

Resin Dipped Type

Series: EF Type : F

■ Features Lead wire terminal (Standard)

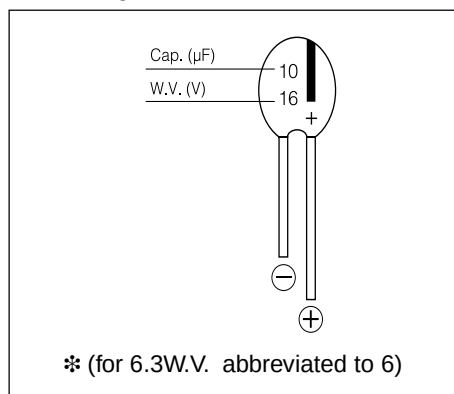
Japan



■ Specifications

Category temp. range	-55 to + 85°C (W.V. $\geq$ 10V.DC : -55 to 105°C)	
Rated W.V. Range	4 to 50 V .DC	
Nominal Cap. Range	0.1 to 220 μ F	
Capacitance Tolerance	± 20 % or ± 10 % (120Hz/+20°C)	
DC Leakage Current	$I \leq 0.008 CV$ or $0.05 (\mu A)$ after 2 minutes application of rated working voltage at +20 °C. (Whichever is the greater)	
tan δ	Please see the attached standard products list	
Moisture Resistance	After 500 hours exposure at +40 °C and 90 to 95 % R.H. without load, the capacitor shall meet the following limits.	
	Capacitance change	± 10 % of initial measured value
	tan δ	≤ 150 % of initial specified value
	DC leakage current	$0.012 CV$ or $0.75 (\mu A)$ max. whichever is the greater.
Endurance	After 2000 hours application of rated DC working voltage at +85°C or 1000 hours at +105°C with derated voltage for 10 to 50 W.V., the capacitor shall meet the following limits.	
	Capacitance change	± 10 % of initial measured value
	tan δ	$\leq$ initial specified value
	DC leakage current	$0.01 CV$ or $0.625 (\mu A)$ max. whichever is the greater

■ Marking



■ Dimensions in mm (not to scale)

Straight-lead-products			
Size code	ϕD	L	F
A	3.3	5.0	2.5 $\pm$ 0.5
B	3.3	5.5	2.5 $\pm$ 0.5
C	3.5	5.5	2.5 $\pm$ 0.5
D	3.7	6.5	2.5 $\pm$ 0.5
E	4.0	7.0	2.5 $\pm$ 0.5
F	4.5	7.0	2.5 $\pm$ 0.5
G	4.7	8.0	2.5 $\pm$ 0.5
H	5.2	8.5	2.5 $\pm$ 0.5
I	5.5	9.5	2.5 $\pm$ 0.5
J	6.0	11.0	2.5 $\pm$ 0.5
K	7.5	12.5	5.0 $\pm$ 0.5

■ Case size

Cap.(μ F)	W.V.(V.DC)	4(0G)	6.3(0J)	10(1A)	16(1C)	25(1E)	35(1V)	50(1H)
0.10 (104)							●A	●A
0.15 (154)							●A	●A
0.22 (224)							●A	●B
0.33 (334)							●A	●C
0.47 (474)							●B	D
0.68 (684)							●B	D
1.0 (105)					●A	●B	C	E
1.5 (155)					●B	C	C	F
2.2 (225)				●B	●C	C	D	G
3.3 (335)				●C	C	D	E	H
4.7 (475)			●C	C	D	E	F	I
6.8 (685)	●C	C	C	D	E	F	H	
10 (106)	C	D	D	E	F	H	I	
15 (156)	D	E	F	G	I	J	K	
22 (226)	E	F	G	H	J	K		
33 (336)	F	G	H	I	K			
47 (476)	G	H	I	J				
68 (686)	H	I	J	K				
100 (107)	I	J	K					
150 (157)	J	K						
220 (227)	K							

Note: 1. () shows W.V. and capacitance code.
2. Products designated by (●) have the voltage code on the body.

