

T MV Series CHIP TYPE, HIGH VOLTAGE/LONG LIFE

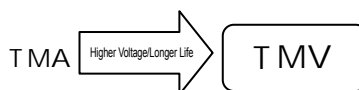
CONDUCTIVE POLYMER ALUMINUM SOLID ELECTROLYTIC CAPACITORS

■ Operating with wide temperature range -55~+105°C

■ High voltage, low ESR, high ripple current

■ Load life of 3000 hours

■ RoHS & REACH compliant, Halogen-free



SPECIFICATIONS

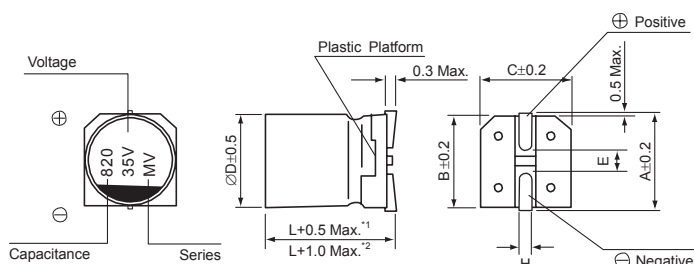
Items	Characteristics														
Operation Temperature Range	-55 ~ +105°C														
Voltage Range	16 ~ 125V														
Capacitance Range	5.6 ~ 680μF														
Capacitance Tolerance	±20% at 120Hz, 20°C														
Leakage Current	≤Specified value (after 2 minutes application of rated voltage at 20°C).														
Dissipation Factor (tan δ)	≤Specified value at 120Hz, 20°C.														
ESR	≤Specified value at 100KHz, 20°C.														
Stability at Low Temperature	Measurement frequency : 100KHz <table><tr><td>Impedance Ratio ZT/Z20 (max.)</td><td>Z(+105°C)/Z(20°C)</td><td>≤1.25</td></tr><tr><td></td><td>Z(-55°C)/Z(20°C)</td><td>≤1.25</td></tr></table>			Impedance Ratio ZT/Z20 (max.)	Z(+105°C)/Z(20°C)	≤1.25		Z(-55°C)/Z(20°C)	≤1.25						
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	Z(-55°C)/Z(20°C)	≤1.25													
Damp Heat (Steady State)	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. <table><tr><td>Capacitance Change</td><td colspan="2">Within ±20% of initial value</td></tr><tr><td>Dissipation Factor</td><td colspan="2">150% or less of initial specified value</td></tr><tr><td>ESR</td><td colspan="2">150% or less of initial specified value</td></tr><tr><td>Leakage Current</td><td colspan="2">Initial specified value or less</td></tr></table>			Capacitance Change	Within ±20% of initial value		Dissipation Factor	150% or less of initial specified value		ESR	150% or less of initial specified value		Leakage Current	Initial specified value or less	
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Dissipation Factor	150% or less of initial specified value														
ESR	150% or less of initial specified value														
Leakage Current	Initial specified value or less														
Endurance	After 3000 hours application of the rated voltage at 105°C, they meet the characteristics listed below. <table><tr><td>Capacitance Change</td><td colspan="2">Within ±20% of initial value</td></tr><tr><td>Dissipation Factor</td><td colspan="2">150% or less of initial specified value</td></tr><tr><td>ESR</td><td colspan="2">150% or less of initial specified value</td></tr><tr><td>Leakage Current</td><td colspan="2">Initial specified value or less</td></tr></table>			Capacitance Change	Within ±20% of initial value		Dissipation Factor	150% or less of initial specified value		ESR	150% or less of initial specified value		Leakage Current	Initial specified value or less	
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Dissipation Factor	150% or less of initial specified value														
ESR	150% or less of initial specified value														
Leakage Current	Initial specified value or less														
Resistance to Soldering Heat (Please refer page 22 for soldering conditions)	After reflow soldering and restored at room temperature, they meet the characteristics listed below. <table><tr><td>Capacitance Change</td><td colspan="2">Within ±10% of initial value</td></tr><tr><td>Dissipation Factor</td><td colspan="2">130% or less of initial specified value</td></tr><tr><td>ESR</td><td colspan="2">130% or less of initial specified value</td></tr><tr><td>Leakage Current</td><td colspan="2">Initial specified value or less</td></tr></table>			Capacitance Change	Within ±10% of initial value		Dissipation Factor	130% or less of initial specified value		ESR	130% or less of initial specified value		Leakage Current	Initial specified value or less	
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Dissipation Factor	130% or less of initial specified value														
ESR	130% or less of initial specified value														
Leakage Current	Initial specified value or less														
Marking	Red print on the case top.														

(*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.

(*2) Should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform.

(*3) The value before test of examination of resistance to soldering.

