

MV Series Chip type ,Long Life, High CV



Features

- ◆ Chip type long life capacitance in large case sizes
- ◆ Chip type with Endurance 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
- ◆ RoHS Compliant

Specifications

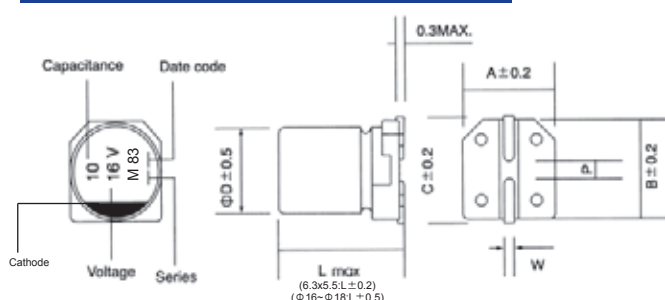
Item	Performance Characteristics																					
Operating Temperature Range	-40~+105°C																					
Rated Voltage Range	6.3~50 VDC																					
Capacitance Range	0.1 to 1000 μF																					
Capacitance Tolerance	±20%(120Hz,+20°C)																					
Leakage Current (+20°C,max.)	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)	<table border="1"> <tr> <td>Working Voltage(VDC)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>D.F.(%)max.</td> <td>32</td> <td>28</td> <td>22</td> <td>16</td> <td>13</td> <td>12</td> </tr> </table>	Working Voltage(VDC)	6.3	10	16	25	35	50	D.F.(%)max.	32	28	22	16	13	12							
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Low Temperature Characteristics (at 120Hz)	Impedance ratio max (at: 120Hz)																					
	<table border="1"> <tr> <td>Working voltage(VDC)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>10</td> <td>7</td> <td>5</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	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
	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																
Endurance	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 Endurance. 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.																					
	<table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>tan δ</td> <td>Less than specified value</td> </tr> </table>	Leakage current	Less than specified value	Capacitance change	Within ±10% of initial value	tan δ	Less than specified value															
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Multiplier for Ripple Current vs. Frequency

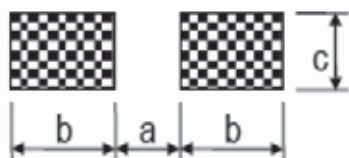
CAP(μF)\Frequency(Hz)	60(50)	120	500	1K	≥10K
0.1 ≤ CAP ≤ 100 μF	0.8	1.0	1.20	1.30	1.50
100 < CAP ≤ 1000 μF	0.8	1.0	1.10	1.15	1.20

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	6.1	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
12.5	14	13.0	13.0	13.9	1.0~1.4	4.5
16	17	17.0	17.0	18.0	1.0~1.4	6.6
16	21.5	17.0	17.0	18.0	1.0~1.4	6.6
18	16.5	19.0	19.0	20.0	1.0~1.4	6.6
18	21.5	19.0	19.0	20.0	1.0~1.4	6.6

Diagram of Dimensions:(unit:mm)



Recommended land pattern:(unit:mm)



Φ DxL	a	b	c
4xall	1	2.6	1.6
5xall	1.4	3	1.6
6.3xall	2.1	3.5	1.6
8xL(height \leq 6.5)	2.1	4.5	1.6
8xL(height $>$ 6.5)	2.8	4.2	1.9
10xall	4.3	4.4	1.9
12.5xall	4.3	5.8	2.5
16xall	6	6.5	3.5
18xall	6	7.5	3.5

Case Size

WV (Vdc)	Cap (μ F)	Size (mm)	Rated Ripple current (mArms/105°C /120Hz)
6.3	22	4x5.5	22
6.3	33	5x5.5	32
6.3	47	5x5.5	36
6.3	100	6.3x5.5	60
6.3	220	6.3x7.7	110
6.3	330	8x10.5	160
6.3	470	10x10.5	260
6.3	1000	10x10.5	340
10	22	5x5.5	28
10	33	5x5.5	34
10	47	6.3x5.5	48
10	100	6.3x7.7	79
10	220	8x10.5	140
10	330	8x10.5	210
10	330	10x10.5	240
10	470	8x10.5	250
10	470	10x10.5	280
10	1000	10x10.5	410
16	10	4x5.5	17
16	22	4x5.5	26
16	22	5x5.5	30
16	33	6.3x5.5	44
16	47	6.3x5.5	50
16	100	6.3x7.7	81
16	220	8x10.5	190
16	220	10x10.5	216
16	330	10x10.5	300
16	470	10x10.5	320
25	4.7	4x5.5	13
25	10	4x5.5	23
25	22	5x5.5	35

WV (Vdc)	Cap (μ F)	Size (mm)	Rated Ripple current (mArms/105°C /120Hz)
25	22	6.3x5.5	40
25	33	6.3x5.5	48
25	47	6.3x7.7	63
25	100	6.3x7.7	88
25	100	8x10.5	116
25	220	10x10.5	240
25	330	10x10.5	375
25	470	10x10.5	450
35	4.7	4x5.5	15
35	10	5x5.5	25
35	22	6.3x5.5	42
35	33	6.3x7.7	57
35	47	8x10.5	92
35	100	8x10.5	130
35	100	10x10.5	150
35	220	10x10.5	280
35	330	10x10.5	390
50	0.1	4x5.5	1
50	0.22	4x5.5	3
50	0.33	4x5.5	3
50	0.47	4x5.5	4
50	1	4x5.5	6
50	2.2	4x5.5	11
50	3.3	4x5.5	14
50	4.7	5x5.5	19
50	10	6.3x5.5	30
50	22	6.3x7.7	52
50	33	8x10.5	80
50	47	8x10.5	95
50	100	10x10.5	160