■ Standard Products

W.V. (V)	Cap. (120Hz) (+20°C) (μF)	Body Size			Specification		Lead Space			Part No.	Min. Packaging Q'ty	
		Dia. (mm)	Length (mm)	Size Code	tanδ (120Hz) (+20°C) (μA)	L.C (μA)	Straight (mm)	Taping B1 (mm)	Taping BB (mm)		Straight Leads (pcs)	Taping (pcs)
4	6.8	3.5 [4.5]	5.5 [9]	C	0.1	0.3	2.5	2.5	5.0	ECSF0GE685()	200	2000
	10	3.5 [4.5]	5.5 [9]	C	0.1	0.4	2.5	2.5	5.0	ECSF0GE106()	200	2000
	15	3.7 [5]	6.5 [9]	D	0.1	0.5	2.5	2.5	5.0	ECSF0GE156()	200	2000
	22	4 [5.5]	7 [9]	E	0.1	0.8	2.5	2.5	5.0	ECSF0GE226()	200	2000
	33	4.5 [5.5]	7 [10]	F	0.1	1.1	2.5	2.5	5.0	ECSF0GE336()	200	2000
	47	4.7 [6]	8 [11]	G	0.1	1.6	2.5	2.5	5.0	ECSF0GE476()	200	2000
	68	5.2 [6]	8.5[11.5]	H	0.1	2.2	2.5	2.5	5.0	ECSF0GE686()	200	2000
	100	5.5 [6.5]	9.5[12.5]	I	0.1	3.2	2.5	2.5	5.0	ECSF0GE107()	200	2000
	150	6	11	J	0.1	4.8	2.5			ECSF0GE157()	200	
	220	7.5	12.5	K	0.1	7.1	5.0			ECSF0GE227()	100	
6.3	4.7	3.5 [4.5]	5.5 [9]	C	0.06	0.3	2.5	2.5	5.0	ECSF0JE475()	200	2000
	6.8	3.5 [4.5]	5.5 [9]	C	0.06	0.4	2.5	2.5	5.0	ECSF0JE685()	200	2000
	10	3.7 [5]	6.5 [9]	D	0.06	0.6	2.5	2.5	5.0	ECSF0JE106()	200	2000
	15	4 [5.5]	7 [9]	E	0.06	0.8	2.5	2.5	5.0	ECSF0JE156()	200	2000
	22	4.5 [5.5]	7 [10]	F	0.06	1.2	2.5	2.5	5.0	ECSF0JE226()	200	2000
	33	4.7 [6]	8 [11]	G	0.06	1.7	2.5	2.5	5.0	ECSF0JE336()	200	2000
	47	5.2 [6]	8.5[11.5]	H	0.06	2.4	2.5	2.5	5.0	ECSF0JE476()	200	2000
	68	5.5 [6.5]	9.5[12.5]	I	0.06	3.5	2.5	2.5	5.0	ECSF0JE686()	200	2000
	100	6	11	J	0.08	5.1	2.5			ECSF0JE107()	200	
