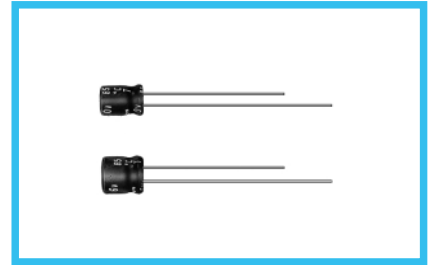
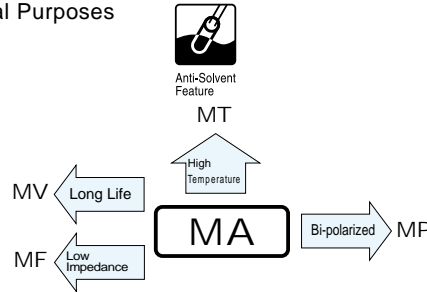


MA series

5mmL, Standard, For General Purposes

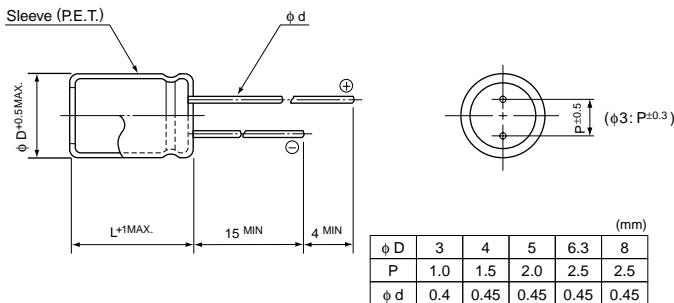
- Standard series with 5mm height.
- Compliant to the RoHS directive (2011/65/EU).



Specifications

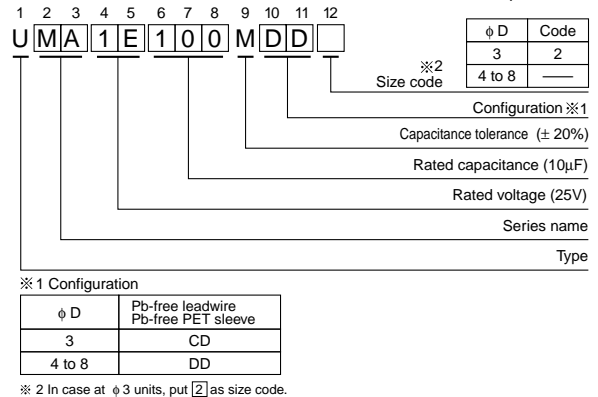
Item	Performance Characteristics																	
Category Temperature Range	-40 to +85°C																	
Rated Voltage Range	4 to 50V																	
Rated Capacitance Range	0.1 to 470μF																	
Rated Capacitance Tolerance	±20% at 120Hz, 20°C																	
Leakage Current	After 2 minutes' 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																	
	Rated voltage (V)	4	6.3	10	16	25	35	50	Figures in () are for MR series.									
	tan δ (MAX.)	0.35	0.24 (0.30)	0.20 (0.24)	0.16 (0.20)	0.14 (0.18)	0.12 (0.16)	0.10 (0.13)										
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									
	ZT / Z20 (MAX.)	Z-40°C / Z+20°C	15	8	6	4	4	3	3									
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 & φ3 product : Within ±25%)							
										tan δ	200% or less than the initial specified value							
	Leakage current	Less than or equal to 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.																	
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)



Dimensions

Cap.(μF) \ V	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	17
4.7	4R7							3×5	10	• 4×5	16(12)	4×5	18	5×5	20
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									Case size φD×L (mm)	Rated ripple
470	471	8×5	185												