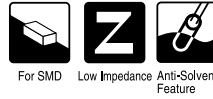
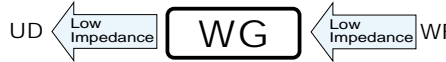
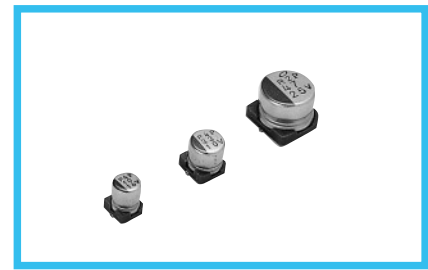


**WG** series Chip Type, Low Impedance



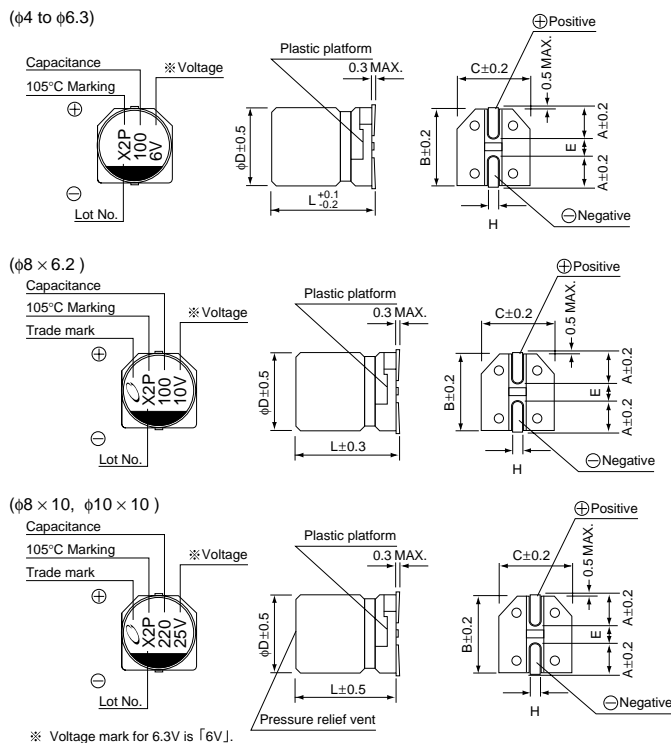
- Chip type, operating over wide temperature range of to  $-55$  to  $+105^{\circ}\text{C}$ .
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).



