

FZ Series

Features

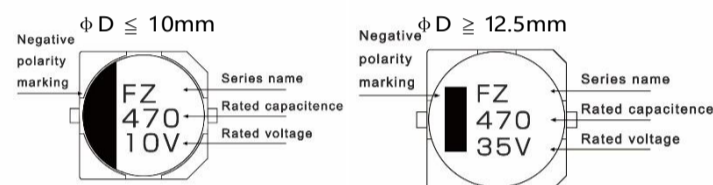
- Endurance : 105°C 2000~5000 H
- Extra Low Impedance (40% ~ 60% lower than LZ Series)
- Designed for reflow soldering
- Designed for surface mounting on high-density PCB
- RoHS 2.0 compliant
- 219 SVHC & REACH compliant



Marking color : Black

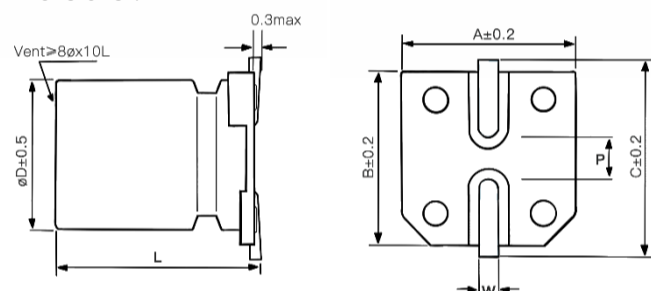
Specifications										
Category temp. range	-55°C to +105°C									
Capacitance tolerance	±20% (120 Hz / +20 °C)									
Leakage current	$I \leq 0.01 CV$ or 3 μA whichever is greater (after 2 minutes)									
Tan δ	Please see the attached characteristics list									
Characteristics at low temperature(Impedance ratio at 120 Hz)	Rated voltage (V)	6.3	10	16	25	35	50	63	80	100
	Z (-25 °C) / Z (+20 °C)	4	3	2	2	2	2	2	2	2
	Z (-55 °C) / Z (+20 °C)	8	5	4	3	3	3	3	3	3
Endurance	After applying rated working voltage for 2000/3000/5000 hours at +105 °C \pm 2 °C, and then being stabilized at +20 °C , capacitors shall meet the following limits.									
	Test Time	$\phi D \times L \leq 6.3 \times 5.7Lmm$: 2000H, 6.3 ϕ x 7.7L , 8 ϕ x 6.5L , 10 ϕ x 7.7L : 3000H , $\phi D \geq 8mm$: 5000H								
	Capacitance change	Within $\pm 30\%$ of the initial value								
	Dissipation factor (tan δ)	Less than 300% of the initial value								
	Leakage current	Within the initial limit								
Shelf life	After storage for 1000 h 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.									
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.									
	Capacitance change	Within $\pm 10\%$ of the initial value								
	Dissipation factor (tan δ)	Within the initial limit								
Frequency correction factor for ripple current	Frequency	50Hz	120Hz	1kHz	10kHz \leq					
	Correction Factor	0.6	0.7	0.85	1.0					

Marking :



Dimensions						Unit : mm
ϕD	L	A	B	C	W	P ± 0.2
4	5.7 ± 0.3	4.3	4.3	5.1	0.5~0.8	1.0
5	5.7 ± 0.3	5.3	5.3	6.1	0.5~0.8	1.3
6.3	5.7 ± 0.3	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7 ± 0.3	6.6	6.6	7.3	0.5~0.8	2.2
8	6.5 ± 0.5	8.3	8.3	9.2	0.7~1.2	3.1
8	10.5 ± 0.5	8.3	8.3	9.2	0.7~1.2	3.1
10	7.7 ± 0.3	10.3	10.3	11.2	0.7~1.2	4.4
10	10.5 ± 0.5	10.3	10.3	11.2	0.7~1.2	4.4
10	13 ± 0.5	10.3	10.3	11.2	0.7~1.2	4.4
12.5	13.5 ± 0.5	13.0	13.0	14.0	1.0~1.4	4.4
12.5	16 ± 0.5	13.0	13.0	14.0	1.0~1.4	4.4

