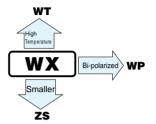




- Chip type with 5.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape.
- Load life of 2000 hours at 85°C.

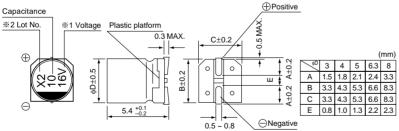




## ■Specifications

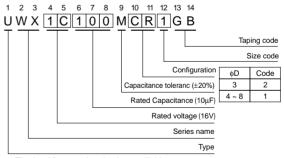
Item	Performance Characteristics													
Category Temperature Range	−40 ~ +85°C													
Rated Voltage Range	4 ~ 50V													
Rated Capacitance Range	0.1 ~ 330μF													
Capacitance Tolerance	±20% at 120Hz, 20°C													
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (µA) ,whichever is greater.													
	Measurement frequency : 120Hz, Temperature : 20°C													
tan δ	Rated voltage (V)	4	6.3	10	_	16	25	_	35	50				
	tan δ (MAX.)	0.35 (0.40)	0.26 (0.30)	0.20 (0.2	24) 0.16	6 (0.19)	0.14 (0	0.16)	0.12 (0.14)	0.12 (0	.14)	Values in (	( ) applicable to WI	R, ¢3 case size.
	Measurement frequency : 120Hz													
Can billian at Land Tarana and the	Rated vo	Itage (V)		4	6.3	1	0	16	25	;	35	50		
Stability at Low Temperature	Impedance ratio	Z-25°C /		7	4	_	3	2	2		2	2		
	ZT / Z20 (MAX.)	Z-40°C /	Z+20°C	15	8		8	4	4		3	3		
	After 2000 hours' application of rated voltage  Capacitance change   Within ±20% of initial value (Within ±25% for 4 V and \$40, WR series units)											series units)		
Endurance	at 85°C, capacitors meet the characteristic requirements listed at right.							200% or less of initial specified value					ounce unite)	
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							Capacitance change Within ±10% of initial value						
											_	Initial specified value or less		
	at room temperature, they meet the characteristic requirements listed at right.  Leakage current Initial specified value or less													
Marking	Black print on the	case top.												

## ■Chip Type



- % 1. Voltage mark for 6.3V is  $\lceil 6 \text{V} \rfloor.$
- In case of marking for  $\phi$ 3 units, "V" for rated voltage is omitted. #2. In case of marking for  $\phi$ 3 units, Lot No.is expressed by a digit (month code).

Type numbering system (Example: 16V 10µF)



- The lead-free product is also available upon request.
  In this case, will be put at 11th digit of type numbering system.
- 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.



## **■**Dimensions

V Cap. (μF) Code		<b>4</b> 0G		<b>6.3</b> 0J		<b>10</b> 1A		<b>16</b> 1C		<b>25</b> 1E		<b>35</b> 1V		<b>50</b> 1H	
0.22	R22				1									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										i	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		i
56	560	5	42	∘ 6.3	52 (46)	∘ 6.3	57 (50)	∘ 6.3	63 (57)	□8	76 (65)				1
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							Case size	l Rated
330	331	8	145	8	170									φD (mm)	ripple

<sup>( )</sup> is also available with \$\phi 3mm upon request.

Rated Ripple (mA rms) at 85°C 120Hz

( ) = φ3 units and WR Series

Size  $\phi 4$  is available for capacitors marked. "  $\bullet$  " Size  $\phi 5$  is available for capacitors marked. "  $\circ$  " Size  $\phi 6.3$  is available for capacitors marked. "  $\Box$ "

'" In such a sees WIDL.

• In the case of size  $\phi 3$  in ( ),parentheses, use WX at 2nd and 3rd digit and put 2 at the 12th digit of type numbering system.

In such a case, WR will be put at 2nd and 3rd digit of type numbering system.

• Frequency coefficient of rated ripple current

- 1 7					
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 22.
- Recommended land size are given in page 23
- Please refer to page 3 for the minimum order quantity.