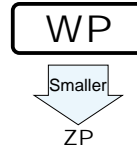


# ALUMINUM ELECTROLYTIC CAPACITORS

**WP** series 5.5mmL Chip Type, Bi-Polarized

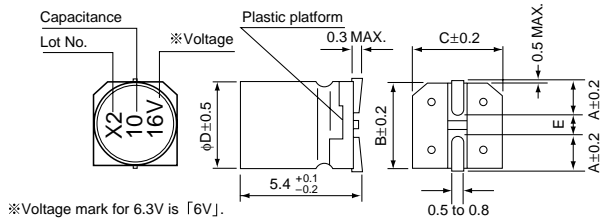


- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).

## Specifications

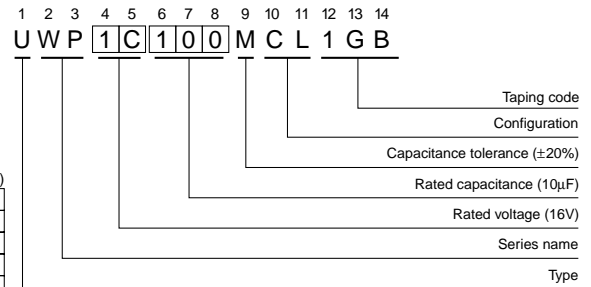
Item	Performance Characteristics																						
Category Temperature Range	-40 to +85°C																						
Rated Voltage Range	6.3 to 50V																						
Rated Capacitance Range	0.1 to 100μF																						
Capacitance Tolerance	±20% at 120Hz, 20°C																						
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.05CV or 10 (μA), whichever is greater.																						
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz, Temperature : 20°C																						
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.24</td> <td>0.20</td> <td>0.17</td> <td>0.17</td> <td>0.15</td> <td>0.15</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	tan δ (MAX.)	0.24	0.20	0.17	0.17	0.15	0.15								
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Stability at Low Temperature	Measurement frequency : 120Hz																						
	<table border="1"> <tr> <td colspan="2">Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td rowspan="2">Impedance ratio ZT / Z20 (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	Rated voltage (V)		6.3	10	16	25	35	50	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	4	3	2	2	2	2	Z-40°C / Z+20°C	8	6	4	4	3
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Endurance	<p>The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C with the polarity inverted every 250 hours.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>200% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	Capacitance change	Within ±20% of the initial capacitance value	tan δ	200% or less than the initial specified value	Leakage current	Less than or equal to the initial specified value																
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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.																						
Resistance to soldering heat	<p>The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±10% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>Less than or equal to the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	Capacitance change	Within ±10% of the initial capacitance value	tan δ	Less than or equal to the initial specified value	Leakage current	Less than or equal to the initial specified value																
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Marking	Black print on the case top.																						

## Chip Type



	∅	4	5	6.3	8
A	1.8	2.1	2.4	3.3	
B	4.3	5.3	6.6	8.3	
C	4.3	5.3	6.6	8.3	
E	1.0	1.3	2.2	2.3	

## Type numbering system (Example : 16V 10μF)



## Dimensions

Cap. (μF)	Code	V		6.3		10		16		25		35		50		
		0J	1A	1C	1E	1V	1H									
0.1	0R1													4	1.0	
0.22	R22													4	2.0	
0.33	R33													4	2.8	
0.47	R47													4	4.0	
1	010													4	8.4	
2.2	2R2												4	8.4	5	13
3.3	3R3									5	12	5	16	5	17	
4.7	4R7							4	12	5	16	5	18	6.3	20	
10	100			4	17	5	23	6.3	27	6.3	29	8	36			
22	220	5	28	6.3	33	6.3	37	8	50	8	54					
33	330	6.3	37	6.3	41	6.3	49	8	61							
47	470	6.3	45	8	61	8	75									
100	101	8	82													

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

## 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

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please select UN(p.104) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.