

# AFZ Series

## Features

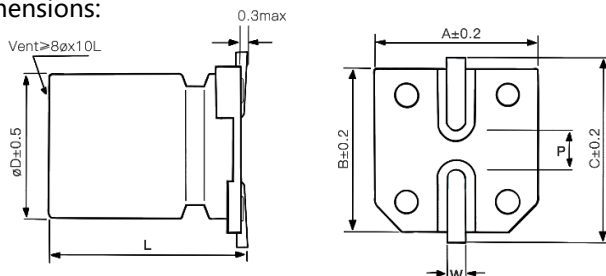
- $\phi 4 \sim \phi 12.5$ , 105°C, 2000~5000 hours assured
- Extra low impedance capacitors (40% ~ 60% lower than ALZ Series)
- Designed for reflow soldering
- Designed for surface mounting on high-density PCB
- Vibration resistant structure
- RoHS 2.0 compliant, 247 REACH&SVHC compliant
- AEC-Q200 compliant, Please contact Jarson for more details, test data, information



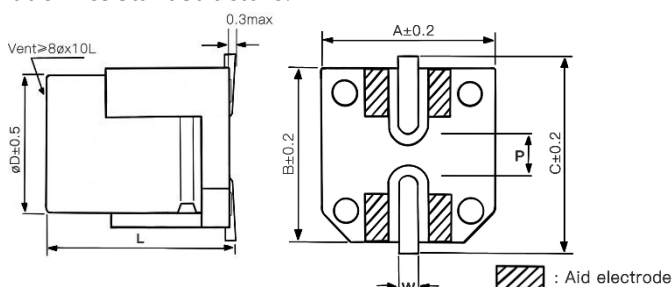
Marking color: Black

Specifications										
Category temp. range	-55℃ to +105℃									
Capacitance tolerance	±20% (120 Hz / +20 ℃)									
Leakage current	I ≤ 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 ℃) / Z (+20 ℃)	4	3	2	2	2	2	2	2	2
	Z (-55 ℃) / Z (+20 ℃)	8	5	4	3	3	3	3	3	3
Endurance	After applying rated working voltage for 2000/3000/5000 hours at +105 ℃ ± 2 ℃, and then being stabilized at +20 ℃, capacitors shall meet the following limits.									
	Test Time	Φ D x L ≤ 6.3x 5.7Lmm: 2000H 6.3 Φ x7.7L , 8 Φ x 6.5L, 10 Φ x7.7L: 3000H Φ D ≥ 8mm: 5000H								
	Capacitance change	Within ±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 ℃ ± 2 ℃ with no voltage applied and then being stabilized at +20 ℃, capacitors shall meet the limits specified in endurance.									
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 ℃, capacitors shall meet the following limits.									
	Capacitance change	Within ±10% of the initial value								
	Dissipation factor (tan δ)	Within the initial limit								
	Leakage current	Within the initial limit								
Frequency correction factor for ripple current	Frequency	50Hz		120Hz		1kHz		10kHz≤		
	Correction Factor	0.6		0.7		0.85		1.0		

## Dimensions:

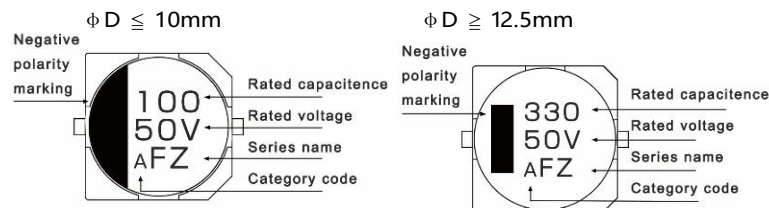


## Vibration resistant structure:



Dimensions						Unit: mm
$\phi D$	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	6.0	0.5~0.8	1.4
6.3	5.7±0.3	6.6	6.6	7.3	0.5~0.8	2.0
6.3	7.7±0.3	6.6	6.6	7.3	0.5~0.8	2.0
8	6.5±0.5	8.3	8.3	9.1	0.7~1.3	3.1
8	10.5±0.5	8.3	8.3	9.1	0.7~1.3	3.1
10	7.7±0.5	10.3	10.3	11.1	0.7~1.3	4.4
10	10.5±0.5	10.3	10.3	11.1	0.7~1.3	4.4
10	13±0.5	10.3	10.3	11.1	0.7~1.3	4.4
12.5	13.5±0.5	13.0	13.0	14.0	1.1~1.4	4.4
12.5	16±0.5	13.0	13.0	14.0	1.1~1.4	4.4