Dimensions :



Part Number System :

FZ series 16V 220 μF $\pm 20\%$ 6.3 ϕ X 7.7L

FZ **1C** **221** **M** **0607**

Series name | Rated voltage | Capacitance | Capacitance tolerance | Case Size

Characteristics list								
Rated voltage (V)	Capacitance ($\pm 20\%$) (μF)	Case size		Specification			Part Number ^④	Taping&Reel
		ϕD (mm)	L (mm)	Rated ripple current ^① (mA rms)	Imp. ^② (Ω)	tan δ ^③		MPQ (pcs/reel)
6.3	22	4	5.7	80	1.45	0.26	FZ0J220M0406	2000
	33	4	5.7	80	1.45	0.26	FZ0J330M0406	2000
		5	5.7	150	0.80	0.26	FZ0J330M0506	1000
	47	5	5.7	150	0.80	0.26	FZ0J470M0506	1000
	100	5	5.7	150	0.80	0.26	FZ0J101M0506	1000
		6.3	5.7	230	0.44	0.26	FZ0J101M0606	1000
	150	6.3	5.7	230	0.44	0.26	FZ0J151M0606	1000
		6.3	5.7	230	0.44	0.26	FZ0J221M0606	1000
	220	6.3	7.7	280	0.36	0.26	FZ0J221M0607	1000
		6.3	7.7	280	0.36	0.26	FZ0J331M0607	1000
	330	8	6.5	280	0.36	0.26	FZ0J331M0806	1000
		8	10.5	450	0.17	0.26	FZ0J331M0810	500
	470	6.3	7.7	280	0.36	0.26	FZ0J471M0607	1000
		8	10.5	450	0.17	0.26	FZ0J471M0810	500
		10	7.7	450	0.17	0.26	FZ0J471M1007	500
	680	8	10.5	450	0.17	0.26	FZ0J681M0810	500
10		7.7	450	0.17	0.26	FZ0J681M1007	500	
1000	8	10.5	450	0.17	0.28	FZ0J102M0810	500	
1500	10	10.5	670	0.09	0.28	FZ0J152M1010	500	
	10	13	720	0.08	0.28	FZ0J152M1013	400	
2200	12.5	13.5	820	0.07	0.34	FZ0J222M1313	200	
10	22	4	5.7	80	1.45	0.22	FZ1A220M0406	2000
	33	5	5.7	150	0.80	0.22	FZ1A330M0506	1000
	47	6.3	5.7	230	0.44	0.22	FZ1A470M0606	1000
	100	6.3	5.7	230	0.44	0.22	FZ1A101M0606	1000
	150	6.3	5.7	230	0.44	0.22	FZ1A151M0606	1000
		6.3	7.7	280	0.36	0.22	FZ1A221M0607	1000
	220	8	6.5	280	0.36	0.22	FZ1A221M0806	1000
		8	10.5	450	0.17	0.22	FZ1A331M0810	500
	330	10	7.7	450	0.17	0.22	FZ1A331M1007	500
		8	10.5	450	0.17	0.22	FZ1A471M0810	500
	470	10	7.7	450	0.17	0.22	FZ1A471M1007	500
		10	10.5	670	0.09	0.22	FZ1A681M1010	500
	1000	10	10.5	670	0.09	0.24	FZ1A102M1010	500
	1500	10	13	720	0.08	0.24	FZ1A152M1013	400
		12.5	13.5	820	0.07	0.27	FZ1A152M1313	200
	2200	12.5	13.5	820	0.07	0.29	FZ1A222M1313	200

① Rated ripple current (100kHz / +105°C) ② Impedance (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For plastic reel packaging , the Part Number is appended with "PR" at the end.

※Please refer to the page of reflow conditions for reflow profile.

