

MV Chip type, High Voltage / Long Life Series

- High voltage (to 125V), Low ESR, High ripple current.
- Load life of 3000 hours at 105°C.
- SMD type: Lead free reflow soldering condition at 260°C peak correspondence.
- RoHS Compliance(2011/65/EU)



SPECIFICATIONS

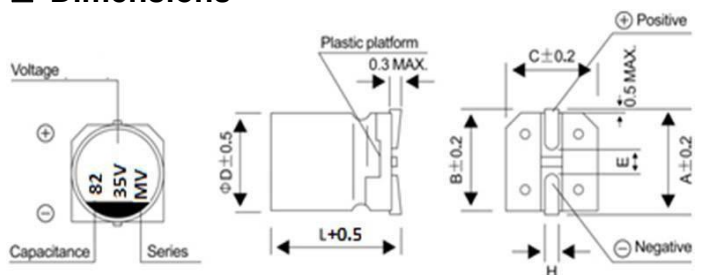
Items	Performance Characteristics		
Category Temperature Range	-55 ~ +105℃		
Rated Voltage Range	16~ 125V		
Rated Capacitance Range	5.6 ~ 680μF		
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)		
Tangent of Loss Angle (tan δ)	Less than or equal to the specified value at 120Hz, 20℃		
ESR(※1)	Less than or equal to the specified value at 100KHz, 20℃		
Leakage Current(※2)	Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20℃		
Temperature Characteristics (Max. Impedance Ratio)	Z+105℃ / Z+20℃ ≤1.25 (100kHz) Z- 55℃ / Z+20℃ ≤1.25		
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20 ℃ after the rated voltage is applied for 3000 hours at 105 ℃	Capacitance change	Within ±20% of the initial capacitance value(※3)
		tan δ	150% or less than the initial specified value
		ESR(※1)	150% or less than the initial specified value
		Leakage current(※2)	Less than or equal to the initial specified value
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20 ℃ after the rated voltage is applied for 1000 hours at 60 ℃, 90% RH.	Capacitance change	Within ±20% of the initial capacitance value(※3)
		tan δ	150% or less than the initial specified value
		ESR(※1)	150% or less than the initial specified value
		Leakage current(※2)	Less than or equal to the initial specified value
Resistance to Soldering Heat	After soldering the capacitor shall meet the specifications listed at right. Pre-heating shall be done at 150 to 200 ℃ and for 60 to 180 sec. The duration for over +230 ℃ at capacitor surface shall not exceed 60 seconds. In case peak temperature is 250 ℃ or less, reflow soldering shall be two times maximum. In case peak temperature is 260 ℃ or less, reflow soldering shall be once. Measurement for solder temperature profiles shall be made at the capacitor top and the terminal.	Capacitance change	Within ±10% of the initial capacitance value(※3)
		tan δ	130% or less than the initial specified value
		ESR(※1)	130% or less than the initial specified value
		Leakage current(※2)	Less than or equal to the initial specified value
Marking	Red print on the case top		

※1 ESR should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform

※2 Conditioning: 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

※3 Initial value: The value before test of examination of resistance to soldering.

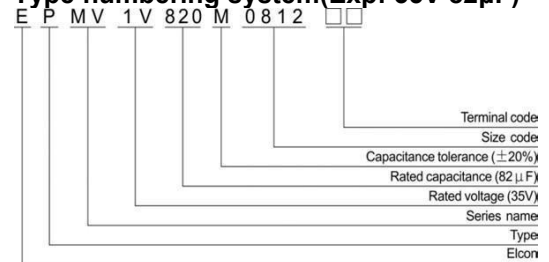
Dimensions



Φ x L(mm)

Size	6.3x6/9	8x7	8x9/10	8x12	10x8	10x10	10x12.7
ΦD	6.3	8.0	8.0	8.0	10.0	10.0	10.0
L	6/9	7	9/10	12	8	10	12.7
A	7.3	9.0	9.0	9.0	11.0	11.0	11.0
B	6.6	8.3	8.3	8.3	10.3	10.3	10.3
C	6.6	8.3	8.3	8.3	10.3	10.3	10.3
E	2.1	3.2	3.2	3.2	4.6	4.6	4.6
H	0.5-0.8	0.8-1.1	0.8-1.1	0.8-1.1	0.8-1.1	0.8-1.1	0.8-1.1

Type numbering system(Exp: 35V 82μF)



