ELCON

Conductive Polymer Aluminum Solid Electrolytic Capacitors

MR

Chip type,High Voltage/Long Life Series

- High reliability, High voltage(to 50V).
- Low ESR, High ripple current.
- Long life of 1500 to 3000 hours at 125℃.
- SMD type: Lead free reflow soldering condition at 260℃ peak correspondence.
- RoHS Compliance(2011/65/EU)

■SPECIFICATIONS

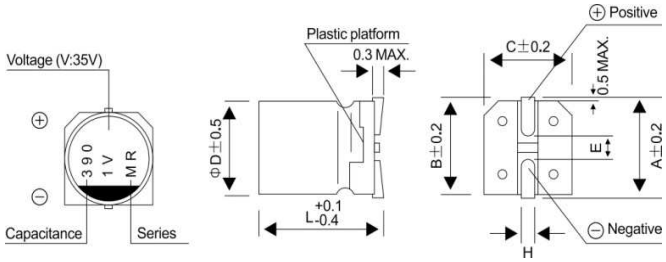
Item	Performance Characteristics		
Category Temperature Range	-55 ~ +125℃		
Rated Voltage Range	16~ 50V		
Rated Capacitance Range	5.6 to 390μF		
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)		
Tangent of loss angle (tan δ)	Less than or equal to the specified value at 120Hz, 20℃		
ESR(※1)	Less than or 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(ΦD=6.3:1500hours) at 125 ℃	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 specifcations 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 terperature is 250 ℃ or less, reflow soldering shall be two times maximum. In case peak termperature is 260 ℃ or less, reflow soldering shall be once. Meraurement 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 minuters at 105 ℃

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

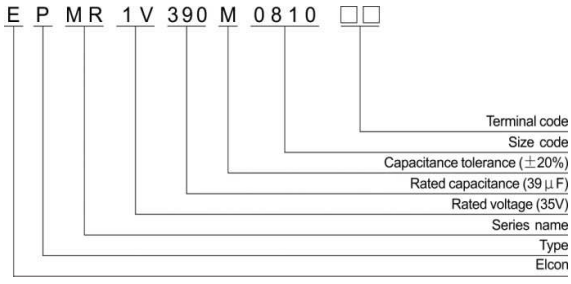
■ Dimensions



Φ x L(mm)

Size	6.3x6	6.3x8	8x7	8x10	8x12	10x8	10x10	10x12.7
ΦD	6.3	6.3	8.0	8.0	8.0	10.0	10.0	10.0
L	5.9	7.9	6.9	9.9	11.9	7.9	9.9	12.6
A	7.3	7.3	9.0	9.0	9.0	11.0	11.0	11.0
B	6.6	6.6	8.3	8.3	8.3	10.3	10.3	10.3
C	6.6	6.6	8.3	8.3	8.3	10.3	10.3	10.3
E	2.1	2.1	3.2	3.2	3.2	4.6	4.6	4.6
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	0.8-1.1

Type numbering system(Exp:35V 39μF)