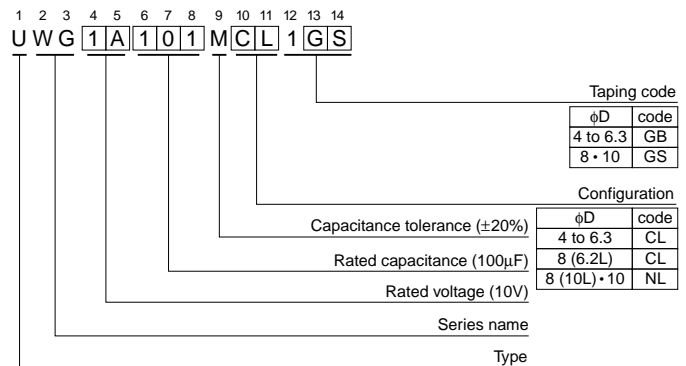
## Specifications

Item	Performance Characteristics							
Category Temperature Range	$-55$ to $+105^{\circ}\text{C}$							
Rated Voltage Range	6.3 to 50V							
Rated Capacitance Range	1 to 1500 $\mu\text{F}$							
Capacitance Tolerance	$\pm 20\%$ at 120Hz, $20^{\circ}\text{C}$							
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 ( $\mu\text{A}$ ), whichever is greater.							
Tangent of loss angle ( $\tan \delta$ )	Measurement frequency : 120Hz, Temperature : $20^{\circ}\text{C}$							
	Rated voltage (V)	6.3	10	16	25	35	50	
Stability at Low Temperature	Measurement frequency : 120Hz							
	Rated voltage (V)		6.3	10	16	25	35	50
	Impedance ratio	Z- $25^{\circ}\text{C}$ / Z+ $20^{\circ}\text{C}$	2	2	2	2	2	2
Endurance	ZT / Z20 (MAX.)		4	4	3	3	3	3
	The specifications listed at right shall be met when the capacitors are restored to $20^{\circ}\text{C}$ after the rated voltage is applied for 1000 hours at $105^{\circ}\text{C}$ .		Capacitance change		Within $\pm 20\%$ of the initial capacitance value			
			tan $\delta$		200% or less than the initial specified value			
Shelf Life			Leakage current		Less than or equal to the initial specified value			
	After storing the capacitors under no load at $105^{\circ}\text{C}$ for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at $20^{\circ}\text{C}$ , they shall meet the specified values for the endurance characteristics listed above.		Capacitance change		Within $\pm 10\%$ of the initial capacitance value			
			tan $\delta$		Less than or equal to the initial specified value			
Resistance to soldering heat			Leakage current		Less than or equal to the initial specified value			
	The capacitors are kept on a hot plate for 30 seconds, which is maintained at $250^{\circ}\text{C}$ . The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to $20^{\circ}\text{C}$ .		Capacitance change		Within $\pm 10\%$ of the initial capacitance value			
			tan $\delta$		Less than or equal to the initial specified value			
Marking			Leakage current		Less than or equal to the initial specified value			
	Black print on the case top.							

## Chip Type



## Type numbering system (Example : 10V 100 $\mu\text{F}$ )



$\phi\text{D} \times \text{L}$	(mm)					
	4 × 5.4	5 × 5.4	6.3 × 5.4	8 × 6.2	8 × 10	10 × 10
A	1.8	2.1	2.4	3.3	2.9	3.2
B	4.3	5.3	6.6	8.3	8.3	10.3
C	4.3	5.3	6.6	8.3	8.3	10.3
E	1.0	1.3	2.2	2.3	3.1	4.5
L	5.4	5.4	5.4	6.2	10	10
H	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

● Dimension table in next page.

### ■ Dimensions

Cap. ( $\mu$ F)	V Code	6.3			10			16		
		0J			1A			1C		
10	100							4×5.4	3.0	60
22	220	4×5.4	3.0	60				5×5.4	1.8	95
33	330				5×5.4	1.8	95			
47	470	5×5.4	1.8	95				6.3×5.4	1.0	140
68	680	6.3×5.4	1.0	140				8×6.2	0.4	230
100	101	6.3×5.4	1.0	140	8×6.2	0.4	230	8×6.2	0.4	230
150	151				8×6.2	0.4	230			
220	221	8×6.2	0.4	230	8×10	0.3	450	10×10	0.15	670
330	331	8×10	0.3	450				10×10	0.15	670
470	471				10×10	0.15	670	10×10	0.15	670
680	681							10×10	0.15	670
1000	102	10×10	0.15	670	10×10	0.15	670			
1500	152	10×10	0.15	670						

Cap. ( $\mu$ F)	V Code	25			35			50		
		1E			1V			1H		
1	010				4×5.4	3.0	60	4×5.4	5.0	30
2.2	2R2				4×5.4	3.0	60	4×5.4	5.0	30
3.3	3R3				4×5.4	3.0	60	4×5.4	5.0	30
4.7	4R7				4×5.4	3.0	60	5×5.4	3.0	50
6.8	6R8	4×5.4	3.0	60	5×5.4	1.8	95			
10	100				5×5.4	1.8	95	6.3×5.4	2.0	70
22	220	6.3×5.4	1.0	140	6.3×5.4	1.0	140	8×6.2	0.7	120
33	330	6.3×5.4	1.0	140	8×6.2	0.4	230	8×10	0.6	300
47	470	8×6.2	0.4	230	8×6.2	0.4	230	10×10	0.3	500
68	680	8×10	0.3	450						
100	101	8×10	0.3	450	10×10	0.15	670	10×10	0.3	500
220	221	10×10	0.15	670	10×10	0.15	670	10×10	0.3	500
330	331	10×10	0.15	670	10×10	0.15	670	Case size $\phi$ D × L (mm)	Impedance	Rated ripple
470	471	10×10	0.15	670						

Max. Impedance ( $\Omega$ ) at 20°C 100kHz  
 Rated ripple current (mA<sub>rms</sub>) at 105°C 100kHz

### ● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please select UJ(p.102) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.