

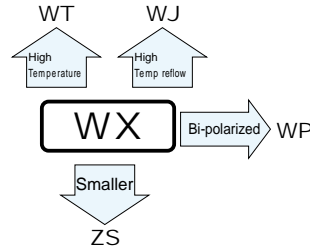
ALUMINUM ELECTROLYTIC CAPACITORS



WX 5.5mmL Chip Type
series



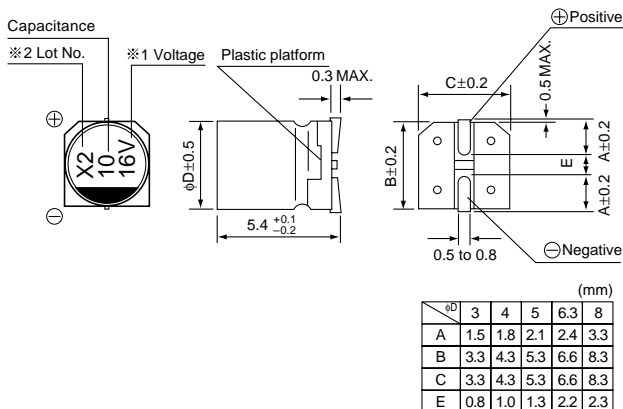
- Chip type with 5.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Load life of 2000 hours at 85°C.
- Compliant to the RoHS directive (2002/95/EC).



Specifications

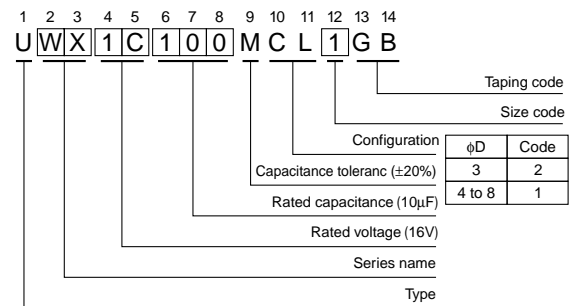
Item	Performance Characteristics																									
Category Temperature Range	-40 to +85°C																									
Rated Voltage Range	4 to 50V																									
Rated Capacitance Range	0.1 to 330μF																									
Capacitance Tolerance	±20% at 120Hz, 20°C																									
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)	Measurement frequency : 120Hz, Temperature : 20°C																									
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>4</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>0.35 (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	Measurement frequency : 120Hz																									
	<table border="1"> <tr> <td colspan="2">Rated voltage (V)</td> <td>4</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>7</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>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 ZT / Z20 (MAX.)	Z-25°C / Z+20°C	7	4	3	2	2	2	2	Z-40°C / Z+20°C	15	8	8	4	4	3
Rated voltage (V)		4	6.3	10	16	25	35	50																		
Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	7	4	3	2	2	2	2																		
	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	●5	20 (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.94), UG(p.100) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.