

## ZV Series

### Features

- ◆ Low impedance 100 KHz
- ◆ Reflow soldering is available
- ◆ Available for high density mounting
- ◆ Load life 2000 hrs at 105°C
- ◆ For detail specifications, please refer to Engineering Bulletin No.E135
- ◆ RoHS Compliant



SMD

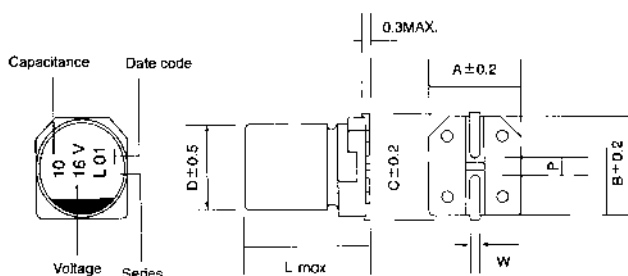
### Specifications

Item	Performance Characteristics
Operating Temperature Range	-55~ +105°C
Rated Voltage Range	6.3~50 VDC
Capacitance Range	1 to 1500 μF
Capacitance Tolerance	±20%(120Hz,+20°C)
Leakage Current (+20°C,max.)	0.01CV or 3(μA) After 2 minutes, whichever is greater measured with rated working voltage applied
Dissipation Factor (tan δ , at 20°C , 120Hz)	Working voltage(VDC) 6.3 10 16 25 35 50
	D.F. (%) max. 26 19 16 14 14 12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max
	Working voltage(VDC) 6.3 10 16 25 35 50
	Z-25°C / Z+20°C 2 3 2 2 2 2
	Z-55°C / Z+20°C 8 6 4 4 3 3
Load Life	Test conditions Duration time :2000 Hrs Ambient temperature :+105°C Applied voltage :Rated DC working voltage
	After test requirement at +105°C : Capacitance change :≤ ±25% of the initial measured value Dissipation factor :≤200% of the initial specified value Leakage current :≤The initial specified value
Shelf Life	Test conditions Duration time :1000 Hrs Ambient temperature :+105°C Applied voltage :None
	After test requirement at +20°C : Same limits as Load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed under.
	Leakage current Less than specified value
	Capacitance change Within ±10% of initial value
	tan δ Less than specified value

### Multiplier for Ripple Current vs. Frequency

CAP(μF)\Frequency(Hz)	60(50)	120	400	1K	10K	50K-100K
CAP ≤ 10	0.47	0.59	0.76	0.85	0.97	1.0
10 < CAP ≤ 100	0.52	0.65	0.80	0.89	0.97	1.0

### Diagram of Dimensions:(unit:mm)



φD	L	A	B	C	W	P
4	5.5	4.3	4.3	4.9	0.5~0.8	1.0
5	5.5	5.3	5.3	5.9	0.5~0.8	1.4
6.3	5.5	6.6	6.6	7.2	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.2	0.5~0.8	2.2
8	6.5	8.3	8.3	9.0	0.5~0.8	2.3
8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
10	10.5	10.3	10.3	11.0	0.7~1.1	4.5

## Case Size

φ DxL(mm)