**Marking:**



**Part Number System:**

SMD Aluminum E-Caps      FZ series      16V      220μF      ±20 %      6.3 ϕ x7.7L

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

Product category      Series name      Rated voltage      Capacitance      Capacitance tolerance      Case Size

**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)
6.3	22	4	5.7	80	1.45	0.30	AFZ0J220M0406	2000
	33	4	5.7	80	1.45	0.30	AFZ0J330M0406	2000
	47	5	5.7	150	0.80	0.30	AFZ0J470M0506	1000
	100	5	5.7	150	0.80	0.30	AFZ0J101M0506	1000
		6.3	5.7	230	0.44	0.30	AFZ0J101M0606	1000
	150	6.3	5.7	230	0.44	0.30	AFZ0J151M0606	1000
	220	6.3	5.7	230	0.44	0.30	AFZ0J221M0606	1000
		6.3	7.7	280	0.36	0.30	AFZ0J221M0607	1000
	330	6.3	7.7	280	0.36	0.30	AFZ0J331M0607	1000
		8	6.5	280	0.36	0.30	AFZ0J331M0806	1000
		8	10.5	450	0.17	0.30	AFZ0J331M0810	500
	470	6.3	7.7	280	0.36	0.30	AFZ0J471M0607	1000
		8	10.5	450	0.17	0.30	AFZ0J471M0810	500
		10	7.7	450	0.17	0.30	AFZ0J471M1007	500
	680	8	10.5	450	0.17	0.30	AFZ0J681M0810	500
		10	7.7	450	0.17	0.30	AFZ0J681M1007	500
	1000	8	10.5	450	0.17	0.30	AFZ0J102M0810	500
	1500	10	10.5	670	0.09	0.32	AFZ0J152M1010	500
		10	13	720	0.08	0.32	AFZ0J152M1013	400
	2200	12.5	13.5	820	0.07	0.34	AFZ0J222M1313	200
	3300	12.5	16	950	0.06	0.36	AFZ0J332M1316	200

