VZ series

Wide Temperature Range

- **Smaller case size than VT series,**

SPECIFICATIONS

Item	Performance Characteristics
Operating Temperature Range	–40~+105℃
Voltage Range	6.3V~400V
Capacitance Range	0.1~22000 μF
Capacitance Tolerance	±20% at 120Hz, 20℃
Tan δ	For capacitance of more than 1000 μF, add 0.02 for every increase of 1000 μF, Measurement frequency: 120Hz, Temperature: 20℃

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160~315	350~400
Tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25

Rated voltage (V)	6.3~100	160~400
Leakage Current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 μA, whichever is greater, After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 μA, whichever is greater,	CV≤1000; I=0.1CV+40(μA) MAX. (1 minute's) CV>1000; I=0.04CV+100(μA) MAX. (1 minute's)

Stability at Low Temperature

Rated Voltage(V)		6.3	10	16	25	35~100	160~200	250~350	400
Impedance Ratio ZT/z20 (MAX.)	Z–25℃/Z+20℃	5	4	3	2	2	3	4	6
	Z–40℃/Z+20℃	10	8	6	4	3	4	8	10

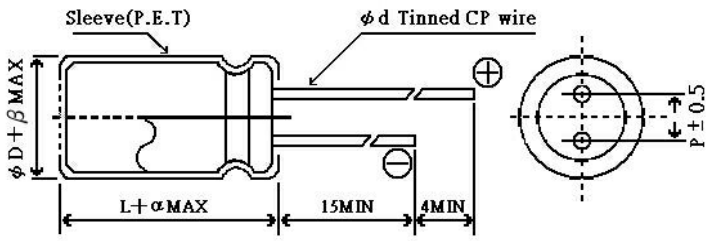
Load Life

After 2000 hours' application of rated voltage at 105℃
Capacitors meet the characteristics requirements listed at right.

Capacitance Change	Within ±20% of initial value
Tan δ	Not exceeding 200% of initial specified value
Leakage Current	Not exceeding Initial specified value

Shelf Life: After storing capacitors under no load at 105℃ for 1000 hours, they will meet the specified value for endurance characteristics listed above.

RADIAL LEAD TYPE



φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5

α	(L<20) 1.5
	(L≥20) 2.0

Allowable Ripple Current VS. Ambient Temperature

Ambient temp. (℃)	~+70	+105
Coefficient	1.78	1.00

DIMENSIONS

D×L (mm)

W.V. / Cap(μF)	S.V.	160(2C)		200(2D)		250(2E)		315(2F)		350(2V)		400(2G)	
		200		250		300		365		400		450	
0.47	R47	6.3×11	11	6.3×11	11	6.3×11	10					6.3×11	8.5
1	1R0	6.3×11	16	6.3×11	16	6.3×11	15	6.3×11	15	6.3×11	15	6.3×11	14
												8×11.5	17
2.2	2R2	6.3×11	25	6.3×11	25	6.3×11	23	8×11.5	26	6.3×11	21	8×11.5	27
										8×11.5	26	10×12.5	30
3.3	3R3	6.3×11	30	6.3×11	30	6.3×11	28	10×12.5	38	8×11.5	30	8×11.5	34
						8×11.5	32			10×12.5	38	10×12.5	38
4.7	4R7	6.3×11	34	6.3×11	35	6.3×11	35	10×12.5	45	8×11.5	39	10×12.5	42
				8×11.5	39	8×11.5	39			10×12.5	45	10×16	50
10	100	8×11.5	41	8×11.5	57	10×12.5	71	10×20	80	10×12.5	64	10×16	64
				10×12.5	65	10×16	74			10×20	80	12.5×20	90
22	220	10×12.5	92	10×16	105	10×20	105	12.5×20	115	12.5×20	105	12.5×25	140
		10×16	100	10×20	120	12.5×20	130			12.5×25	115	16×25	165
33	330	10×16	125	10×20	140	10×20	140	16×25	195	12.5×25	170	16×25	170
		10×20	145	12.5×20	160	12.5×20	160			16×25	195	16×31.5	215
47	470	10×20	150	12.5×20	195	12.5×20	190	16×25	230	16×25	210	16×25	200
		12.5×20	195			12.5×25	210			16×35.5	270	16×35.5	270
68	680	12.5×25	200	12.5×25	250	16×25	270			16×25	285	16×31.5	240
100	101	12.5×25	215	16×25	320	16×25	310	18×35.5	395	18×35.5	370	18×35.5	310
				16×31.5	375	16×31.5	365			18×40	420		
220	221	16×31.5	410	16×35.5	500	18×35.5	580						
		16×35.5	570	18×35.5	575								
330	331	18×35.5	570	18×35.5	675								
		18×40	750	18×40	780								
470	471	18×40	855									Case size	Allowable Ripple

