

## MV Series Chip type ,Long Life, High CV

### Features

- ◆ Chip type long life capacitance in large case sizes
- ◆ Chip type with load life of 5000 hours at +105°C
- ◆ Designed for surface mounting on high density PC board
- ◆ Applicable to automatic insertion machine using carrier tape
- ◆ Complied to the RoHS directive
- ◆ For detail specifications, please refer to Engineering Bulletin NO. E156
- ◆ RoHS Compliant



SMD

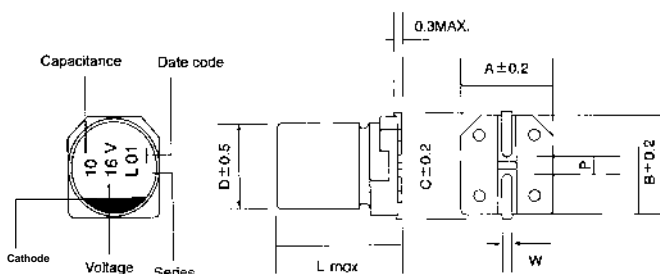
### Specifications

Item	Performance Characteristics						
Operating Temperature Range	-40~+105°C						
Rated Voltage Range	6.3~50 VDC						
Capacitance Range	0.1 to 1000 μF						
Capacitance Tolerance	±20%(120Hz,+20°C)						
Leakage Current (+20°C,max.)	I ≤ 0.01 CV 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.	32	28	22	16	13	12
Low Temperature Characteristics (at 120Hz)	Impedance ratio max (at: 120Hz)						
	Working voltage(VDC)	6.3	10	16	25	35	50
	Z-25°C / Z+20°C	4	3	2	2	2	2
	Z-40°C / Z+20°C	10	7	5	3	3	3
Load Life	Test condition						
	Duration time	: 5000 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 condition						
	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 δ	Less than specified value					

### Multiplier for Ripple Current vs. Frequency

CAP(μF)\Frequency(Hz)	60(50)	120	500	1K	≥10K
0.1 ≤ CAP ≤ 100 μF	0.8	1.0	1.20	1.30	1.50
100 < CAP ≤ 1000 μF	0.8	1.0	1.10	1.15	1.20

### 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

WV(SV) Cap(μF)		6.3 (8)		10 (13)		16 (20)		25 (32)		35 (44)		50 (63)	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.1												4X5.5	1.0
0.22												4X5.5	2.6
0.33												4X5.5	3.2
0.47												4X5.5	3.8
1.0												4X5.5	6.2
2.2												4X5.5	11
3.3												4X5.5	14
4.7								4X5.5	13	4X5.5	15	5X5.5	19
10						4X5.5	17	4X5.5	23	5X5.5	25	6.3X5.5	30
22	4X5.5	22	5X5.5	28	5X5.5	30	6.3X5.5	40	6.3X5.5	42	6.3X7.7	52	
33	5X5.5	32	5X5.5	34	6.3X5.5	44	6.3X5.5	48	6.3X7.7	57	8X10.5	80	
47	5X5.5	36	6.3X5.5	48	6.3X5.5	50	6.3X7.7	63	8X10.5	92	8X10.5	95	
100	6.3X5.5	60	6.3X7.7	79	6.3X7.7	81	8X10.5	116	10X10.5	150	10X10.5	160	
220	6.3X7.7	110	8X10.5	140	10X10.5	216	10X10.5	240	10X10.5	280			
330	8X10.5	160	10X10.5	240	10X10.5	300	10X10.5	375					
470	10X10.5	260	10X10.5	280	10X10.5	320							
1000	10X10.5	340											

φ DxL(mm)

Ripple Current ( mA, rms ) at 105°C 120Hz