WV (SV) Cap (μF)	6.3 (8)			10 (13)			16 (20)			25 (32)			35 (44)			50 (63)		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
1.0													4X5.5	53	5	4X5.5	53	5
2.2													4X5.5	53	5	4X5.5	53	5
3.3													4X5.5	53	5	4X5.5	53	5
4.7										4X5.5	53	5	4X5.5	53	5	4X5.5	53	5
6.8										4X5.5	58	4.5	4X5.5	65	4.0	5X5.5	65	4
10							4X5.5	65	5	4X5.5	74	3.7	4X5.5	90	3.5	5X5.5	90	3.5
										5X5.5	80	2.6	5X5.5	98	2.5	6.3X5.5	100	2.5
										6.3X5.5	110	2.4						
15							4X5.5	70	4.6	5X5.5	100	2.2	5X5.5	120	1.8	6.3X5.5	130	1.8
										6.3X5.5	115	1.8	6.3X5.5	140	1.5			
22	4X5.5	53	3.5	4X5.5	80	2.6	4X5.5	83	3.0	5X5.5	128	1.7	5X5.5	140	1.4	6.3X5.5	140	1.5
							5X5.5	110	2.6	6.3X5.5	140	1.5	6.3X5.5	150	1.3			
27	4X5.5	65	3.2	5X5.5	85	2.4	5X5.5	135	1.9	6.3X5.5	145	1.4	6.3X5.5	165	1.2	6.3X7.7	160	1.35
33	4X5.5	80	2.8	4X5.5	85	2.3	5X5.5	160	2.2	5X5.5	145	1.4	6.3X5.5	185	1.2	6.3X7.7	170	0.8
	5X5.5	82	2.6	5X5.5	110	2.1	6.3X5.5	170	1.5	6.3X5.5	175	1.3	6.3X7.7	210	0.9	8X6.5	180	0.75
47	4X5.5	82	2.4	5X5.5	130	2.0	5X5.5	170	2.0	6.3X5.5	180	1.2	6.3X5.5	200	1.0	6.3X7.7	200	0.79
										6.3X7.7	195	0.8	6.3X7.7	220	0.75	8X6.5	220	0.72
	5X5.5	85	2.2	6.3X5.5	160	1.5	6.3X5.5	185	1.5	8X6.5	220	0.75	8X6.5	240	0.7			
56	5X5.5	94	1.70	6.3X5.5	180	1.45	6.3X5.5	195	1.3	6.3X5.5	195	1.15	6.3X7.7	230	0.73	8X10.5	260	0.68
68	5X5.5	100	1.6	6.3X5.5	195	1.4	6.3X5.5	205	1.2	6.3X5.5	200	1.1	6.3X7.7	240	0.7	8X10.5	300	0.6
							6.3X7.7	210	1.1	6.3X7.7	210	0.75						
	6.3X5.5	120	1.3	6.3X7.7	210	1.3	8X6.5	220	1.0	8X6.5	230	0.7	8X6.5	250	0.68			
100	5X5.5	110	1.5	6.3X5.5	210	1.3	6.3X5.5	210	1.1	6.3X7.7	220	0.75	6.3X7.7	270	0.67	8X10.5	310	0.55
							6.3X7.7	230	1.2	6.3X7.7	220	0.9	8X6.5	250	0.7	8X10.5	350	0.5
150	6.3X5.5	170	0.95	6.3X5.5	220	1.0	6.3X7.7	225	0.8				8X10.5	430	0.45	10X10.5	540	0.28
	6.3X7.7	195	0.85	8X6.5	240	0.8	8X6.5	240	0.7									
220	6.3X5.5	195	0.6	6.3X7.7	245	0.6	6.3X7.7	250	0.75	8X10.5	480	0.3						
	6.3X7.7	210	0.57	8X6.5	255	0.55	8X6.5	260	0.66	10X10.5	500	0.28	8X10.5	450	0.25	10X10.5	570	0.26
330	6.3X7.7	230	0.51	8X10.5	400	0.36	8X10.5	470	0.34	8X10.5	510	0.26	10X10.5	570	0.23			
	8X6.5	250	0.49															
470	8X10.5	380	0.45	8X10.5	470	0.32	8X10.5	520	0.3	10X10.5	570	0.18						
680	8X10.5	420	0.42	10X10.5	620	0.29	10X10.5	600	0.26									
1000	8X10.5	470	0.28	10X10.5	670	0.25												
	10X10.5	500	0.25															
1200	10X10.5	530	0.20															
1500	10X10.5	570	0.17															

Ripple Current (mA, rms) at 105°C 100KHz

Max Impedance (Ω) at 20°C 100 KHz