47	5	5.8	(C)	160	0.70	0.16	EEEFKC470UAR	(5)	1000
		6.3	5.8	D	240	0.36	0.16	EEEFK1C470AP	(5)	1000
	68	6.3	5.8	D	240	0.36	0.16	EEEFK1C680AP	(5)	1000
	100	6.3	5.8	D	240	0.36	0.16	EEEFK1C101AP	(5)	1000
	150	6.3	7.7	D8	280	0.34	0.16	EEEFKC151XAP	(5)	900
	220	6.3	7.7	D8	280	0.34	0.16	EEEFKC221XAP	(5)	900
		8	6.2	E	300	0.26	0.16	EEEFK1C221AP	(6)	1000
	330	8	10.2	F	600	0.16	0.16	EEEFK1C331AP	(6)	500
	470	8	10.2	F	600	0.16	0.16	EEEFK1C471AP	(6)	500
	680	10	10.2	G	850	0.08	0.16	EEEFK1C681AP	(6)	500
25	10	4	5.8	B	90	1.35	0.14	EEEFK1E100AR	(5)	2000
	22	5	5.8	C	160	0.70	0.14	EEEFK1E220AR	(5)	1000
	33	5	5.8	(C)	160	0.70	0.14	EEEFKE330UAR	(5)	1000
		6.3	5.8	D	240	0.36	0.14	EEEFK1E330AP	(5)	1000
	47	6.3	5.8	D	240	0.36	0.14	EEEFK1E470AP	(5)	1000
	68	6.3	5.8	D	240	0.36	0.14	EEEFK1E680AP	(5)	1000
	100	6.3	7.7	D8	280	0.34	0.14	EEEFKE101XAP	(5)	900
		8	6.2	E	300	0.26	0.14	EEEFK1E101AP	(6)	1000
	150	8	10.2	F	600	0.16	0.14	EEEFK1E151AP	(6)	500
	220	8	10.2	F	600	0.16	0.14	EEEFK1E221AP	(6)	500
	330	8	10.2	F	600	0.16	0.14	EEEFK1E331AP	(6)	500
	470	10	10.2	G	850	0.08	0.14	EEEFK1E471AP	(6)	500
35	4.7	4	5.8	B	90	1.35	0.12	EEEFK1V4R7AR	(5)	2000
	10	4	5.8	(B)	90	1.35	0.12	EEEFKV100UAR	(5)	2000
		5	5.8	C	160	0.70	0.12	EEEFK1V100AR	(5)	1000
	22	5	5.8	C	160	0.70	0.12	EEEFK1V220AR	(5)	1000
	33	6.3	5.8	D	240	0.36	0.12	EEEFK1V330AP	(5)	1000
	47	6.3	5.8	D	240	0.36	0.12	EEEFK1V470AP	(5)	1000
	68	6.3	7.7	D8	280	0.34	0.12	EEEFKV680XAP	(5)	900
	100	6.3	7.7	D8	280	0.34	0.12	EEEFKV101XAP	(5)	900
		8	10.2	F	600	0.16	0.12	EEEFK1V101AP	(6)	500
	150	8	10.2	F	600	0.16	0.12	EEEFK1V151AP	(6)	500
	220	8	10.2	F	600	0.16	0.12	EEEFK1V221AP	(6)	500
	330	10	10.2	G	850	0.08	0.12	EEEFK1V331AP	(6)	500

✻ Size code( ) : Miniaturization product

If Part number exceeds 12 digits, voltage code is abbreviated as follows; 0J → J, 1A → A, 1C → C, 1E → E, 1V → V

· 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"