

# MV Series

## CHIP TYPE, HIGH VOLTAGE/LONG LIFE

### 貼片式，高壓長壽命品



- Operating with wide temperature range -55~+105°C  
適用於 -55~+105°C 的寬溫範圍
- High voltage, low ESR, high ripple current  
高電壓，低阻抗，高紋波電流
- Load life of 3000 hours  
負荷壽命 3000 小時
- RoHS & REACH compliant, Halogen-free  
符合 RoHS 與 REACH，無鹵

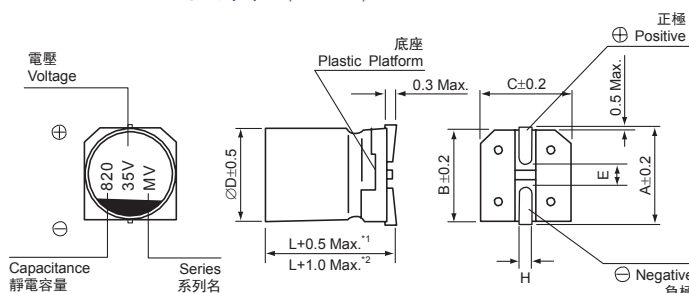


### □ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性		
Operation Temperature Range 使用溫度範圍	-55 ~ +105°C		
Voltage Range 額定工作電壓範圍	16 ~ 125V		
Capacitance Range 靜電容量範圍	5.6 ~ 680µF		
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C		
Leakage Current 漏電流 (*1)	≤Specified value (after 2 minutes application of rated voltage at 20°C). ≤規範值 (20°C 環境中施加額定工作電壓 2 分鐘後)。		
Dissipation Factor (tan δ) 損耗角正切	≤Specified value at 120Hz, 20°C. ≤規範值 (在 20°C 120Hz 環境下)。		
ESR 阻抗值 (*2)	≤Specified value at 100KHz, 20°C. ≤規範值 (在 20°C 100KHz 環境下)。		
Stability at Low Temperature 低溫特性	Measurement frequency 測試頻率: 100KHz		
	<table border="1"> <tr> <td>Impedance Ratio 阻抗比 ZT/Z20 (max.)</td> <td>Z(+105°C)/Z(20°C) Z(-55°C)/Z(20°C)</td> <td>≤1.25 ≤1.25</td> </tr> </table>	Impedance Ratio 阻抗比 ZT/Z20 (max.)	Z(+105°C)/Z(20°C) Z(-55°C)/Z(20°C)
Impedance Ratio 阻抗比 ZT/Z20 (max.)	Z(+105°C)/Z(20°C) Z(-55°C)/Z(20°C)	≤1.25 ≤1.25	
Damp Heat (Steady State) 穩態濕熱	When the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 60°C, 90% RH, they meet the characteristics listed below. 在 60°C 和相對濕度 90% 環境下施加額定工作電壓 1000 小時並冷卻至 20°C 後，電容器的特性符合下表的要求。		
	Capacitance Change 靜電容量變化率	Within ±20% of initial value 為初始值的±20%以內 (*3)	
	Dissipation Factor 損耗角正切	150% or less of initial specified value 不大於規範值的 150%	
	ESR 阻抗值 (*2)	150% or less of initial specified value 不大於規範值的 150%	
	Leakage Current 漏電流	Initial specified value or less 不大於規範值	
Endurance 耐久性	After 3000 hours application of the rated voltage at 105°C, they meet the characteristics listed below. 在 105°C 環境中施加額定工作電壓 3000 小時後，電容器的特性符合下表的要求。		
	Capacitance Change 靜電容量變化率	Within ±20% of initial value 為初始值的±20%以內 (*3)	
	Dissipation Factor 損耗角正切	150% or less of initial specified value 不大於規範值的 150%	
	ESR 阻抗值 (*2)	150% or less of initial specified value 不大於規範值的 150%	
	Leakage Current 漏電流	Initial specified value or less 不大於規範值	
Resistance to Soldering Heat 耐焊接熱特性 <small>(Please refer page 22 for soldering conditions) (焊接條件請查閱第 22 頁)</small>	After reflow soldering and restored at room temperature, they meet the characteristics listed below. 經過回流焊並冷卻至室溫後，電容器的特性符合下表的要求。		
	Capacitance Change 靜電容量變化率	Within ±10% of initial value 初始值的±10%以內 (*3)	
	Dissipation Factor 損耗角正切	130% or less of initial specified value 不大於規範值的 130%	
	ESR 阻抗值 (*2)	130% or less of initial specified value 不大於規範值的 130%	
	Leakage Current 漏電流	Initial specified value or less 不大於規範值	
Marking 標識	Red print on the case top. 鋁殼頂部紅色字體印刷。		

