# Surface Mount Type

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

#### ■ Features

• Endurance: 105 °C 1000 h

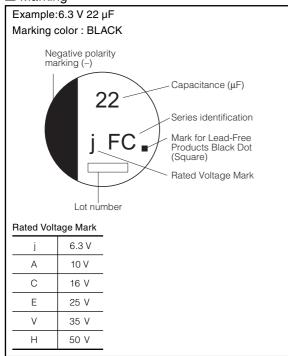
- Low impedance (1/2 for HA series)
- Vibration-proof product is available upon request. ( $\phi 8 \le$ )
- RoHS directive compliant



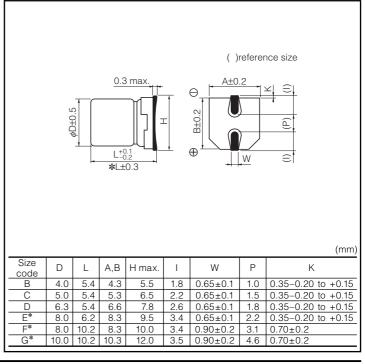
#### ■ Specifications

Category Temp. Range	−40 °C to +105 °C										
Rated W.V. Range	6.3 V.DC to 50 V.DC										
Nominal Cap. Range	1 μF to 1500 μF										
Capacitance Tolerance	±20 % (120 Hz/+20 °C)										
DC Leakage Current	l ≤ 0.01 CV or 3 (μA) After 2 minutes (Whichever is greater)										
tan $\delta$	Please see the attached standard products list										
Characteristics at Low Temperature	W.V. (V)	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				
Endurance	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.										
	Capacitance change	Capacitance change ±20 % of initial measured value									
	tan $\delta$	≤ 200 % of initial specified value									
	DC leakage current ≤ initial specified value										
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	Capacitance change ±10 % of initial measured value									
	tan $\delta$	≤ initial specified value									
	DC leakage current	OC leakage current ≤ initial specified value									