Voltage

V	16	20	25	35	50	63	80	100	125
Code	1C	1D	1E	1V	1H	1J	1K	2A	2B

MV Series

■ STANDARD RATINGS

Rated voltage (V)(code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size ΦD x L(mm)	tan δ	Leakage Current (μA)	ESR(mΩ) (at 100kHz 20℃)	Rated Ripple (mArms)	Part Number
20 (1D)	23	47	6.3x6	0.12	94	55	1000	EPMV1D470M6306TR
		56	6.3x6	0.12	112	48	1300	EPMV1D560M6306TR
		68	8x7	0.12	136	45	1300	EPMV1D680M0807TR
		100	8x7	0.12	200	42	1400	EPMV1D101M0807TR
		150	8x10	0.12	300	28	2000	EPMV1D151M0810TR
		150	10x8	0.12	300	33	1900	EPMV1D151M1008TR
		180	10x8	0.12	360	25	3100	EPMV1D181M1008TR
		220	8x10	0.12	440	22	3700	EPMV1D221M0810TR
		220	8x12	0.12	440	27	2300	EPMV1D221M0812TR
		270	8x12	0.12	540	21	4000	EPMV1D271M0812TR
		270	10x10	0.12	540	27	2300	EPMV1D271M1010TR
		330	10x10	0.12	660	22	3800	EPMV1D331M1010TR
25 (1E)	28.7	330	10x12.7	0.12	660	26	2700	EPMV1D331M1012TR
		470	10x12.7	0.12	940	20	4300	EPMV1D471M1012TR
		33	6.3x6	0.12	83	60	1000	EPMV1E330M6306TR
		47	6.3x6	0.12	118	49	1300	EPMV1E470M6306TR
		56	8x7	0.12	140	50	1300	EPMV1E560M0807TR
		82	8x7	0.12	205	47	1400	EPMV1E820M0807TR
		100	6.3x6	0.12	250	35	1400	EPMV1E101M6306TR
		100	6.3x6.5	0.12	250	35	1400	EPMV1E101M6365TR
		100	6.3x7	0.12	250	35	1400	EPMV1E101M6307TR
		100	8x9	0.12	250	29	1900	EPMV1E101M0809TR
		120	8x9	0.12	300	29	1900	EPMV1E121M0809TR
		120	8x10	0.12	300	29	1900	EPMV1E121M0810TR
		120	10x8	0.12	300	35	1800	EPMV1E121M1008TR
		150	8x10	0.12	375	23	3600	EPMV1E151M0810TR
		150	8x12	0.12	375	28	2200	EPMV1E151M0812TR
		150	10x8	0.12	375	26	3000	EPMV1E151M1008TR
		180	10x10	0.12	450	28	2300	EPMV1E181M1010TR
		220	8x9	0.12	550	22	3800	EPMV1E221M0809TR
		220	8x12	0.12	550	22	3800	EPMV1E221M0812TR
		270	10x10	0.12	675	23	3700	EPMV1E271M1010TR
		270	10x12.7	0.12	675	27	2700	EPMV1E271M1012TR
		330	8x12	0.12	825	26	4800	EPMV1E331M0812TR
		330	10x10.5	0.12	825	25	5000	EPMV1E331M1010TR
		330	10x12.5	0.12	825	25	5000	EPMV1E331M1012TR
		390	10x12.7	0.12	975	21	4200	EPMV1E391M1012TR
		470	8x12	0.12	1175	20	4100	EPMV1E471M0812TR
		470	10x13	0.12	1175	9	6100	EPMV1E471M1013TR
		680	10x12.5	0.12	1700	16	5600	EPMV1E681M1012TR
30(1U)		330	10x12.5	0.12	990	11	3850	EPMV1U331M1012TR
35 (1V)	40.2	18	6.3x6	0.12	63	64	900	EPMV1V180M6306TR
		22	6.3x6	0.12	77	50	1300	EPMV1V220M6306TR
		22	6.3x9	0.12	77	52	1200	EPMV1V220M6309TR
		27	8x7	0.12	95	55	1200	EPMV1V270M0807TR
		39	8x7	0.12	137	52	1400	EPMV1V390M0807TR
		47	6.3x6.5	0.12	165	50	1500	EPMV1V470M6365TR
		47	6.3x9	0.12	165	49	1600	EPMV1V470M6309TR
		56	6.3x6.5	0.12	196	49	1600	EPMV1V560M6365TR
		56	8x10	0.12	196	31	1900	EPMV1V560M0810TR
		100	6.3x7.7	0.12	350	35	1450	EPMV1V101M6377TR
		100	6.3x8.7	0.12	350	35	1450	EPMV1V101M6387TR
		100	6.3x9	0.12	350	35	1450	EPMV1V101M6309TR
		100	6.3x12	0.12	350	29	2800	EPMV1V101M6312TR
		100	8x9	0.12	350	27	3600	EPMV1V101M0809TR
		150	8x9	0.12	525	23	2400	EPMV1V151M0809TR