	150	7.5	12.5	K	0.08	7.6	5.0			ECSF0JE157()	100	
10	2.2	3.3 [4.5]	5.5 [9]	B	0.06	0.2	2.5	2.5	5.0	ECSF1AE225()	200	2000
	3.3	3.5 [4.5]	5.5 [9]	C	0.06	0.3	2.5	2.5	5.0	ECSF1AE335()	200	2000
	4.7	3.5 [4.5]	5.5 [9]	C	0.06	0.4	2.5	2.5	5.0	ECSF1AE475()	200	2000
	6.8	3.7 [5]	6.5 [9]	D	0.06	0.6	2.5	2.5	5.0	ECSF1AE685()	200	2000
	10	4 [5.5]	7 [9]	E	0.06	0.8	2.5	2.5	5.0	ECSF1AE106()	200	2000
	15	4.5 [5.5]	7 [10]	F	0.06	1.2	2.5	2.5	5.0	ECSF1AE156()	200	2000
	22	4.7 [6]	8 [11]	G	0.06	1.8	2.5	2.5	5.0	ECSF1AE226()	200	2000
	33	5.2 [6]	8.5[11.5]	H	0.06	2.7	2.5	2.5	5.0	ECSF1AE336()	200	2000
	47	5.5 [6.5]	9.5[12.5]	I	0.06	3.8	2.5	2.5	5.0	ECSF1AE476()	200	2000
	68	6	11	J	0.06	5.5	2.5			ECSF1AE686()	200	
16	1	3.3 [4.5]	5 [9]	A	0.04	0.2	2.5	2.5	5.0	ECSF1CE105()	200	2000
	1.5	3.3 [4.5]	5.5 [9]	B	0.06	0.2	2.5	2.5	5.0	ECSF1CE155()	200	2000
	2.2	3.5 [4.5]	5.5 [9]	C	0.06	0.3	2.5	2.5	5.0	ECSF1CE225()	200	2000
	3.3	3.5 [4.5]	5.5 [9]	C	0.06	0.5	2.5	2.5	5.0	ECSF1CE335()	200	2000
	4.7	3.7 [5]	6.5 [9]	D	0.06	0.7	2.5	2.5	5.0	ECSF1CE475()	200	2000
	6.8	4 [5.5]	7 [9]	E	0.06	0.9	2.5	2.5	5.0	ECSF1CE685()	200	2000
	10	4.5 [5.5]	7 [10]	F	0.06	1.3	2.5	2.5	5.0	ECSF1CE106()	200	2000
	15	4.7 [6]	8 [11]	G	0.06	2.0	2.5	2.5	5.0	ECSF1CE156()	200	2000
	22	5.2 [6]	8.5[11.5]	H	0.06	2.9	2.5	2.5	5.0	ECSF1CE226()	200	2000
	33	5.5 [6.5]	9.5[12.5]	I	0.06	4.3	2.5	2.5	5.0	ECSF1CE336()	200	2000
	47	6	11	J	0.06	6.1	2.5			ECSF1CE476()	200	
	68	7.5	12.5	K	0.06	8.8	5.0			ECSF1CE686()	100	

