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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Surface Mount Type

Series : **FC** Type : **V**

Low impedance



### Features

- Endurance : 105 °C 1000 h
- Low impedance (1/2 for HA series)
- Vibration-proof product is available upon request. ( $\phi 8$  mm and larger)
- RoHS compliant

### Specifications

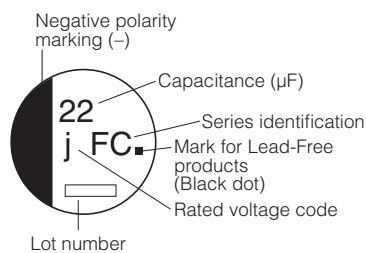
Category temperature range	-40 °C to +105 °C							
Rated voltage range	6.3 V.DC to 50 V.DC							
Capacitance range	1 $\mu$ F to 1500 $\mu$ F							
Capacitance tolerance	$\pm 20$ % (120 Hz/+20 °C)							
Leakage current	$I \leq 0.01$ CV or 3 ( $\mu$ A) After 2 minutes (Whichever is greater)							
Dissipation factor (tan $\delta$ )	Please see the attached characteristics list							
Characteristics at low temperature	V.DC	6.3	10	16	25	35	50	(Impedance ratio at 120 Hz)
	Z(-25 °C) / Z(+20 °C)	2	2	2	2	2	2	
	Z(-40 °C) / Z(+20 °C)	3	3	3	3	3	3	
Endurance	After applying rated working voltage for 1000 hours at +105 °C $\pm 2$ °C and then being stabilized at +20 °C, Capacitors shall meet the following limits.							
	Capacitance change	Within $\pm 20$ % of the initial value						
	tan $\delta$	$\leq 200$ % of the initial limit						
Shelf life	After storage for 1000 hours at +105 °C $\pm 2$ °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance.(With voltage treatment)							
	After reflow soldering and then being stabilized at +20 °C, capacitor shall meet the following limits.							
Resistance to soldering heat	Capacitance change	Within $\pm 10$ % of the initial value						
	tan $\delta$	Within the initial limit						
	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

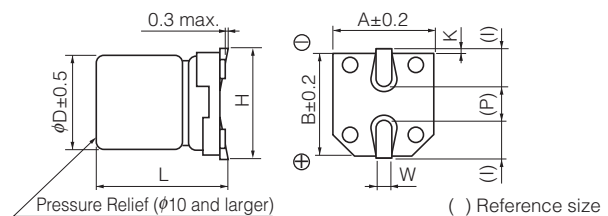
### Marking

Example : 6.3 V.DC 22  $\mu$ F  
Marking color : BLACK



R. Voltage (V.DC)	6.3	10	16	25	35	50
Code	j	A	C	E	V	H

### Dimensions



(Unit : mm)

Size code	$\phi D$	L	A, B	H	I	W	P	K
B	4.0	$5.4^{+0.1}_{-0.2}$	4.3	5.5 max.	1.8	$0.65 \pm 0.1$	1.0	$0.35^{+0.15}_{-0.20}$
C	5.0	$5.4^{+0.1}_{-0.2}$	5.3	6.5 max.	2.2	$0.65 \pm 0.1$	1.5	$0.35^{+0.15}_{-0.20}$
D	6.3	$5.4^{+0.1}_{-0.2}$	6.6	7.8 max.	2.6	$0.65 \pm 0.1$	1.8	$0.35^{+0.15}_{-0.20}$
E	8.0	$6.2 \pm 0.3$	8.3	9.5 max.	3.4	$0.65 \pm 0.1$	2.2	$0.35^{+0.15}_{-0.20}$
F	8.0	$10.2 \pm 0.3$	8.3	10.0 max.	3.4	$0.90 \pm 0.2$	3.1	$0.70 \pm 0.2$
G	10.0	$10.2 \pm 0.3$	10.3	12.0 max.	3.5	$0.90 \pm 0.2$	4.6	$0.70 \pm 0.2$

