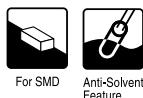
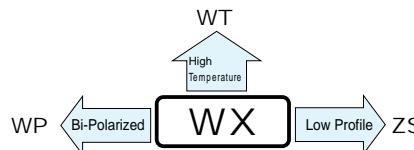


5.5mmL Chip Type  
series

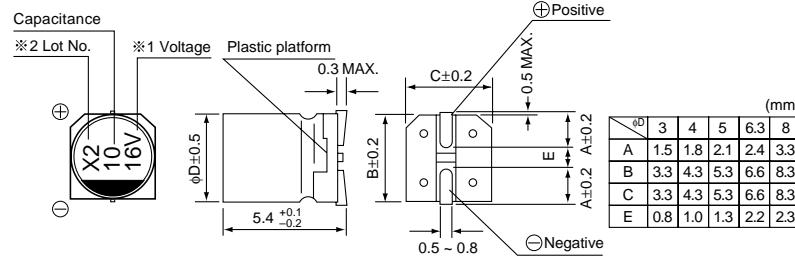
- Chip type with 5.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape.
- Load life of 2000 hours at 85°C.



## ■ Specifications

Item	Performance Characteristics																															
Category Temperature Range	-40 ~ +85°C																															
Rated Voltage Range	4 ~ 50V																															
Rated Capacitance Range	0.1 ~ 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.																															
tan δ	Measurement frequency : 120Hz, Temperature : 20°C <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> Values in ( ) applicable to WR, φ3 case size.								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"> <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>								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	After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristic requirements listed at right.				Capacitance change	Within ±20% of initial value (Within ±25% for 4 V and φ3, WR series units)																										
					tan δ	200% or less of initial specified value																										
					Leakage Current	Initial specified value or less																										
Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for endurance characteristics listed above.																															
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed at right.				Capacitance change	Within ±10% of initial value																										
					tan δ	Initial specified value or less																										
Marking	Black print on the case top.																															

## ■ Chip Type

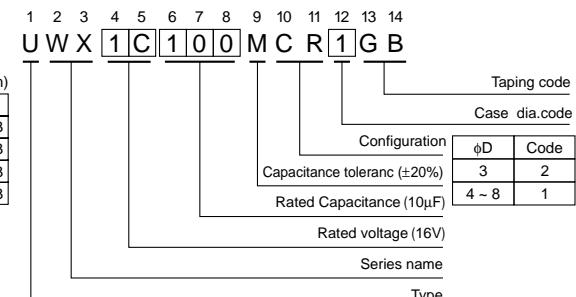


※1. Voltage mark for 6.3V is 「6V」.

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.

WX series

## ■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 Rated ripple

( ) is also available with φ3mm upon request.

Rated Ripple (mA rms) at 85°C 120Hz

( ) = φ 3 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~
Coefficient	0.70	1.00	1.17	1.36	1.50

■ Taping Specifications are given in page 21.

Please refer to page 3 for the minimum order quantity.