

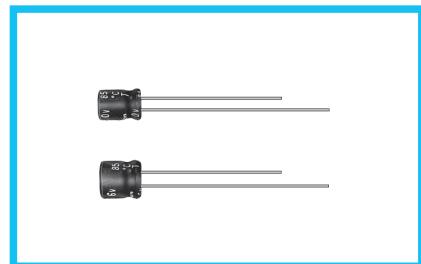
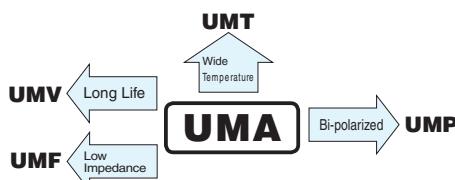
UMA

5mmL, Standard, For General Purposes



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

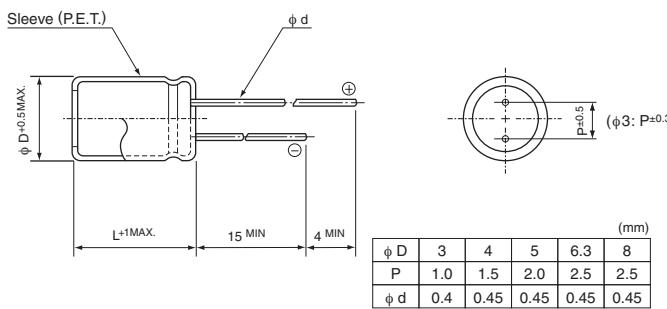
Values marked with an \ast in the dimension table are scheduled to be discontinued and are not recommended for new designs.



Specifications

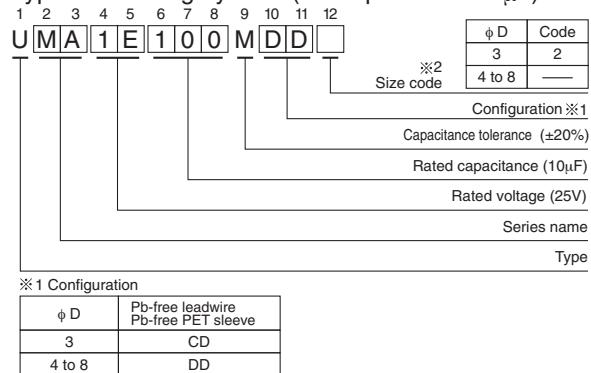
Item	Performance Characteristics																															
Category Temperature Range	-40 to +85°C																															
Rated Voltage Range	4 to 50V																															
Rated Capacitance Range	0.1 to 470μF																															
Rated Capacitance Tolerance	±20% at 120Hz, 20°C																															
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3(μA), whichever is greater.																															
Tangent of loss angle (tan δ)	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>tan δ (MAX.)</td> <td>0.35</td> <td>0.24 (0.30)</td> <td>0.20 (0.24)</td> <td>0.16 (0.20)</td> <td>0.14 (0.18)</td> <td>0.12 (0.16)</td> <td>0.10 (0.13)</td> </tr> </tbody> </table>								Rated voltage (V)	4	6.3	10	16	25	35	50	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)								
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Stability at Low Temperature	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>Impedance ratio Z-25°C / Z+20°C</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ZT / Z20 (MAX.) Z-40°C / Z+20°C</td> <td>15</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </tbody> </table>								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
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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 (UMR & $\phi 3$ 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)



$\ast 1$ Configuration

$\ast 2$ In case at $\phi 3$ units, put \square as size code.

■ Dimensions

Cap.(μF) \ V	4		6.3		10		16		25		35		50	
	Code	0G	0J	1A	1C	1E	1V	1H						
0.1	0R1													$\ast 4 \times 5(3 \times 5)$ 1.0(1.0)
0.22	R22													$\ast 4 \times 5(3 \times 5)$ 2.0(2.0)
0.33	R33													$\ast 4 \times 5(3 \times 5)$ 2.8(2.8)
0.47	R47													$\ast 4 \times 5(3 \times 5)$ 4.0(4.0)
1	010													$4 \times 5(3 \times 5)$ 8.4(8.0)
2.2	2R2													3x5 8.4 • 4x5 13(10)
3.3	3R3													4x5 17
4.7	4R7								3x5 10	• 4x5 16(12)	4x5 18	5x5 20		
10	100		3x5 15			• 4x5 23(18)	5x5 27				5x5 29	6.3x5 33		
22	220	3x5 19	• 4x5 28(21)	5x5 33	5x5 37	6.3x5 42	6.3x5 46		8x5 52	8x5 62(52)	8x5 71			$\square 8x5$ 52(48)
33	330	4x5 28	5x5 37	5x5 41	○ 6.3x5 49(43)	6.3x5 52	6.3x5 52							
47	470	4x5 33	5x5 45	○ 6.3x5 52(43)	6.3x5 58	6.3x5 70(62)	6.3x5 80							
100	101	5x5 56	○ 6.3x5 70(68)	□ 8x5 80(76)	□ 8x5 92(86)	8x5 110								
220	221	6.3x5 96	□ 8x5 110(90)	8x5 135										
330	331	8x5 145	8x5 170											
470	471	8x5 185												Case size $\phi D \times L$ (mm)
														Rated ripple

Size $\phi 3 \times 5$ is available for capacitors marked "•". Size $\phi 5 \times 5$ is available for capacitors marked "○".

Size $\phi 6.3 \times 5$ is available for capacitors marked "□". In such a case, \square will be put at 2nd and 3rd digit of type numbering system.

Rated ripple current (mA rms) at 85°C 120Hz

() = $\phi 3$ units and UMR.

● 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.