Voltage

V	16	20	25	35	50
Code	1C	1D	1E	1V	1H

MR Series

■STANDARD RATINGS

Rated voltage (V)(code)	Surge Voltage (V)	Rated Cpacitance (μF)	Case Size ΦD x L(mm)	tan δ	Leakage Current (μA)	ESR(mΩ) (at 100kHz 20℃)	Rated Ripple(mArms)		Part Number
							≤105℃(*3)	105℃≤125℃(*3)	
16 (1C)	18.4	47	6.3 x 6	0.12	150	55	1000	390	EPMR1C470M6306TR
		82	8x 7	0.12	262	45	1300	530	EPMR1C820M0807TR
		82	8 x 7.5	0.12	262	45	1300	530	EPMR1C820M0875TR
		100	6.3 x 8	0.12	320	33	1500	460	EPMR1C101M6308TR
		100	6.3 x 8	0.12	320	33	1500	460	EPMR1C101M6308TR
		150	8 x 10	0.12	480	28	2000	780	EPMR1C151M0810TR
		150	8 x 10.5	0.12	480	28	2000	780	EPMR1C151M0810TR
		150	10 x 8	0.12	480	33	1900	830	EPMR1C151M1008TR
		220	8x 12	0.12	704	27	2300	870	EPMR1C221M0812TR
		270	10x 10	0.12	864	27	2300	830	EPMR1C271M1010TR
		270	10x 10.5	0.12	864	27	2300	830	EPMR1C271M1010TR
		390	10x 12.7	0.12	1248	26	2700	1040	EPMR1C391M1012TR
20 (1D)	23	33	6.3 x 6	0.12	132	60	900	380	EPMR1D330M6306TR
		56	8x 7	0.12	224	50	1300	500	EPMR1D560M0807TR
		56	8x 7.5	0.12	224	50	1300	500	EPMR1D560M0875TR
		68	6.3 x 8	0.12	272	34	1450	470	EPMR1D680M6308TR
		68	6.3 x 8	0.12	272	34	1450	470	EPMR1D680M6308TR
		120	8 x 10	0.12	480	29	1900	770	EPMR1D121M0810TR
		120	8 x 10.5	0.12	480	29	1900	770	EPMR1D121M0810TR
		120	10 x 8	0.12	480	35	1800	810	EPMR1D121M1008TR
		150	8 x 12	0.12	600	28	2200	860	EPMR1D151M0812TR
		180	10x 10	0.12	720	28	2300	800	EPMR1D181M1010TR
		180	10 x 10.5	0.12	720	28	2300	800	EPMR1D181M1010TR
		270	10 x 12.7	0.12	1080	27	2700	1020	EPMR1D271M1012TR
25 (1E)	28.7	22	6.3x 6	0.12	110	65	900	360	EPMR1E220M6306TR
		39	8 x 7	0.12	195	55	1200	480	EPMR1E390M0807TR
		39	8 x 7.5	0.12	195	55	1200	480	EPMR1E390M0875TR
		56	6.3 x 8	0.12	280	35	1400	450	EPMR1E560M6308TR
		56	6.3 x 8	0.12	280	35	1400	450	EPMR1E560M6308TR
		82	8 x 10	0.12	410	30	1900	760	EPMR1E820M0810TR
		82	8 x 10.5	0.12	410	30	1900	760	EPMR1E820M0810TR
		82	10 x 8	0.12	410	36	1800	800	EPMR1E820M1008TR
		120	8 x12	0.12	600	29	2200	850	EPMR1E121M0812TR
		120	10x 10	0.12	600	29	2200	790	EPMR1E121M1010TR
		120	10x 10.5	0.12	600	29	2200	790	EPMR1E121M1010TR
		180	10 x 12.7	0.12	900	28	2600	1010	EPMR1E181M1012TR
35 (1V)	40.2	10	6.3x 6	0.12	70	85	800	310	EPMR1V100M6306TR
		18	8 x 7	0.12	126	60	1100	450	EPMR1V180M0807TR
		18	8 x 7.5	0.12	126	60	1100	450	EPMR1V180M0875TR
		27	6.3x 8	0.12	189	45	1300	450	EPMR1V270M6308TR
		27	6.3x 8	0.12	189	45	1300	450	EPMR1V270M6308TR
		39	8x 10	0.12	273	35	1800	700	EPMR1V390M0810TR
		39	8x 10.5	0.12	273	35	1800	700	EPMR1V390M0810TR
		39	10x 8	0.12	273	41	1700	750	EPMR1V390M1008TR
		56	8 x 12	0.12	392	33	2000	780	EPMR1V560M0812TR
		68	10 x 10	0.12	476	30	2200	740	EPMR1V680M1010TR
		68	10 x 10.5	0.12	476	30	2200	740	EPMR1V680M1010TR
		100	10 x10.5	0.12	700	25	2400	800	EPMR1V101M1010TR
		100	10x 12.7	0.12	700	29	2600	990	EPMR1V101M1012TR
50 (1H)	57.5	5.6	6.3x 6	0.12	56	105	700	280	EPMR1H5R6M6306TR
		10	8x 7	0.12	100	75	1000	410	EPMR1H100M0807TR
		10	8x 7.5	0.12	100	75	1000	410	EPMR1H100M0875TR
		12	6.3x 8	0.12	120	65	1100	380	EPMR1H120M6308TR
		12	6.3x 8	0.12	120	65	1100	380	EPMR1H120M6308TR

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							≤105℃(*3)	105℃≤125℃(*3)	
50 (1H)	57.5	22	8x 10	0.12	220	37	1700	680	EPMR1H220M0810TR
		22	8x 10.5	0.12	220	37	1700	680	EPMR1H220M0810TR
		22	10x 8	0.12	220	56	1400	730	EPMR1H220M1008TR
		27	8x 12	0.12	270	35	2000	760	EPMR1H270M0812TR
		33	10x 10	0.12	330	31	2200	630	EPMR1H330M1010TR
		33	10x 10.5	0.12	330	31	2200	630	EPMR1H330M1010TR
		47	10x 12.7	0.12	470	30	2500	970	EPMR1H470M1012TR