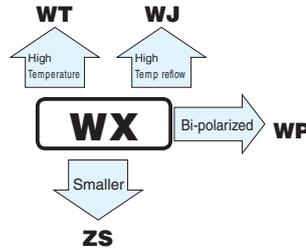


# ALUMINUM ELECTROLYTIC CAPACITORS

**WX** series 5.5mmL Chip Type



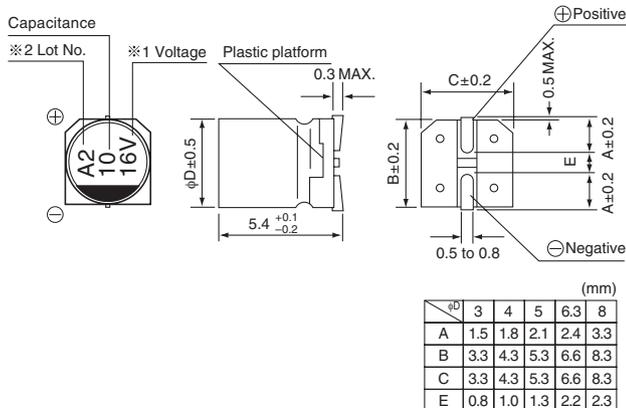
- Chip type with 5.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Load life of 2000 hours at 85°C.
- Compliant to the RoHS directive (2011/65/EU).



## Specifications

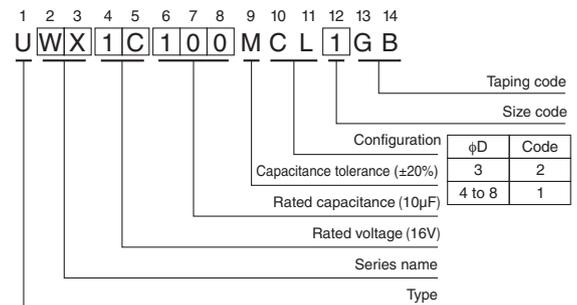
Item	Performance Characteristics																								
Category Temperature Range	-40 to +85°C																								
Rated Voltage Range	4 to 50V																								
Rated Capacitance Range	0.1 to 330μF																								
Capacitance Tolerance	±20% at 120Hz, 20°C																								
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)	<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 (0.40)</td> <td>0.26 (0.30)</td> <td>0.20 (0.24)</td> <td>0.16 (0.19)</td> <td>0.14 (0.16)</td> <td>0.12 (0.14)</td> <td>0.12 (0.14)</td> </tr> </tbody> </table> <p>Measurement frequency : 120Hz at 20°C Values in ( ) applicable to WR, φ3 case size.</p>	Rated voltage (V)	4	6.3	10	16	25	35	50	tan δ (MAX.)	0.35 (0.40)	0.26 (0.30)	0.20 (0.24)	0.16 (0.19)	0.14 (0.16)	0.12 (0.14)	0.12 (0.14)								
Rated voltage (V)	4	6.3	10	16	25	35	50																		
tan δ (MAX.)	0.35 (0.40)	0.26 (0.30)	0.20 (0.24)	0.16 (0.19)	0.14 (0.16)	0.12 (0.14)	0.12 (0.14)																		
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>8</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </tbody> </table> <p>Measurement frequency : 120Hz</p>	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	8	4	4	3	3
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	8	4	4	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 2000 hours at 85°C.</p> <table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>Within ±20% of the initial capacitance value (Within ±25% for 4V and φ3,WR series units)</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> </tbody> </table>	Capacitance change	Within ±20% of the initial capacitance value (Within ±25% for 4V and φ3,WR series units)	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 (Within ±25% for 4V and φ3,WR series units)																								
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.																								
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"> <tbody> <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> </tbody> </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



- ※1. Voltage mark for 6.3V is 「6V」.  
In case of marking for φ3 units, 「V」 for rated voltage is omitted.  
※2. In case of marking for φ3 units, Lot No. is expressed by a digit (month code).

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



- In the case of size φ3 in ( ), parentheses, use WX in the 2nd and 3rd digit and put a 2 in the 12th digit of type numbering system.

● Dimension table in next page.

## ■ Dimensions

Cap. (μF)	Code	V		4		6.3		10		16		25		35		50		
		0G	0J	1A	1C	1E	1V	1H										
0.1	0R1																4 (3)	1.0
0.22	R22																4 (3)	2.0
0.33	R33																4 (3)	2.8
0.47	R47																4 (3)	4.0
1	010																4 (3)	8.4(8.0)
2.2	2R2														3	8.4	4 (3)	13 (10)
3.3	3R3														3	10	4	17
4.7	4R7														4 (3)	16 (12)	4	18
10	100														4 (3)	23 (18)	• 5	27 (24)
22	220	3	19	4 (3)	28 (21)	• 5	33 (30)	• 5	37 (30)	○ 6.3	42 (38)	○ 6.3	46 (39)	□ 8	52 (43)			
33	330	4	28	• 5	37 (34)	• 5	41 (34)	○ 6.3	49 (44)	○ 6.3	52 (46)	□ 8	62 (53)	8	71			
47	470	4	33	• 5	45 (40)	○ 6.3	52 (47)	○ 6.3	58 (52)	□ 8	70 (60)	8	80					
56	560	5	42	○ 6.3	52 (46)	○ 6.3	57 (50)	○ 6.3	63 (57)	□ 8	76 (65)							
100	101	5	56	○ 6.3	70 (47)	○ 6.3	76 (54)	6.3	86	8	110							
150	151	6.3	79	6.3	71	□ 8	111 (76)											
220	221	6.3	96	□ 8	110 (74)	8	135											
330	331	8	145	8	170													

( ) is also available with φ3mm upon request.

Rated ripple current (mArms) at 85°C 120Hz

• In the case of size φ3 in ( ), parentheses, use WX at 2nd and 3rd digit and put 2 at the 12th digit of type numbering system. ( ) = φ3 units and WR Series

Size φ4 is available for capacitors marked. " • "  
 Size φ5 is available for capacitors marked. " ○ "  
 Size φ6.3 is available for capacitors marked. " □ " } In such a case, WR will be put at 2nd and 3rd digit of type numbering system.

## ● 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 UR(p.150), UG(p.158) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.