- (\*1) If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.  
如未能確定，在 105°C 環境下連續施加額定工作電壓 120 分鐘後測量漏電流。
- (\*2) Should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform.  
測試應為靠近突出底座兩個端子的末端。
- (\*3) The value before test of examination of resistance to soldering.  
焊接測試前的值。

### □ DRAWING 外形圖 (Unit: mm)



- \*1. Applicable to Ø5~Ø8 適用於Ø5~Ø8  
\*2. Applicable to Ø10 and above 適用於Ø10和Ø10以上

Dimension table in next page.  
尺寸表見下一頁。

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## □ DIMENSIONS 尺寸表 (Unit: mm)

∅D × L	6.3 × 6/6.5	6.3 × 8.7/9	8 × 7	8 × 9/10	8 × 12	10 × 8/10	10 × 12.7/13
A	7.3	7.3	9.0	9.0	9.0	11.0	11.0
B	6.6	6.6	8.3	8.3	8.3	10.3	10.3
C	6.6	6.6	8.3	8.3	8.3	10.3	10.3
E	2.1	2.1	3.2	3.2	3.2	4.6	4.6
L	6.0/6.5	8.7/9.0	7.0	9.0/10.0	12.0	8.0/10.0	12.7/13.0
H	0.5~0.8	0.5~0.8	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1

## □ DIMENSIONS & STANDARD RATINGS 規格尺寸及標準參數

WV (V)		16 (1C)					20 (1D)				
Cap. 容量 (μF)	Parameter 參數	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流
		47	470						6.3 × 6	0.12	188
56	560	6.3 × 6	0.12	179	50	1000	6.3 × 6	0.12	224	48	1300
68	680						8 × 7	0.12	272	45	1300
82	820	6.3 × 6	0.12	262	47	1300					
100	101	8 × 7	0.12	320	36	1500	8 × 7	0.12	400	42	1400
150	151	8 × 7	0.12	480	34	1700	8 × 10 (10 × 8)	0.12 (0.12)	600 (600)	28 (33)	2000 (1900)
180	181						10 × 8	0.12	720	25	3100
220	221	8 × 10 (10 × 8)	0.12 (0.12)	704 (704)	27 (31)	2000 (2000)	8 × 10 (8 × 12)	0.12 (0.12)	880 (880)	22 (27)	3700 (2300)
270	271	8 × 10 (8 × 12) (10 × 8)	0.12 (0.12) (0.12)	864 (864) (864)	21 (26) (24)	3800 (2300) (3200)	8 × 12 (10 × 10)	0.12 (0.12)	1080 (1080)	21 (27)	4000 (2300)
330	331	10 × 10	0.12	1056	26	2400	10 × 10 (10 × 12.7)	0.12 (0.12)	1320 (1320)	22 (26)	3800 (2700)
390	391	8 × 12	0.12	1248	20	4100					
470	471	10 × 10 (8 × 12)	0.12 (0.12)	1504 (1504)	21 (25)	3900 (2800)	10 × 12.7	0.12	1880	20	4300
680	681	10 × 12.7	0.12	2176	19	4400					