**Characteristics list**

Endurance : 105 °C 1000 h

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Size code	Specification			Part No.	Reflow	Min. Packaging Qty	
		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	5.4	B	60	3.00	0.26	EEEF0J220R	(1)	2000	
	47	5	5.4	C	95	1.80	0.26	EEEF0J470R	(1)	1000	
	68	6.3	5.4	D	140	1.00	0.26	EEEF0J680P	(1)	1000	
	100	6.3	5.4	D	140	1.00	0.26	EEEF0J101P	(1)	1000	
	220	8	6.2	E	230	0.40	0.26	EEEF0J221P	(2)	1000	
	330	8	10.2	F	450	0.30	0.26	EEEF0J331P	(2)	500	
	1000	10	10.2	G	670	0.15	0.26	EEEF0J102P	(2)	500	
	1500	10	10.2	G	670	0.15	0.26	EEEF0J152P	(2)	500	
10	33	5	5.4	C	95	1.80	0.19	EEEF1A330R	(1)	1000	
	100	8	6.2	E	230	0.40	0.19	EEEF1A101P	(2)	1000	
	150	8	6.2	E	230	0.40	0.19	EEEF1A151P	(2)	1000	
	220	8	10.2	F	450	0.30	0.19	EEEF1A221P	(2)	500	
	470	10	10.2	G	670	0.15	0.19	EEEF1A471P	(2)	500	
	1000	10	10.2	G	670	0.15	0.19	EEEF1A102P	(2)	500	
16	10	4	5.4	B	60	3.00	0.16	EEEF1C100R	(1)	2000	
	22	5	5.4	C	95	1.80	0.16	EEEF1C220R	(1)	1000	
	47	6.3	5.4	D	140	1.00	0.16	EEEF1C470P	(1)	1000	
	68	8	6.2	E	230	0.40	0.16	EEEF1C680P	(2)	1000	
	100	8	6.2	E	230	0.40	0.16	EEEF1C101P	(2)	1000	
	220	10	10.2	G	670	0.15	0.16	EEEF1C221P	(2)	500	
	330	10	10.2	G	670	0.15	0.16	EEEF1C331P	(2)	500	
	470	10	10.2	G	670	0.15	0.16	EEEF1C471P	(2)	500	
	680	10	10.2	G	670	0.15	0.16	EEEF1C681P	(2)	500	
25	6.8	4	5.4	B	60	3.00	0.14	EEEF1E68R	(1)	2000	
	22	6.3	5.4	D	140	1.00	0.14	EEEF1E220P	(1)	1000	
	33	6.3	5.4	D	140	1.00	0.14	EEEF1E330P	(1)	1000	
	47	8	6.2	E	230	0.40	0.14	EEEF1E470P	(2)	1000	
	68	8	10.2	F	450	0.30	0.14	EEEF1E680P	(2)	500	
	100	8	10.2	F	450	0.30	0.14	EEEF1E101P	(2)	500	
	220	10	10.2	G	670	0.15	0.14	EEEF1E221P	(2)	500	
	330	10	10.2	G	670	0.15	0.14	EEEF1E331P	(2)	500	
	470	10	10.2	G	670	0.15	0.14	EEEF1E471P	(2)	500	
35	1	4	5.4	B	60	3.00	0.12	EEEF1V1R0R	(1)	2000	
	2.2	4	5.4	B	60	3.00	0.12	EEEF1V2R2R	(1)	2000	
	3.3	4	5.4	B	60	3.00	0.12	EEEF1V3R3R	(1)	2000	
	4.7	4	5.4	B	60	3.00	0.12	EEEF1V4R7R	(1)	2000	
	6.8	5	5.4	C	95	1.80	0.12	EEEF1V6R8R	(1)	1000	
	10	5	5.4	C	95	1.80	0.12	EEEF1V100R	(1)	1000	
	22	6.3	5.4	D	140	1.00	0.12	EEEF1V220P	(1)	1000	
	33	8	6.2	E	230	0.40	0.12	EEEF1V330P	(2)	1000	
	47	8	6.2	E	230	0.40	0.12	EEEF1V470P	(2)	1000	
	100	10	10.2	G	670	0.15	0.12	EEEF1V101P	(2)	500	
	220	10	10.2	G	670	0.15	0.12	EEEF1V221P	(2)	500	
	330	10	10.2	G	670	0.15	0.12	EEEF1V331P	(2)	500	
50	1	4	5.4	B	30	5.00	0.12	EEEF1H1R0R	(1)	2000	
	2.2	4	5.4	B	30	5.00	0.12	EEEF1H2R2R	(1)	2000	
	3.3	4	5.4	B	30	5.00	0.12	EEEF1H3R3R	(1)	2000	
	4.7	5	5.4	C	50	3.00	0.12	EEEF1H4R7R	(1)	1000	
	10	6.3	5.4	D	70	2.00	0.12	EEEF1H100P	(1)	1000	
	22	8	6.2	E	120	0.70	0.12	EEEF1H220P	(2)	1000	
	33	8	10.2	F	300	0.60	0.12	EEEF1H330P	(2)	500	
	47	10	10.2	G	500	0.30	0.12	EEEF1H470P	(2)	500	
	100	10	10.2	G	500	0.30	0.12	EEEF1H101P	(2)	500	
	220	10	10.2	G	500	0.30	0.12	EEEF1H221P	(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"