DRAWING (Unit: mm)



*1. Applicable to $\phi 5 \sim \phi 8$

*2. Applicable to $\phi 10$ and above



TMV Series

DIMENSIONS (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

WV (V) Cap. Parameter (μF)		16					20				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
47	476						6.3 × 6	0.12	188	55	1000
56	566	6.3 × 6	0.12	179	50	1000	6.3 × 6	0.12	224	48	1300
68	686						8 × 7	0.12	272	45	1300
82	826	6.3 × 6	0.12	262	47	1300					
100	107	8 × 7	0.12	320	36	1500	8 × 7	0.12	400	42	1400
150	157	8 × 7	0.12	480	34	1700	8 × 10 (10 × 8)	0.12 (0.12)	600 (600)	28 (33)	2000 (1900)
180	187						10 × 8	0.12	720	25	3100
220	227	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	277	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	337	10 × 10	0.12	1056	26	2400	10 × 10 (10 × 12.7)	0.12 (0.12)	1320 (1320)	22 (26)	3800 (2700)
390	397	8 × 12	0.12	1248	20	4100					
470	477	10 × 10 (8 × 12)	0.12 (0.12)	1504 (1504)	21 (25)	3900 (2800)	10 × 12.7	0.12	1880	20	4300
680	687	10 × 12.7	0.12	2176	19	4400					

WV (V) Cap. Parameter (μF)		25					35				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
18	186						6.3 × 6	0.12	126	64	900
22	226						6.3 × 6	0.12	154	50	1300
27	276						8 × 7	0.12	189	55	1200
33	336	6.3 × 6	0.12	165	60	1000					
39	396						8 × 7	0.12	273	52	1400
47	476	6.3 × 6	0.12	235	49	1300					
56	566	8 × 7	0.12	280	50	1300	6.3 × 6.5 (8 × 10)	0.12 (0.12)	392 (392)	49 (31)	1600 (1900)
68	686						10 × 8	0.12	476	37	1800
82	826	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	107	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	127	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	157	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	187	10 × 10	0.12	900	28	2300	10 × 12.7	0.12	1260	22	4100
220	227	8 × 12	0.12	1100	22	3800					
270	277	10 × 10 (10 × 12.7)	0.12 (0.12)	1350 (1350)	23 (27)	3700 (2700)					
390	397	10 × 12.7	0.12	1950	21	4200					
470	477	10 × 13	0.12	2350	9	6100					

TMV Series

DIMENSIONS & STANDARD RATINGS

WV (V)		50					63				
Cap. (μ F)	Parameter	Case size \varnothing D \times L (mm)	Dissipation factor (tan δ)	Leakage current (μ A)	ESR (m Ω) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size \varnothing D \times L (mm)	Dissipation factor (tan δ)	Leakage current (μ A)	ESR (m Ω) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
5.6	565						6.3 \times 6	0.12	71	105	700
8.2	825	6.3 \times 6	0.12	82	81	800	6.3 \times 6	0.12	103	56	1200
10	106						8 \times 7	0.12	126	75	1000
12	126	6.3 \times 6	0.12	120	55	1200	8 \times 7	0.12	151	70	1100
15	156	8 \times 7	0.12	150	63	1100					
22	226	8 \times 7	0.12	220	60	1300	8 \times 10 (10 \times 8)	0.12 (0.12)	277 (277)	37 (56)	1700 (1400)
27	276						8 \times 10 (8 \times 12) (10 \times 8)	0.12 (0.12) (0.12)	340 (340) (340)	30 (35) (38)	3200 (2000) (2500)
33	336	8 \times 10 (10 \times 8)	0.12 (0.12)	330 (330)	36 (49)	1700 (1500)	10 \times 10	0.12	416	31	2200
39	396	8 \times 12	0.12	390	34	2000	8 \times 12	0.12	491	29	3400
47	476	8 \times 10 (10 \times 8)	0.12 (0.12)	470 (470)	29 (37)	3300 (2600)	10 \times 10 (10 \times 12.7)	0.12 (0.12)	592 (592)	30 (30)	3300 (2500)
56	566	8 \times 12	0.12	560	28	3400	10 \times 12.7	0.12	706	28	3400
68	686	10 \times 10 (10 \times 12.7)	0.12 (0.12)	680 (680)	29 (29)	3400 (2600)					
100	107	10 \times 12.7	0.12	1000	27	3600					

WV (V)		80					100				
Cap. (μ F)	Parameter	Case size \varnothing D \times L (mm)	Dissipation factor (tan δ)	Leakage current (μ A)	ESR (m Ω) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size \varnothing D \times L (mm)	Dissipation factor (tan δ)	Leakage current (μ A)	ESR (m Ω) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
6.8	685						8 \times 10	0.12	136	48	1500
10	106	8 \times 10	0.12	160	43	1600	8 \times 12	0.12	200	45	1700
12	126	8 \times 12	0.12	192	41	1800	10 \times 10	0.12	240	42	1900
15	156	10 \times 10	0.12	240	39	1900					
18	186						10 \times 12.7	0.12	360	41	2100
22	226	10 \times 12.7	0.12	352	38	2200					

WV (V)		125				
Cap. (μ F)	Parameter	Case size \varnothing D \times L (mm)	Dissipation factor (tan δ)	Leakage current (μ A)	ESR (m Ω) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
6.8	685	8 \times 10	0.12	170	93	1100
8.2	825	8 \times 12	0.12	205	84	1300
12	126	10 \times 10	0.12	300	69	1400
15	156	10 \times 12.7	0.12	375	48	2000