Allowable Ripple (mA rms) at 105℃ 120Hz

VZ series

Wide Temperature Range
• Smaller case size than VT series,

■ DIMENSIONS

D×L (mm)

W.V. / Cap(μF) \ S.V		6.3(0J)		10(1A)		16(1C)		25(1E)		35(1V)		50(1H)		63(1J)		100(2A)	
		8		13		20		32		44		63		79		125	
0.1	R10											5×11	1.3			5×11	1.5
0.22	R22											5×11	2.9			5×11	3.4
0.33	R33											5×11	4.3			5×11	5.0
0.47	R47											5×11	7			5×11	7.1
1	1R0											5×11	13			5×11	15
2.2	2R2											5×11	20			5×11	21
3.3	3R3											5×11	25			5×11	29
4.7	4R7							5×11	25	5×11	28	5×11	30	5×11	32	5×11	32
10	100					5×11	35	5×11	36	5×11	41	5×11	46	5×11	46	5×11	50
																6.3×11	54
22	220	5×11	45	5×11	45	5×11	54	5×11	58	5×11	61	5×11	68	5×11	71	6.3×11	93
33	330	5×11	55	5×11	58	5×11	65	5×11	68	5×11	75	5×11	90	6.3×11	100	8×11.5	130
47	470	5×11	65	5×11	68	5×11	79	5×11	83	5×11	93	5×11	115	6.3×11	120	10×12.5	165
68	680									6.3×11	110	6.3×11	150	8×11.5	155	10×12.5	190
100	101	5×11	95	5×11	105	5×11	115	5×11	125	6.3×11	150	8×11.5	190	8×11.5	200	10×16	240
								6.3×11	140					10×12.5	215	10×20	265
220	221	5×11	145	5×11	155	6.3×11	190	6.3×11	200	8×11.5	250	10×12.5	300	10×16	335	12.5×20	390
				6.3×11	175			8×11.5	240							12.5×25	440
330	331	6.3×11	195	6.3×11	210	8×11.5	265	8×11.5	275	10×12.5	350	10×16	410	10×20	510	12.5×25	540
470	471	6.3×11	230	6.3×11	250	8×11.5	315	10×12.5	380	10×16	460	10×20	540	12.5×20	640	16×25	715
												12.5×20	530				
1000	102	8×11.5	390	10×12.5	460	10×12.5	500	10×16	610	12.5×20	810	12.5×25	950	16×25	930	18×35.5	960
						10×16	560	10×20	680							18×40	985
2200	222	10×16	635	10×16	705	10×20	710	12.5×25	1090	16×25	1260	16×31.5	1410	18×35.5	1650		
		10×20	710	10×20	760	12.5×25	920					16×35.5	1470				
3300	332	10×20	840	12.5×20	1000	12.5×25	1170	16×25	1400	16×31.5	1500	18×35.5	1770				
										16×35.5	1610						
4700	472	12.5×20	1090	12.5×25	1260	16×25	1480	16×25	1570	16×35.5	1780						
								16×31.5	1710	18×35.5	1910						
6800	682	12.5×25	1350	16×25	1570	16×25	1600	16×35.5	1850	18×40	2000						
						16×35.5	1780	18×35.5	2040								
10000	103	16×25	1650	16×31.5	1820	16×35.5	1930	18×40	2000								
				16×35.5	1890	18×35.5	2060										
15000	153	16×31.5	1820	16×35.5	2050	18×40	2100										
		16×35.5	2010	18×35.5	2180												
22000	223	18×35.5	2280	18×40	2420											Case size	
		18×40	2350														

Allowable Ripple (mA rms) at 105℃ 120Hz

■ Frequency Coefficient of Allowable Ripple Current

V.	Frequency (Hz) / Cap. (μF)	50	120	300	1K	10K~
6.3~100	~68	0.75	1.00	1.35	1.57	2.00
	100~470	0.80	1.00	1.23	1.34	1.50
	1000~22000	0.85	1.00	1.10	1.13	1.15
160~400	0.47~220	0.80	1.00	1.25	1.40	1.60
	330~470	0.90	1.00	1.10	1.13	1.15