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Rated voltage (V)(code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size ΦD x L(mm)	tan δ	Leakage Current (μA)	ESR(mΩ) (at 100kHz 20℃)	Rated Ripple (mArms)	Part Number
35 (1V)	40.2	68	10x8	0.12	238	37	1800	EPMV1V680M1008TR
		82	8x10	0.12	287	24	3600	EPMV1V820M0810TR
		82	8x12	0.12	287	29	2200	EPMV1V820M0812TR
		82	10x8	0.12	287	27	3000	EPMV1V820M1008TR
		100	10x10	0.12	350	29	2200	EPMV1V101M1010TR
		120	8x12	0.12	420	23	3800	EPMV1V121M0812TR
		120	10x10	0.12	420	24	3700	EPMV1V121M1010TR
		150	10x12.7	0.12	525	28	2600	EPMV1V151M1012TR
50 (1H)	57.5	180	10x12.7	0.12	630	22	4100	EPMV1V181M1012TR
		8.2	6.3x6	0.12	41	81	800	EPMV1H8R2M6306TR
		12	6.3x6	0.12	60	55	1200	EPMV1H120M6306TR
		15	8x7	0.12	75	63	1100	EPMV1H150M0807TR
		22	8x7	0.12	110	60	1300	EPMV1H220M0807TR
		33	8x10	0.12	165	36	1700	EPMV1H330M0810TR
		33	10x8	0.12	165	49	1500	EPMV1H330M1008TR
		39	8x12	0.12	195	34	2000	EPMV1H390M0812TR
		47	8x10	0.12	235	29	3300	EPMV1H470M0810TR
		47	10x8	0.12	235	37	2600	EPMV1H470M1008TR
		47	10x10	0.12	235	30	2200	EPMV1H470M1010TR
		56	8x12	0.12	280	28	3400	EPMV1H560M0812TR
		68	10x10	0.12	340	29	3400	EPMV1H680M1010TR
		68	10x12.7	0.12	340	29	2600	EPMV1H680M1012TR
63 (1J)	72.4	100	10x12.7	0.12	500	27	3600	EPMV1H101M1012TR
		5.6	6.3x6	0.12	38	105	700	EPMV1J5R6M6306TR
		8.2	6.3x6	0.12	52	56	1200	EPMV1J8R2M6306TR
		10	8x7	0.12	63	75	1000	EPMV1J100M0807TR
		12	8x7	0.12	75	70	1100	EPMV1J120M0807TR
		22	8x10	0.12	139	37	1700	EPMV1J220M0810TR
		22	10x8	0.12	139	56	1400	EPMV1J220M1008TR
		27	8x10	0.12	170	30	3200	EPMV1J270M0810TR
		27	8x12	0.12	170	35	2000	EPMV1J270M0812TR
		27	10x8	0.12	170	38	2500	EPMV1J270M1008TR
		33	10x10	0.12	208	31	2200	EPMV1J330M1010TR
		39	8x12	0.12	245	29	3400	EPMV1J390M0812TR
		47	10x10	0.12	296	30	3300	EPMV1J470M1010TR
		47	10x12.7	0.12	296	30	2500	EPMV1J470M1012TR
80 (1K)	92	56	10x12.7	0.12	353	28	3400	EPMV1J560M1012TR
		10	8x10	0.12	80	43	1600	EPMV1K100M0810TR
		12	8x12	0.12	96	41	1800	EPMV1K120M0812TR
		15	10x10	0.12	120	39	1900	EPMV1K150M1010TR
100 (2A)	115	22	10x12.7	0.12	176	38	2200	EPMV1K220M1012TR
		6.8	8x10	0.12	68	48	1500	EPMV2A6R8M0810TR
		10	8x12	0.12	100	45	1700	EPMV2A100M0812TR
		12	10x10	0.12	120	42	1900	EPMV2A120M1010TR
125 (2B)	143	18	10x12.7	0.12	180	41	2100	EPMV2A180M1012TR
		6.8	8x10	0.12	85	93	1100	EPMV2B6R8M0810TR
		8.2	8x12	0.12	102	84	1300	EPMV2B8R2M0812TR
		12	10x10	0.12	150	69	1400	EPMV2B120M1010TR
		15	10x12.7	0.12	188	48	2000	EPMV2B150M1012TR