

WT

Chip Type, Wide Temperature Range

series



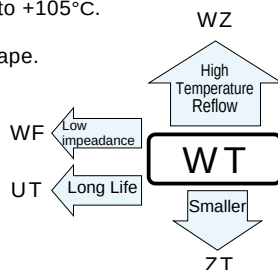
For SMD



Smaller

Anti-Solvent
Feature

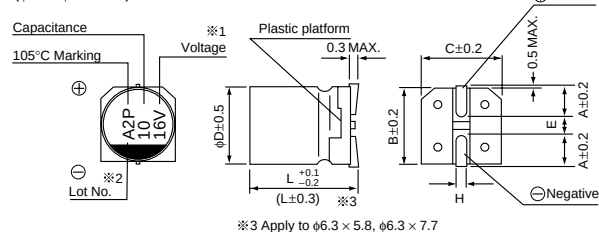
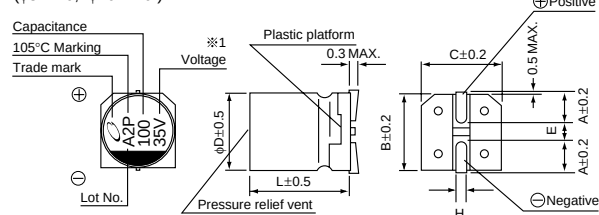
- Chip type operating over wide temperature range of to -55 to $+105^{\circ}\text{C}$.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU).



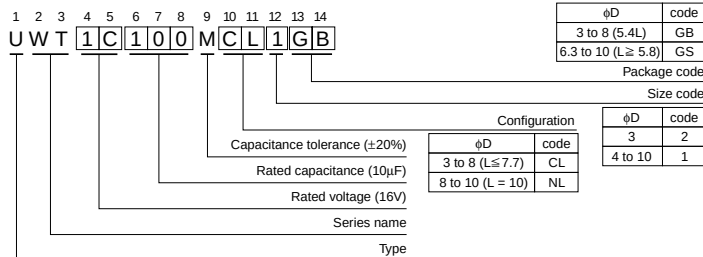
Specifications

Item	Performance Characteristics								
Category Temperature Range	−55 to +105°C								
Rated Voltage Range	4 to 50V								
Rated Capacitance Range	0.1 to 1500μF								
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 at 20°C								
	Rated voltage (V)	4	6.3	10	16	25	35	50	
	tan δ (MAX.)	0.40	0.30	0.24	0.20	0.16	0.14	0.14	
Stability at Low Temperature	Measurement frequency : 120Hz								
	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	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.				Capacitance change		Within ±25% of the initial capacitance value for capacitors of ø3mm unit, and 16V or less. Within ±20% of the initial capacitance value for capacitors of 25V or more.		
					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 105°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	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.				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

($\phi 3$ to $\phi 8 \times 5.4$)($\phi 8 \times 10$, $\phi 10 \times 10$)

Type numbering system (Example : 16V 10 μF)



$\phi D \times L$	3 $\times$ 5.4	4 $\times$ 5.4	5 $\times$ 5.4	6.3 $\times$ 5.4	6.3 $\times$ 5.8	6.3 $\times$ 7.7	8 $\times$ 5.4	8 $\times$ 10	10 $\times$ 10
A	1.5	1.8	2.1	2.4	2.4	2.4	3.3	2.9	3.2
B	3.3	4.3	5.3	6.6	6.6	6.6	8.3	8.3	10.3
C	3.3	4.3	5.3	6.6	6.6	6.6	8.3	8.3	10.3
E	0.8	1.0	1.3	2.2	2.2	2.2	2.3	3.1	4.5
L	5.4	5.4	5.4	5.4	5.8	7.7	5.4	10	10
H	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	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. (μF)	V	4		6.3		10		16		25		35		50	
		Code		OG		OJ		1A		1C		1E		1V	
0.1	OR1													4×5.4 (3)	1.0
0.22	R22													4×5.4 (3)	2.6
0.33	R33													4×5.4 (3)	3.2
0.47	R47													4×5.4 (3)	3.8
1	010													4×5.4 (3)	6.3 (5.9)
2.2	2R2											3×5.4	7.5	4×5.4 (3)	11 (9)
3.3	3R3											3×5.4	9	4×5.4	14
4.7	4R7									4×5.4 (3)	13 (10)	4×5.4	15	5×5.4	19
10	100							4×5.4 (3)	18 (14)	5×5.4	23	5×5.4	25	6.3×5.4	30
22	220	4×5.4	22	4×5.4	22	5×5.4	27	5×5.4	30	6.3×5.4	38	6.3×5.4	42	● 8×5.4	51 (45)
33	330	5×5.4	30	5×5.4	30	5×5.4	35	6.3×5.4	40	6.3×5.4	48	● 8×5.4	59 (52)	6.3×7.7	60
47	470	5×5.4	36	5×5.4	36	6.3×5.4	46	6.3×5.4	50	● 8×5.4	66 (59)	6.3×5.8	63	6.3×7.7	63
100	101	6.3×5.4	60	6.3×5.4	60	6.3×5.4	60	6.3×5.4	60	6.3×7.7	91	6.3×7.7	84	8×10	140
150	151	6.3×5.8	86	6.3×5.8	86	6.3×5.8	86	6.3×7.7	95	8×10	140	8×10	155	10×10	180
220	221	● 8×5.4	102 (91)	● 8×5.4	102 (91)	6.3×7.7	105	6.3×7.7	105	8×10	155	8×10	190	10×10	220
330	331	6.3×7.7	105	6.3×7.7	105	8×10	195	8×10	195	8×10	190	10×10	300		
470	471	8×10	210	8×10	210	8×10	210	8×10	230	10×10	300				
680	681	8×10	210	8×10	210	10×10	310	10×10	310						
1000	102	8×10	230	8×10	230	10×10	310								
1500	152	10×10	310	10×10	310									Case size φ D × L (mm)	Rated ripple

Rated ripple current (mA_{rms}) at 105°C 120Hz

() is also available with φ3mm upon request. In such a case, [2] will be put at 12th digit of type numbering system.

Size φ6.3×5.8 is available for capacitors marked. "●" In such a case, [6] will be put at 12th 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 UX(p.158), UJ(p.164) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.