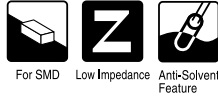


# ALUMINUM ELECTROLYTIC CAPACITORS



**WF** series Chip Type, Low Impedance



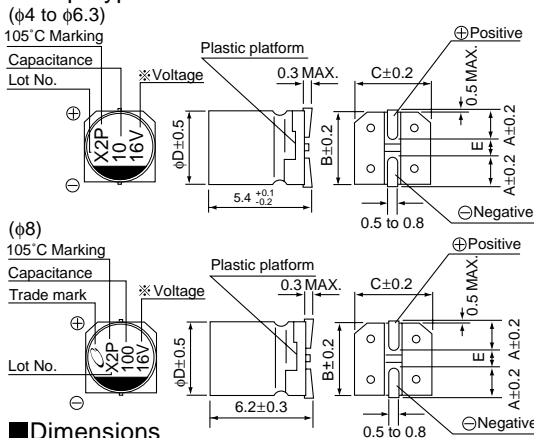
- Chip type, low impedance temperature range up to +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).



## 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, Temperature : 20°C																							
	Rated voltage (V)	6.3	10	16	25	35																		
Stability at Low Temperature	Measurement frequency : 120Hz																							
	Rated voltage (V)	6.3	10	16	25	35																		
Endurance	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.		<table border="1"> <tr> <td>Capacitance change</td> <td colspan="5">Within ±20% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td colspan="5">200% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td colspan="5">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				
	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																							
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.		<table border="1"> <tr> <td>Capacitance change</td> <td colspan="5">Within ±10% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td colspan="5">Less than or equal to the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td colspan="5">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				
	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																							
Resistance to soldering heat	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.		<table border="1"> <tr> <td>Capacitance change</td> <td colspan="5">Within ±10% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td colspan="5">Less than or equal to the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td colspan="5">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				
	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																							
Marking	Black print on the case top.																							

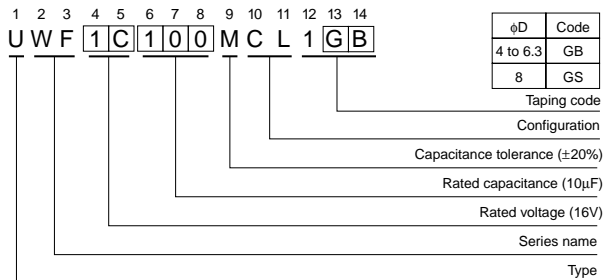
## Chip Type



	φD (mm)			
	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

※ Voltage mark for 6.3V is 6V.

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



## Dimensions

Cap. (μF)	V		6.3			10			16			25			35		
	Code		0J			1A			1C			1E			1V		
1	010														4	5.0	50
1.5	1R5														4	5.0	50
2.2	2R2														4	5.0	50
3.3	3R3														4	5.0	50
4.7	4R7													4	5.0	50	
6.8	6R8													4	5.0	50	
10	100								4	5.0	50			5	2.6	80	
15	150								5	2.6	80			6.3	1.3	115	
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.102) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.