### ■ Marking



## Dimensions in mm (not to scale)



Endurance : 105 °C 1000 h

# **Panasonic**

#### ■ Standard Products

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		Case size			S	pecification	on			Min. Packaging Q'ty
W.V.	Cap.				Ripple	tan $\delta$	Impedance		Reflow	r acraging a ty
	(±20 %)			Size	Current	lan	Impedance	Part No.		
	( ,	Dia.	Length	Code		(120 Hz)	(100 kHz)	(RoHS:compliant)		Taping
						(+20 °C)				
(V)	(µF)	(mm)	(mm)		(mA r.m.s.)	,	$(\Omega)$			(pcs)
	22	4	5.4	В	60	0.26	3.00	EEEFC0J220R	(1)	2000
6.3	47	5	5.4	С	95	0.26	1.80	EEEFC0J470R	(1)	1000
	68	6.3	5.4	D	140	0.26	1.00	EEEFC0J680P	(1)	1000
	100	6.3	5.4	D	140	0.26	1.00	EEEFC0J101P	(1)	1000
	220	8	6.2	Е	230	0.26	0.40	EEEFC0J221P	(2)	1000
	330	8	10.2	F	450	0.26	0.30	EEEFC0J331P	(2)	500
	1000	10	10.2	G	670	0.26	0.15	EEEFC0J102P	(2)	500
	1500	10	10.2	G	670	0.26	0.15	EEEFC0J152P	(2)	500
	33	5	5.4	С	95	0.19	1.80	EEEFC1A330R	(1)	1000
	100	8	6.2	Е	230	0.19	0.40	EEEFC1A101P	(2)	1000
10	150	8	6.2	Е	230	0.19	0.40	EEEFC1A151P	(2)	1000
10	220	8	10.2	F	450	0.19	0.30	EEEFC1A221P	(2)	500
	470	10	10.2	G	670	0.19	0.15	EEEFC1A471P	(2)	500
	1000	10	10.2	G	670	0.19	0.15	EEEFC1A102P	(2)	500
	10	4	5.4	В	60	0.16	3.00	EEEFC1C100R	(1)	2000
	22	5	5.4	С	95	0.16	1.80	EEEFC1C220R	(1)	1000
	47	6.3	5.4	D	140	0.16	1.00	EEEFC1C470P	(1)	1000
	68	8	6.2	Е	230	0.16	0.40	EEEFC1C680P	(2)	1000
16	100	8	6.2	Е	230	0.16	0.40	EEEFC1C101P	(2)	1000
	220	10	10.2	G	670	0.16	0.15	EEEFC1C221P	(2)	500
	330	10	10.2	G	670	0.16	0.15	EEEFC1C331P	(2)	500
	470	10	10.2	G	670	0.16	0.15	EEEFC1C471P	(2)	500
	680	10	10.2	G	670	0.16	0.15	EEEFC1C681P	(2)	500
	6.8	4	5.4	В	60	0.14	3.00	EEEFC1E6R8R	(1)	2000
	22	6.3	5.4	D	140	0.14	1.00	EEEFC1E220P	(1)	1000
	33	6.3	5.4	D	140	0.14	1.00	EEEFC1E330P	(1)	1000
	47	8	6.2	Е	230	0.14	0.40	EEEFC1E470P	(2)	1000
25	68	8	10.2	F	450	0.14	0.30	EEEFC1E680P	(2)	500
	100	8	10.2	F	450	0.14	0.30	EEEFC1E101P	(2)	500
	220	10	10.2	G	670	0.14	0.15	EEEFC1E221P	(2)	500
	330	10	10.2	G	670	0.14	0.15	EEEFC1E331P	(2)	500
	470	10	10.2	G	670	0.14	0.15	EEEFC1E471P	(2)	500
	1	4	5.4	В	60	0.12	3.00	EEEFC1V1R0R	(1)	2000
	2.2	4	5.4	В	60	0.12	3.00	EEEFC1V2R2R	(1)	2000
	3.3	4	5.4	В	60	0.12	3.00	EEEFC1V3R3R	(1)	2000
	4.7	4	5.4	В	60	0.12	3.00	EEEFC1V4R7R	(1)	2000
	6.8	5	5.4	С	95	0.12	1.80	EEEFC1V6R8R	(1)	1000
35	10	5	5.4	С	95	0.12	1.80	EEEFC1V100R	(1)	1000
	22	6.3	5.4	D	140	0.12	1.00	EEEFC1V220P	(1)	1000
	33	8	6.2	Е	230	0.12	0.40	EEEFC1V330P	(2)	1000
	47	8	6.2	Е	230	0.12	0.40	EEEFC1V470P	(2)	1000
	100	10	10.2	G	670	0.12	0.15	EEEFC1V101P	(2)	500
	220	10	10.2	G	670	0.12	0.15	EEEFC1V221P	(2)	500
	330	10	10.2	G	670	0.12	0.15	EEEFC1V331P	(2)	500
50	1	4	5.4	В	30	0.12	5.00	EEEFC1H1R0R	(1)	2000
	2.2	4	5.4	В	30	0.12	5.00	EEEFC1H2R2R	(1)	2000
	3.3	4	5.4	В	30	0.12	5.00	EEEFC1H3R3R	(1)	2000
	4.7	5	5.4	С	50	0.12	3.00	EEEFC1H4R7R	(1)	1000
	10	6.3	5.4	D	70	0.12	2.00	EEEFC1H100P	(1)	1000
	22	8	6.2	Е	120	0.12	0.70	EEEFC1H220P	(2)	1000
	33	8	10.2	F	300	0.12	0.60	EEEFC1H330P	(2)	500
	47	10	10.2	G	500	0.12	0.30	EEEFC1H470P	(2)	500
	100	10	10.2	G	500	0.12	0.30	EEEFC1H101P	(2)	500
	220	10	10.2	G	500	0.12	0.30	EEEFC1H221P	(2)	500

The taping dimensions are explained on p.177 of our Catalog.

Please use it as a reference guide. Reflow Profile (Fig-1 to Fig-11) listed on p.175 of our Catalog.