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

④ For automotive, the Part Number is appended with "a" at the end.    ⑤ For Vibration resistant structure, the Part Number is appended with "v" 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)
10	22	4	5.7	80	1.45	0.26	AFZ1A220M0406	2000
	33	5	5.7	150	0.80	0.26	AFZ1A330M0506	1000
	47	6.3	5.7	230	0.44	0.26	AFZ1A470M0606	1000
	100	6.3	5.7	230	0.44	0.26	AFZ1A101M0606	1000
	150	6.3	5.7	230	0.44	0.26	AFZ1A151M0606	1000
	220	6.3	7.7	280	0.36	0.26	AFZ1A221M0607	1000
		8	6.5	280	0.36	0.26	AFZ1A221M0806	1000
	330	8	10.5	450	0.17	0.26	AFZ1A331M0810	500
		10	7.7	450	0.17	0.26	AFZ1A331M1007	500
	470	8	10.5	450	0.17	0.26	AFZ1A471M0810	500
		10	7.7	450	0.17	0.26	AFZ1A471M1007	500
	680	10	10.5	670	0.09	0.26	AFZ1A681M1010	500
	1000	10	10.5	670	0.09	0.26	AFZ1A102M1010	500
	1500	10	13	720	0.08	0.28	AFZ1A152M1013	400
		12.5	13.5	820	0.07	0.28	AFZ1A152M1313	200
	2200	12.5	16	950	0.06	0.30	AFZ1A222M1316	200
16	10	4	5.7	80	1.45	0.22	AFZ1C150M0406	2000
	22	5	5.7	150	0.80	0.22	AFZ1C220M0506	1000
	33	5	5.7	150	0.80	0.22	AFZ1C330M0506	1000
		6.3	5.7	230	0.44	0.22	AFZ1C330M0606	1000
	47	6.3	5.7	230	0.44	0.22	AFZ1C470M0606	1000
	100	6.3	5.7	230	0.44	0.22	AFZ1C101M0606	1000
		8	6.5	280	0.36	0.22	AFZ1C101M0806	1000
	150	6.3	7.7	280	0.36	0.22	AFZ1C151M0607	1000
		8	6.5	280	0.36	0.22	AFZ1C151M0806	1000
	220	6.3	7.7	280	0.36	0.22	AFZ1C221M0607	1000
	330	8	10.5	450	0.17	0.22	AFZ1C331M0810	500
		10	7.7	450	0.17	0.22	AFZ1C331M1007	500
	470	8	10.5	450	0.17	0.22	AFZ1C471M0810	500
		10	10.5	670	0.09	0.22	AFZ1C471M1010	500
	680	10	10.5	670	0.09	0.22	AFZ1C681M1010	500
	1000	10	13	720	0.08	0.24	AFZ1C102M1013	500
		12.5	13.5	820	0.07	0.24	AFZ1C102M1313	200
	1500	12.5	16	950	0.06	0.24	AFZ1C152M1316	200
25	10	4	5.7	80	1.45	0.16	AFZ1E100M0406	2000
	22	5	5.7	150	0.80	0.16	AFZ1E220M0506	1000
	33	6.3	5.7	230	0.44	0.16	AFZ1E330M0606	1000
	47	6.3	5.7	230	0.44	0.16	AFZ1E470M0606	1000
	68	6.3	5.7	230	0.44	0.16	AFZ1E680M0606	1000
	100	6.3	7.7	280	0.36	0.16	AFZ1E101M0607	1000
		8	6.5	280	0.36	0.16	AFZ1E101M0806	1000
	150	8	10.5	450	0.17	0.16	AFZ1E151M0810	500
	220	8	10.5	450	0.17	0.16	AFZ1E221M0810	500
		10	7.7	450	0.17	0.16	AFZ1E221M1007	500
	330	8	10.5	450	0.17	0.16	AFZ1E331M0810	500
	470	10	10.5	670	0.09	0.16	AFZ1E471M1010	500
	680	10	13	720	0.08	0.16	AFZ1E681M1013	400
		12.5	13.5	820	0.07	0.18	AFZ1E681M1313	200
	1000	12.5	16	950	0.06	0.20	AFZ1E102M1313	200

