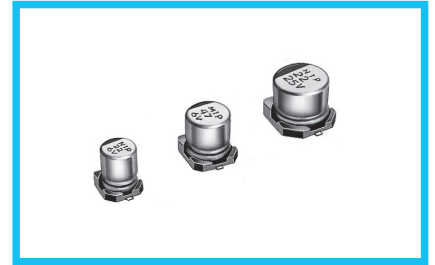
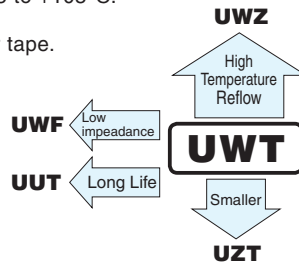


UWT Chip Type, Wide Temperature Range



- 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).

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

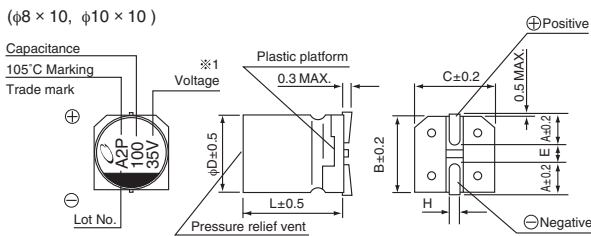
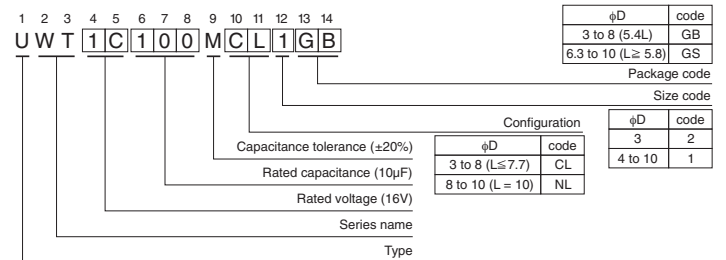
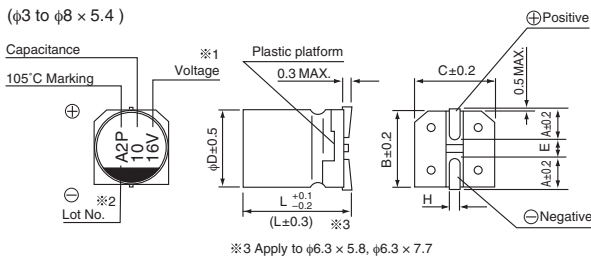


Specifications

Item	Performance Characteristics	
Category Temperature Range	-55 to $+105^{\circ}\text{C}$	
Rated Voltage Range	4 to 50V	
Rated Capacitance Range	0.1 to 1500 μF	
Capacitance Tolerance	$\pm 20\%$ 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 $+20^{\circ}\text{C}$ 7 4 3 2 2 2 2
	ZT / Z20 (MAX.)	Z -40°C / Z $+20^{\circ}\text{C}$ 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 $\pm 25\%$ of the initial capacitance value for capacitors of $\phi 3\text{mm}$ unit, and 16V or less. Within $\pm 20\%$ 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 $\pm 10\%$ 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 μF)



$\phi D \times L$	(mm)								
	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.



■ Dimensions

Cap. (μF)	Code	V		4		6.3		10		16		25		35		50			
		0G	0J	1A	1C	1E	1V	1H											
0.1	0R1																※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										Case size	Rated ripple	
1500	152	10 × 10	310	10 × 10	310												φ D × L (mm)		

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 UUX(p.152), UUJ(p.158) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.