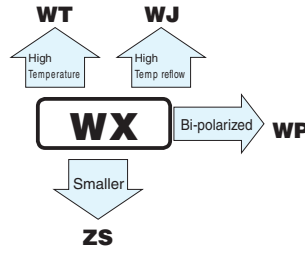


**WX** series 5.5mmL Chip Type



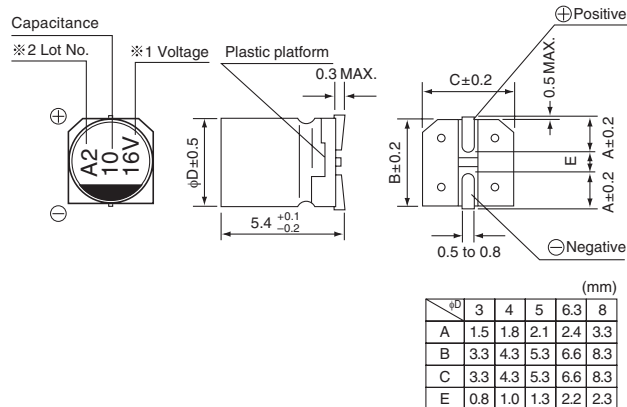
- Chip type with 5.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Load life of 2000 hours at 85°C.
- Compliant to the RoHS directive (2011/65/EU).



## Specifications

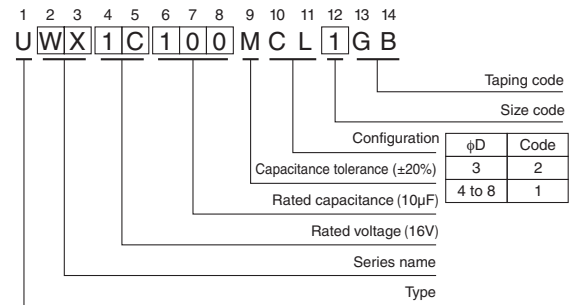
Item	Performance Characteristics																								
Category Temperature Range	-40 to +85°C																								
Rated Voltage Range	4 to 50V																								
Rated Capacitance Range	0.1 to 330μF																								
Capacitance Tolerance	±20% at 120Hz, 20°C																								
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)	<p>Measurement frequency : 120Hz at 20°C</p> <table border="1"> <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> <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> </table> <p>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	<p>Measurement frequency : 120Hz</p> <table border="1"> <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> <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> </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	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"> <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> </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"> <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																		
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)	• 5	29 (24)	○ 6.3	33 (30)	
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												Case size φD (mm)	Rated ripple

( ) 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.