Characteristics list

Rated voltage (V)	Capacitance (±20%) (μF)	Case size		Specification			Part Number④	Taping&Reel
		øD (mm)	L (mm)	Rated ripple current① (mA rms)	Imp.② (Ω)	tan δ③		MPQ (pcs/reel)
16	10	4	5.7	80	1.45	0.18	FZ1C150M0406	2000
	22	5	5.7	150	0.80	0.18	FZ1C220M0506	1000
	33	5	5.7	150	0.80	0.18	FZ1C330M0506	1000
		6.3	5.7	230	0.44	0.18	FZ1C330M0606	1000
	47	6.3	5.7	230	0.44	0.18	FZ1C470M0606	1000
	68	6.3	5.7	230	0.44	0.18	FZ1C680M0606	1000
	100	6.3	5.7	230	0.44	0.18	FZ1C101M0606	1000
		8	6.5	280	0.36	0.18	FZ1C101M0806	1000
	150	6.3	7.7	280	0.36	0.18	FZ1C151M0607	1000
		8	6.5	280	0.36	0.18	FZ1C151M0806	1000
	220	6.3	7.7	280	0.36	0.18	FZ1C221M0607	1000
	330	8	10.5	450	0.17	0.18	FZ1C331M0810	500
		10	7.7	450	0.17	0.18	FZ1C331M1007	500
	470	8	10.5	450	0.17	0.18	FZ1C471M0810	500
		10	10.5	670	0.09	0.18	FZ1C471M1010	500
	680	10	10.5	670	0.09	0.18	FZ1C681M1010	500
1000	10	13	720	0.08	0.20	FZ1C102M1013	500	
	12.5	13.5	820	0.07	0.22	FZ1C102M1313	200	
25	10	4	5.7	80	1.45	0.16	FZ1E100M0406	2000
	22	5	5.7	150	0.80	0.16	FZ1E220M0506	1000
	33	5	5.7	150	0.80	0.16	FZ1E330M0506	1000
		6.3	5.7	230	0.44	0.16	FZ1E330M0606	1000
	47	6.3	5.7	230	0.44	0.16	FZ1E470M0606	1000
	68	6.3	5.7	230	0.44	0.16	FZ1E680M0606	1000
	100	6.3	7.7	280	0.36	0.16	FZ1E101M0607	1000
		8	6.5	280	0.36	0.16	FZ1E101M0806	1000
	150	8	10.5	450	0.17	0.16	FZ1E151M0810	500
	220	8	10.5	450	0.17	0.16	FZ1E221M0810	500
		10	7.7	450	0.17	0.16	FZ1E221M1007	500
	330	8	10.5	450	0.17	0.16	FZ1E331M0810	500
	470	10	10.5	670	0.09	0.16	FZ1E471M1010	500
	680	10	13	720	0.08	0.16	FZ1E681M1013	400
12.5		13.5	820	0.07	0.18	FZ1E681M1313	200	
1000	12.5	13.5	820	0.07	0.20	FZ1E102M1313	200	
35	4.7	4	5.7	80	1.45	0.14	FZ1V4R7M0406	2000
	10	4	5.7	80	1.45	0.14	FZ1V100M0406	2000
		5	5.7	150	0.80	0.14	FZ1V100M0506	1000
	22	5	5.7	150	0.80	0.14	FZ1V220M0506	1000
		6.3	5.7	230	0.44	0.14	FZ1V220M0606	1000
	33	6.3	5.7	230	0.44	0.14	FZ1V330M0606	1000
	47	6.3	5.7	230	0.44	0.14	FZ1V470M0606	1000
	68	6.3	7.7	280	0.36	0.14	FZ1V680M0607	1000
		8	6.5	280	0.36	0.14	FZ1V680M0806	1000
	100	6.3	7.7	280	0.36	0.14	FZ1V101M0607	1000
		8	10.5	450	0.17	0.14	FZ1V101M0810	500
	150	8	10.5	450	0.17	0.14	FZ1V151M0810	500
		10	7.7	450	0.17	0.14	FZ1V151M1007	500
	220	8	10.5	600	0.17	0.14	FZ1V221M0810	500
		10	10.5	670	0.09	0.14	FZ1V221M1010	500
	330	10	10.5	850	0.09	0.14	FZ1V331M1010	500
12.5		13.5	820	0.07	0.16	FZ1V331M1313	200	