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

④ For automotive, the Part Number is appended with "a" at the end.    ⑤ For Vibration resistant structure, the Part Number is appended with "v" 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)
35	4.7	4	5.7	80	1.45	0.13	AFZ1V4R7M0406	2000
	10	4	5.7	80	1.45	0.13	AFZ1V100M0406	2000
		5	5.7	150	0.80	0.13	AFZ1V100M0506	1000
	22	6.3	5.7	230	0.44	0.13	AFZ1V220M0606	1000
	33	6.3	5.7	230	0.44	0.13	AFZ1V330M0606	1000
	47	6.3	5.7	230	0.44	0.13	AFZ1V470M0606	1000
	68	6.3	7.7	280	0.36	0.13	AFZ1V680M0607	1000
		8	6.5	280	0.36	0.13	AFZ1V680M0806	1000
	100	6.3	7.7	280	0.36	0.13	AFZ1V101M0607	1000
		8	10.5	450	0.17	0.13	AFZ1V101M0810	500
	150	8	10.5	450	0.17	0.13	AFZ1V151M0810	500
		10	7.7	450	0.17	0.13	AFZ1V151M1007	500
	220	8	10.5	450	0.17	0.13	AFZ1V221M0810	500
		10	10.5	670	0.09	0.13	AFZ1V221M1010	500
	330	10	10.5	670	0.09	0.13	AFZ1V331M1010	500
		12.5	13.5	820	0.07	0.15	AFZ1V331M1313	200
	470	10	13	720	0.08	0.13	AFZ1V471M1013	400
		12.5	13.5	820	0.07	0.15	AFZ1V471M1313	200
		12.5	16	950	0.06	0.15	AFZ1V471M1316	200
	680	12.5	16	950	0.06	0.15	AFZ1V681M1316	200
50	1	4	5.7	60	2.9	0.10	AFZ1H010M0406	2000
	2.2	4	5.7	60	2.9	0.10	AFZ1H2R2M0406	2000
	3.3	4	5.7	60	2.9	0.10	AFZ1H3R3M0406	2000
	4.7	4	5.7	60	2.9	0.10	AFZ1H4R7M0406	2000
		5	5.7	85	1.52	0.10	AFZ1H4R7M0506	1000
	10	6.3	5.7	165	0.88	0.10	AFZ1H100M0606	1000
	22	6.3	5.7	165	0.88	0.10	AFZ1H220M0606	1000
	33	6.3	7.7	185	0.68	0.10	AFZ1H330M0607	1000
	47	6.3	7.7	185	0.68	0.10	AFZ1H470M0607	1000
		8	6.5	185	0.68	0.10	AFZ1H470M0806	1000
		8	10.5	369	0.34	0.10	AFZ1H470M0810	500
	68	8	10.5	369	0.34	0.10	AFZ1H680M0810	500
	100	8	10.5	369	0.34	0.10	AFZ1H101M0810	500
		10	10.5	553	0.18	0.10	AFZ1H101M1010	500
	150	10	10.5	553	0.18	0.10	AFZ1H151M1010	500
	220	10	10.5	553	0.18	0.10	AFZ1H221M1010	500
		12.5	13.5	650	0.12	0.10	AFZ1H221M1313	200
	330	12.5	13.5	650	0.12	0.10	AFZ1H331M1313	200

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

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**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)
63	4.7	5	5.7	70	2.9	0.08	AFZ1J4R7M0506	1000
	10	6.3	5.7	130	1.5	0.08	AFZ1J100M0606	1000
	22	6.3	7.7	150	0.9	0.08	AFZ1J220M0607	1000
	33	8	10.5	280	0.5	0.08	AFZ1J330M0810	500
	47	8	10.5	280	0.5	0.08	AFZ1J470M0810	500
	100	10	10.5	450	0.35	0.08	AFZ1J101M1010	500
	150	12.5	13.5	700	0.16	0.08	AFZ1J151M1313	200
	220	12.5	13.5	700	0.16	0.08	AFZ1J221M1313	200
80	4.7	6.3	5.7	40	3.0	0.08	AFZ1K4R7M0606	1000
	10	6.3	7.7	60	2.4	0.08	AFZ1K100M0607	1000
		8	6.5	60	2.4	0.08	AFZ1K100M0806	1000
	22	8	10.5	130	1.3	0.08	AFZ1K220M0810	500
	33	8	10.5	130	1.3	0.08	AFZ1K330M0810	500
	47	10	10.5	200	0.70	0.08	AFZ1K470M1010	500
	68	10	13	350	0.40	0.08	AFZ1K680M1013	400
		12.5	13.5	450	0.32	0.08	AFZ1K680M1313	200
	100	10	10.5	200	0.70	0.08	AFZ1K101M1010	500
		10	13	350	0.40	0.08	AFZ1K101M1013	400
		12.5	13.5	450	0.32	0.08	AFZ1K101M1313	200
	150	12.5	13.5	450	0.32	0.08	AFZ1K151M1313	200
100	22	8	10.5	130	1.3	0.08	AFZ2A220M0810	500
	33	10	10.5	200	0.70	0.08	AFZ2A330M1010	500
	47	10	10.5	200	0.70	0.08	AFZ2A470M1010	500
		10	13	350	0.40	0.08	AFZ2A470M1013	400
		12.5	13.5	450	0.32	0.08	AFZ2A470M1313	200
	68	12.5	13.5	450	0.32	0.08	AFZ2A680M1313	200
	100	12.5	13.5	450	0.32	0.08	AFZ2A101M1313	200

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