

ALUMINUM ELECTROLYTIC CAPACITORS

MA series 5mmL, Standard, For General Purposes



Anti-Solvent Feature

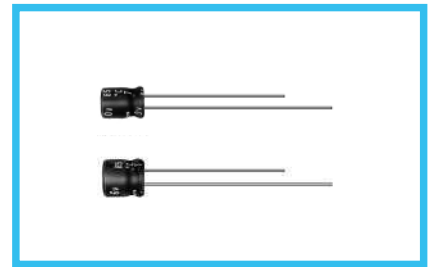
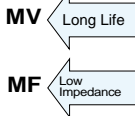
MT



High Temperature

MA

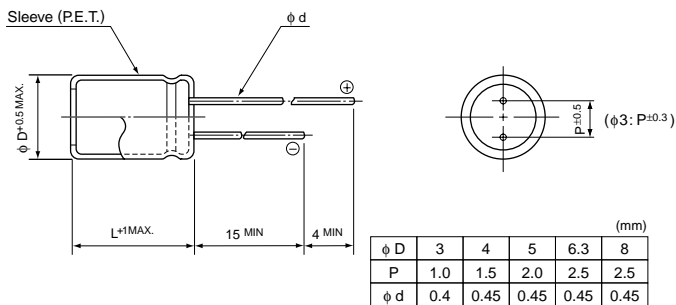
Bi-polarized → **MP**



Specifications

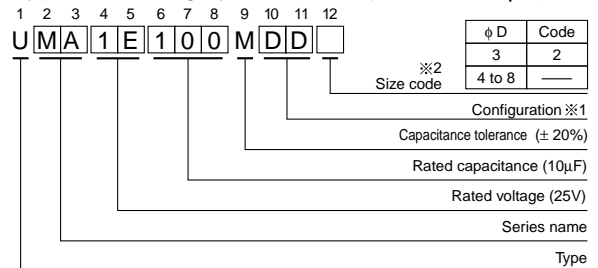
Item	Performance Characteristics									
Category Temperature Range	-40 to +85°C									
Rated Voltage Range	4 to 50V									
Rated Capacitance Range	0.1 to 470μF									
Rated Capacitance Tolerance	±20% at 120Hz, 20°C									
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3(μA), whichever is greater.									
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C								Figures in () are for MR series.	
	Rated voltage (V)	4	6.3	10	16	25	35	50		
Stability at Low Temperature	Measurement frequency : 120Hz									
	Rated voltage (V)		4	6.3	10	16	25	35		50
	Impedance ratio	Z-25°C / Z+20°C	7	4	3	2	2	2		2
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.									
	Capacitance change	Within ±20% of the initial capacitance value (MR series & φ 3 product : Within ±25%)								
	tan δ	200% or less than the initial specified value								
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.									
	Leakage current	Less than or equal to the initial specified value								
Marking	Printed with white color letter on black sleeve.									

Radial Lead Type



• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 10μF)



φ D	Pb-free leadwire Pb-free PET sleeve
3	CD
4 to 8	DD

※ 2 In case at φ 3 units, put [2] as size code.

Dimensions

Cap. (μF)	Code	4		6.3		10		16		25		35		50	
		0G		0J		1A		1C		1E		1V		1H	
0.1	0R1													4×5(3×5)	1.0(1.0)
0.22	R22													4×5(3×5)	2.0(2.0)
0.33	R33													4×5(3×5)	2.8(2.8)
0.47	R47													4×5(3×5)	4.0(4.0)
1	010													4×5(3×5)	8.4(8.0)
2.2	2R2											3×5	8.4	• 4×5	13(10)
3.3	3R3										3×5	10	• 4×5	15(10)	4×5
4.7	4R7										3×5	10	• 4×5	16(12)	4×5
10	100			3×5	15			• 4×5	23(18)	5×5	27	5×5	29	6.3×5	33
22	220	3×5	19	• 4×5	28(21)	5×5	33	• 5×5	37	6.3×5	42	6.3×5	46	□ 8×5	52(48)
33	330	4×5	28	5×5	37	5×5	41	○ 6.3×5	49(43)	6.3×5	52	□ 8×5	62(52)	8×5	71
47	470	4×5	33	5×5	45	○ 6.3×5	52(43)	6.3×5	58	□ 8×5	70(62)	8×5	80		
100	101	5×5	56	○ 6.3×5	70(68)	□ 8×5	80(76)	□ 8×5	92(86)	8×5	110				
220	221	6.3×5	96	□ 8×5	110(90)	8×5	135								
330	331	8×5	145	8×5	170										
470	471	8×5	185												

Size φ 3 × 5 is available for capacitors marked. "•"/ Size φ 5 × 5 is available for capacitors marked. "○"
Size φ 6.3 × 5 is available for capacitors marked. "□" In such a case, [M][R] will be put at 2nd and 3rd digit of type numbering system.

Rated ripple current (mArms) at 85°C 120Hz
() = φ 3 units and MR series.

Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.