470	10	13	720	0.08	0.14	FZ1V471M1013	400	
	12.5	13.5	820	0.07	0.16	FZ1V471M1313	200	
50	1	4	5.7	60	2.9	0.12	FZ1H010M0406	2000
	2.2	4	5.7	60	2.9	0.12	FZ1H2R2M0406	2000
	3.3	4	5.7	60	2.9	0.12	FZ1H3R3M0406	2000
	4.7	4	5.7	60	2.9	0.12	FZ1H4R7M0406	2000
		5	5.7	85	1.52	0.12	FZ1H4R7M0506	1000
	10	6.3	5.7	165	0.88	0.12	FZ1H100M0606	1000
	22	6.3	5.7	165	0.88	0.12	FZ1H220M0606	1000
	33	6.3	7.7	185	0.68	0.12	FZ1H330M0607	1000
	47	6.3	7.7	185	0.68	0.12	FZ1H470M0607	1000
		8	6.5	185	0.68	0.12	FZ1H470M0806	1000
	47	8	10.5	360	0.34	0.12	FZ1H470M0810	500
		8	10.5	360	0.34	0.12	FZ1H680M0810	500
	100	8	10.5	360	0.34	0.12	FZ1H101M0810	500
		10	10.5	560	0.18	0.12	FZ1H101M1010	500
	150	10	10.5	560	0.18	0.12	FZ1H151M1010	500
	220	10	10.5	560	0.18	0.12	FZ1H221M1010	500
12.5		13.5	650	0.12	0.12	FZ1H221M1313	200	
330	12.5	13.5	650	0.12	0.12	FZ1H331M1313	200	
63	4.7	5	5.7	60	2.9	0.12	FZ1J4R7M0506	1000
	10	6.3	5.7	80	1.5	0.12	FZ1J100M0606	1000
		6.3	7.7	120	1.2	0.12	FZ1J220M0607	1000
	22	8	6.5	120	1.2	0.12	FZ1J220M0806	1000
		8	10.5	250	0.65	0.12	FZ1J330M0810	500
	47	8	10.5	250	0.65	0.12	FZ1J470M0810	500
	68	8	10.5	250	0.65	0.12	FZ1J680M0810	500
	100	10	10.5	400	0.35	0.12	FZ1J101M1010	500
		12.5	13.5	800	0.16	0.14	FZ1J101M1313	200
	150	12.5	13.5	800	0.16	0.14	FZ1J151M1313	200
220	12.5	13.5	800	0.16	0.14	FZ1J221M1313	200	
80	3.3	5	5.7	25	5.0	0.12	FZ1K3R3M0506	1000
	4.7	6.3	5.7	40	3.0	0.12	FZ1K4R7M0606	1000
		6.3	7.7	60	2.4	0.12	FZ1K100M0607	1000
	10	8	6.5	60	2.4	0.12	FZ1K100M0806	1000
		8	10.5	130	1.3	0.12	FZ1K220M0810	500
	33	8	10.5	130	1.3	0.12	FZ1K330M0810	500
	47	10	10.5	200	0.70	0.12	FZ1K470M1010	500
	68	10	13	400	0.40	0.12	FZ1K680M1013	400
		12.5	13.5	500	0.32	0.14	FZ1K680M1313	200
	100	10	13	400	0.40	0.12	FZ1K101M1013	400
		12.5	13.5	500	0.32	0.14	FZ1K101M1313	200
	150	12.5	13.5	500	0.32	0.14	FZ1K151M1313	200
100	22	8	10.5	130	1.3	0.12	FZ2A220M0810	500
	33	10	10.5	200	0.70	0.12	FZ2A330M1010	500
	47	10	10.5	200	0.70	0.12	FZ2A470M1010	500
		10	13	400	0.40	0.12	FZ2A470M1013	400
		12.5	13.5	500	0.32	0.14	FZ2A470M1313	200
	68	12.5	13.5	500	0.32	0.14	FZ2A680M1313	200
	100	12.5	13.5	500	0.32	0.14	FZ2A101M1313	200

① Rated ripple current (100kHz / +105°C) ② Impedance (100kHz / +20°C) ③ tan δ (120Hz / +20°C)

④ For plastic reel packaging, the Part Number is appended with "PR" at the end.

※Please refer to the page of reflow conditions for reflow profile.