WV (V)		25 (1E)					35 (1V)				
Cap. 容量 (μF)	Parameter 參數	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流
		18	180						6.3 × 6	0.12	126
22	220						6.3 × 6	0.12	154	50	1300
27	270						8 × 7	0.12	189	55	1200
33	330	6.3 × 6	0.12	165	60	1000					
39	390						8 × 7	0.12	273	52	1400
47	470	6.3 × 6	0.12	235	49	1300					
56	560	8 × 7	0.12	280	50	1300	6.3 × 6.5 (8 × 10)	0.12 (0.12)	392 (392)	49 (31)	1600 (1900)
68	680						10 × 8	0.12	476	37	1800
82	820	8 × 7	0.12	410	47	1400	8 × 10 (8 × 12) (10 × 8)	0.12 (0.12) (0.12)	574 (574) (574)	24 (29) (27)	3600 (2200) (3000)
100	101	8 × 9	0.12	500	29	1900	6.3 × 8.7 (6.3 × 9)	0.12 (0.12)	700 (700)	35 (35)	1450 (1450)
120	121	8 × 9 (8 × 10)	0.12 (0.12)	600 (600)	29 (35)	1900 (1900)	8 × 12 (10 × 10)	0.12 (0.12)	840 (840)	23 (24)	3800 (3700)
150	151	8 × 10 (8 × 12) (10 × 8)	0.12 (0.12) (0.12)	750 (750) (750)	23 (28) (26)	3600 (2200) (3000)	8 × 9 (10 × 12.7)	0.12 (0.12)	1050 (1050)	23 (28)	2400 (2600)
180	181	10 × 10	0.12	900	28	2300	10 × 12.7	0.12	1260	22	4100
220	221	8 × 12	0.12	1100	22	3800					
270	271	10 × 10 (10 × 12.7)	0.12 (0.12)	1350 (1350)	23 (27)	3700 (2700)					
390	391	10 × 12.7	0.12	1950	21	4200					
470	471	10 × 13	0.12	2350	9	6100					

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## □ DIMENSIONS & STANDARD RATINGS 規格尺寸及標準參數

WV (V)		50 (1H)					63 (1J)				
Cap. 容量 (μF)	Parameter 參數	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流
5.6	5R6						6.3 × 6	0.12	71	105	700
8.2	8R2	6.3 × 6	0.12	82	81	800	6.3 × 6	0.12	103	56	1200
10	100						8 × 7	0.12	126	75	1000
12	120	6.3 × 6	0.12	120	55	1200	8 × 7	0.12	151	70	1100
15	150	8 × 7	0.12	150	63	1100					
22	220	8 × 7	0.12	220	60	1300	8 × 10 (10 × 8)	0.12 (0.12)	277 (277)	37 (56)	1700 (1400)
27	270						8 × 10 (8 × 12) (10 × 8)	0.12 (0.12) (0.12)	340 (340) (340)	30 (35) (38)	3200 (2000) (2500)
33	330	8 × 10 (10 × 8)	0.12 (0.12)	330 (330)	36 (49)	1700 (1500)	10 × 10	0.12	416	31	2200
39	390	8 × 12	0.12	390	34	2000	8 × 12	0.12	491	29	3400
47	470	8 × 10 (10 × 8)	0.12 (0.12)	470 (470)	29 (37)	3300 (2600)	10 × 10 (10 × 12.7)	0.12 (0.12)	592 (592)	30 (30)	3300 (2500)
56	560	8 × 12	0.12	560	28	3400	10 × 12.7	0.12	706	28	3400
68	680	10 × 10 (10 × 12.7)	0.12 (0.12)	680 (680)	29 (29)	3400 (2600)					
100	101	10 × 12.7	0.12	1000	27	3600					

WV (V)		80 (1K)					100 (2A)				
Cap. 容量 (μF)	Parameter 參數	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流
6.8	6R8						8 × 10	0.12	136	48	1500
10	100	8 × 10	0.12	160	43	1600	8 × 12	0.12	200	45	1700
12	120	8 × 12	0.12	192	41	1800	10 × 10	0.12	240	42	1900
15	150	10 × 10	0.12	240	39	1900					
18	180						10 × 12.7	0.12	360	41	2100
22	220	10 × 12.7	0.12	352	38	2200					

WV (V)		125 (2B)				
Cap. 容量 (μF)	Parameter 參數	Case size ØD×L (mm) 尺寸	Dissipation factor (tan δ) 損耗角正切	Leakage current (μA) 漏電流	ESR (mΩ) max. 20°C, 100KHz 阻抗值	Ripple current (mA rms) 105°C, 100KHz 紋波電流
6.8	6R8	8 × 10	0.12	170	93	1100
8.2	8R2	8 × 12	0.12	205	84	1300
12	120	10 × 10	0.12	300	69	1400
15	150	10 × 12.7	0.12	375	48	2000

- Taping specifications are given in page 17. 編帶標準請查閱第 17 頁。
- Soldering conditions and recommended land size are given in page 22. 焊接條件及推薦安裝尺寸請查閱第 22 頁。
- Please refer to page 18 for the minimum package quantity. 最小包裝數量請查閱第 18 頁。
- Please refer to page 14 for the Part Number System. 產品編碼規則請查閱第 14 頁。

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