

## DV Series Chip type

### Features

- ◆ Chip type ,Low impedance
- ◆ Chip type with load life of 2000 hours at +105°C
- ◆ Designed for surface mounting on high density PC board
- ◆ Applicable to automatic mounting machine using carrier tape
- ◆ Complied to the RoHS directive
- ◆ For detail specifications, please refer to Engineering Bulletin NO. E173

ZV **Low Impedance** → DV



SMD

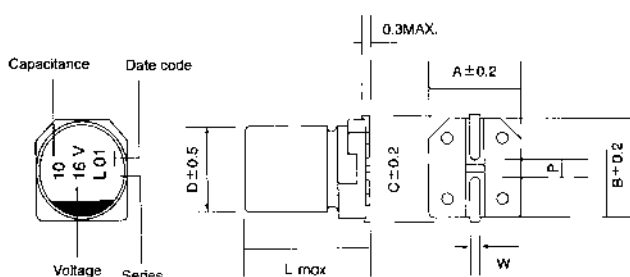
### Specifications

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.)	$I \leq 0.01 CV$ or $3 (\mu A)$ After 2 minutes whichever is greater measured with rated working voltage applied.
Dissipation Factor ( $\tan \delta$ , at 20°C , 120Hz)	Working voltage(VDC) 6.3 10 16 25 35 50
	D.F. (%) max. 24 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 2 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 +20°C : Capacitance change :Within ±30% of initial value Dissipation factor :Less than 300% of specified value Leakage current :Less than 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 following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 30 seconds.
	Leakage current Less than specified value
	Capacitance change Within ±10% of initial value
	$\tan \delta$ 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	55	4.5
2.2																4X5.5	55	4.5
3.3													4X5.5	80	2.8	4X5.5	55	4.5
4.7													4X5.5	85	2.3	4X5.5	55	4.5
6.8										4X5.5	70	2.8	4X5.5	88	2.2	5X5.5	75	3.8
10							4X5.5	80	2.2	4X5.5	85	2.1	4X5.5	90	2.0	5X5.5	95	2.8
15							4X5.5	85	2.0	5X5.5	125	1.9	5X5.5	140	1.2	6.3X5.5	140	1.6
22	4X5.5	75	2.2	4X5.5	80	2.2	4X5.5	90	1.98	5X5.5	145	1.2	5X5.5	155	1.1	6.3X5.5	150	1.3
27	4X5.5	79	1.98	5X5.5	125	1.9	5X5.5	170	0.74	6.3X5.5	200	0.62	6.3X5.5	210	0.6	6.3X7.7	180	1.2
33	4X5.5	82	1.9	4X5.5	90	1.85	6.3X5.5	185	0.6	5X5.5	160	1.05	6.3X5.5	230	0.54	6.3X7.7	190	0.71
	5X5.5	130	1.3	5X5.5	150	1.2	6.3X5.5	220	0.58	6.3X5.5	220	0.58	8X6.5	260	0.51	8X6.5	200	0.7
47	4X5.5	86	1.88	5X5.5	165	1.1	5X5.5	195	1.05	6.3X5.5	220	0.56	6.3X5.5	240	0.53	6.3X7.7	230	0.7
	5X5.5	150	1.1	6.3X5.5	180	0.59	6.3X5.5	210	0.58	6.3X7.7	230	0.54	8X6.5	250	0.49	8X6.5	240	0.69
56	5X5.5	150	1.10	6.3X5.5	210	0.57	6.3X5.5	220	0.56	6.3X5.5	230	0.54	6.3X7.7	250	0.49	8X10.5	300	0.52
68	5X5.5	160	0.9	6.3X5.5	220	0.55	6.3X5.5	230	0.54	6.3X5.5	240	0.48	6.3X7.7	265	0.4	8X10.5	320	0.5
	6.3X5.5	220	0.55				8X6.5	240	0.50	8X6.5	260	0.45						
100	5X5.5	170	0.8	6.3X5.5	240	0.53	6.3X5.5	255	0.52	6.3X7.7	290	0.38	6.3X7.7	300	0.38	8X10.5	350	0.46
	6.3X5.5	230	0.53							8X6.5	300	0.36	8X10.5	420	0.28			
150	6.3X5.5	235	0.51	6.3X5.5	250	0.49	6.3X7.7	265	0.45	8X10.5	480	0.25	8X10.5	510	0.24	10X10.5	600	0.25
	8X6.5	250	0.48	8X6.5	260	0.47	8X6.5	270	0.44									
220	6.3X5.5	240	0.48	6.3X7.7	270	0.44	6.3X7.7	275	0.43	8X10.5	530	0.22	8X10.5	570	0.21	10X10.5	650	0.23
	6.3X7.7	260	0.45	8X6.5	285	0.40	8X6.5	285	0.41									
330	6.3X7.7	275	0.36	8X10.5	500	0.25	8X10.5	550	0.25	8X10.5	570	0.2	10X10.5	650	0.15			
	8X6.5	290	0.34															
470	8X10.5	450	0.28	8X10.5	550	0.25	8X10.5	590	0.22	10X10.5	650	0.15						
680	8X10.5	500	0.25	10X10.5	680	0.2	10X10.5	720	0.16									
1000	8X10.5	530	0.20	10X10.5	740	0.15												
	10X10.5	570	0.17															
1200	10X10.5	600	0.16															
1500	10X10.5	650	0.13															

Ripple Current ( mA, rms ) at 105°C 100KHz  
Max Impedance ( Ω ) at 20°C 100 KHz