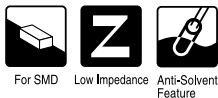


# ALUMINUM ELECTROLYTIC CAPACITORS

**WF** series Chip Type, Low Impedance



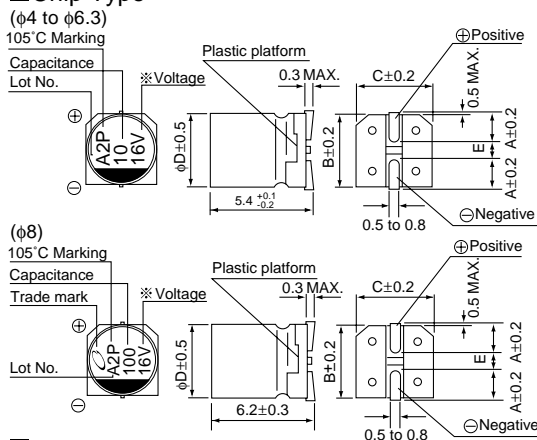
- Chip type, low impedance temperature range up to +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).



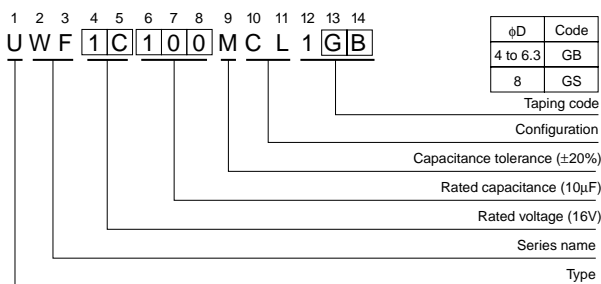
## Specifications

Item	Performance Characteristics																				
Category Temperature Range	-55 to +105°C																				
Rated Voltage Range	6.3 to 35V																				
Rated Capacitance Range	1 to 220μF																				
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																				
	<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> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12								
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Stability at Low Temperature	Measurement frequency : 120Hz																				
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ZT / Z20 (MAX.)	Z-55°C / Z+20°C	4	4	3	3	3															
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 105°C.</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 105°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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tan δ	Less than or equal to the initial specified value																				
Leakage current	Less than or equal to the initial specified value																				
Marking	Black print on the case top.																				

## Chip Type



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



## Dimensions

Cap. (μF)	Code	6.3			10			16			25			35			
		4	5	6.3	4	5	6.3	4	5	6.3	4	5	6.3	4	5	6.3	
1	010																
1.5	1R5																
2.2	2R2																
3.3	3R3																
4.7	4R7																
6.8	6R8																
10	100																
15	150																
22	220	4	5.0	50	5	2.6	80	5	2.6	80	6.3	1.3	115	6.3	1.3	115	
33	330	5	2.6	80	5	2.6	80	6.3	1.3	115	6.3	1.3	115	8	0.8	150	
47	470	5	2.6	80	6.3	1.3	115	6.3	1.3	115	8	0.8	150	8	0.8	150	
68	680	6.3	1.3	115	6.3	1.3	115	8	0.8	150	8	0.8	150				
100	101	6.3	1.3	115	8	0.8	150	8	0.8	150							
150	151	8	0.8	150	8	0.8	150										
220	221	8	0.8	150													

## Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please select UJ(p.116) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.