Diameter, length in brackets [] represent the formed lead type such as H,KH,BB,2B

When requesting taped product, please put the letter "B1" or "BB" between the "()".

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Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Standard Products

W.V. (V)	Cap. (120Hz) (+20°C) (μF)	Body Size			Specification		Lead Space			Part No.	Min. Packaging Q'ty	
		Dia. (mm)	Length (mm)	Size Code	tanδ (120Hz) (+20°C)	L.C (μA)	Straight (mm)	Taping B1 (mm)	Taping BB (mm)		Straight Leads (pcs)	Taping (pcs)
25	1	3.3 [4.5]	5.5 [9]	B	0.04	0.2	2.5	2.5	5.0	ECSF1EE105()	200	2000
	1.5	3.5 [4.5]	5.5 [9]	C	0.06	0.3	2.5	2.5	5.0	ECSF1EE155()	200	2000
	2.2	3.5 [4.5]	5.5 [9]	C	0.06	0.5	2.5	2.5	5.0	ECSF1EE225()	200	2000
	3.3	3.7 [5]	6.5 [9]	D	0.06	0.7	2.5	2.5	5.0	ECSF1EE335()	200	2000
	4.7	4 [5.5]	7 [9]	E	0.06	1.0	2.5	2.5	5.0	ECSF1EE475()	200	2000
	6.8	4.5 [5.5]	7 [10]	F	0.06	1.4	2.5	2.5	5.0	ECSF1EE685()	200	2000
	10	5.2 [6]	8.5[11.5]	H	0.06	2.0	2.5	2.5	5.0	ECSF1EE106()	200	2000
	15	5.5 [6.5]	9.5[12.5]	I	0.06	3.0	2.5	2.5	5.0	ECSF1EE106()	200	2000
	22	6	11	J	0.06	4.4	2.5			ECSF1EE226()	200	
	33	7.5	12.5	K	0.06	6.6	5.0			ECSF1EE336()	100	
35	0.1	3.3 [4.5]	5 [9]	A	0.04	0.05	2.5	2.5	5.0	ECSF1VE104()	200	2000
	0.15	3.3 [4.5]	5 [9]	A	0.04	0.05	2.5	2.5	5.0	ECSF1VE154()	200	2000
	0.22	3.3 [4.5]	5 [9]	A	0.04	0.07	2.5	2.5	5.0	ECSF1VE224()	200	2000
	0.33	3.3 [4.5]	5 [9]	A	0.04	0.1	2.5	2.5	5.0	ECSF1VE334()	200	2000
	0.47	3.3 [4.5]	5.5 [9]	B	0.04	0.2	2.5	2.5	5.0	ECSF1VE474()	200	2000
	0.68	3.3 [4.5]	5.5 [9]	B	0.04	0.2	2.5	2.5	5.0	ECSF1VE686()	200	2000
	1	3.5 [4.5]	5.5 [9]	C	0.04	0.3	2.5	2.5	5.0	ECSF1VE105()	200	2000
	1.5	3.5 [4.5]	5.5 [9]	C	0.06	0.5	2.5	2.5	5.0	ECSF1VE155()	200	2000
	2.2	3.7 [5]	6.5 [9]	D	0.06	0.7	2.5	2.5	5.0	ECSF1VE225()	200	2000
	3.3	4 [5.5]	7 [9]	E	0.06	1.0	2.5	2.5	5.0	ECSF1VE335()	200	2000
	4.7	4.5 [5.5]	7 [10]	F	0.06	1.4	2.5	2.5	5.0	ECSF1VE475()	200	2000
	6.8	5.2 [6]	8.5[11.5]	H	0.06	2.0	2.5	2.5	5.0	ECSF1VE685()	200	2000
	10	5.5 [6.5]	9.5[12.5]	I	0.06	2.8	2.5	2.5	5.0	ECSF1VE106()	200	2000
	15	6	11	J	0.06	4.2	2.5			ECSF1VE156()	200	
	22	7.5	12.5	K	0.06	6.2	5.0			ECSF1VE226()	100	
50	0.1	3.3 [4.5]	5 [9]	A	0.04	0.05	2.5	2.5	5.0	ECSF1HE104()	200	2000
	0.15	3.3 [4.5]	5 [9]	A	0.04	0.06	2.5	2.5	5.0	ECSF1HE154()	200	2000
	0.22	3.3 [4.5]	5.5 [9]	B	0.04	0.09	2.5	2.5	5.0	ECSF1HE224()	200	2000
	0.33	3.5 [4.5]	5.5 [9]	C	0.04	0.2	2.5	2.5	5.0	ECSF1HE334()	200	2000
	0.47	3.7 [5]	6.5[9]	D	0.04	0.2	2.5	2.5	5.0	ECSF1HE474()	200	2000
	0.68	3.7 [5]	6.5[9]	D	0.04	0.3	2.5	2.5	5.0	ECSF1HE684()	200	2000
	1	4 [5.5]	7 [9]	E	0.04	0.4	2.5	2.5	5.0	ECSF1HE105()	200	2000
	1.5	4.5 [5.5]	7 [10]	F	0.06	0.6	2.5	2.5	5.0	ECSF1HE155()	200	2000
	2.2	4.7 [6]	8 [11]	G	0.06	0.9	2.5	2.5	5.0	ECSF1HE225()	200	2000
	3.3	5.2 [6]	8.5[11.5]	H	0.06	1.4	2.5	2.5	5.0	ECSF1HE335()	200	2000
	4.7	5.5 [6.5]	9.5[12.5]	I	0.06	1.9	2.5	2.5	5.0	ECSF1HE475()	200	2000

■ Suffix for the Part Numbers in ()

Lead style Capacitance Tolerance	Bulk		Taping	
	Straight Lead A~J Size : 2.5mm K Size : 5.0mm	Formed Lead A~J Size : 5.0mm K Size : N/A	Straight Lead A~I Size : 2.5mm J,K Size : N/A	Formed Lead A~I Size : 5.0mm J,K Size : N/A
± 20%	Not applicable	H	B1	BB
± 10%	K	KH	B2	2B

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