

**UWT**

Chip Type, Wide Temperature Range



For SMD



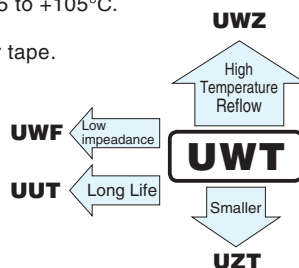
Smaller



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).
- AEC-Q200 compliant. Please contact us for details.

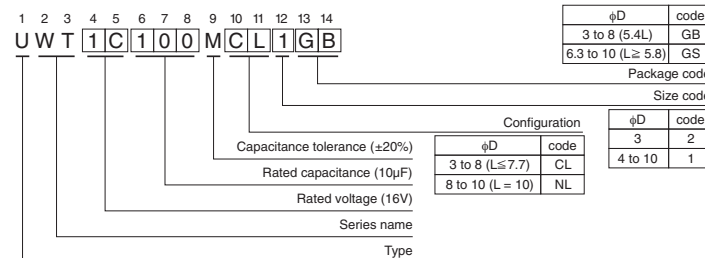
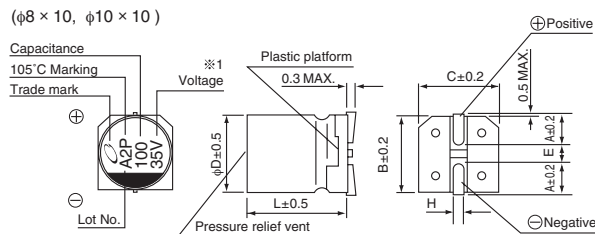
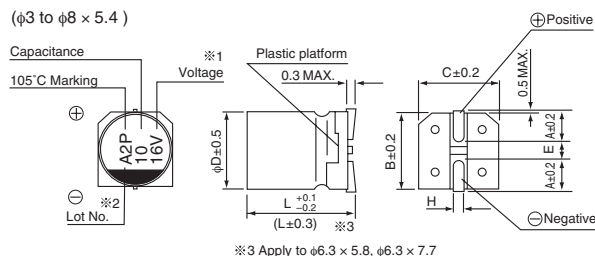
Values marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.



## Specifications

Item	Performance Characteristics								
Category Temperature Range	-55 to +105°C								
Rated Voltage Range	4 to 50V								
Rated Capacitance Range	1 to 1500μF								
Capacitance Tolerance	±20% at 120Hz, 20°C								
Leakage Current	After 2 minutes' application of rated voltage at 20°C, 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 ϕ3mm 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

Type numbering system (Example : 16V 10 $\mu\text{F}$ )

(mm)	$\phi D \times L$	3 × 5.4	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 5.8	6.3 × 7.7	8 × 5.4	8 × 10	10 × 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.

UWT

## ■ Dimensions

Cap. (μF)	V Code	4		6.3		10		16		25		35		50	
		0G		0J		1A		1C		1E		1V		1H	
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							Case size	Rated
1500	152	10 × 10	310	10 × 10	310									φ D × L (mm)	ripple

(※3) : φ3 In such a case, [2] will be put at 12th digit of type numbering system.

※ However, φ3 which are scheduled to be discontinued. Not recommended for new designs.

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.

Rated ripple current (mA rms) at 105°C 120Hz

## ● 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 UUX(p.158), UUJ(p.164) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.