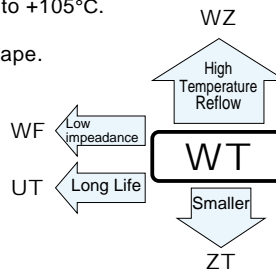


ALUMINUM ELECTROLYTIC CAPACITORS

WT series Chip Type, Wide Temperature Range



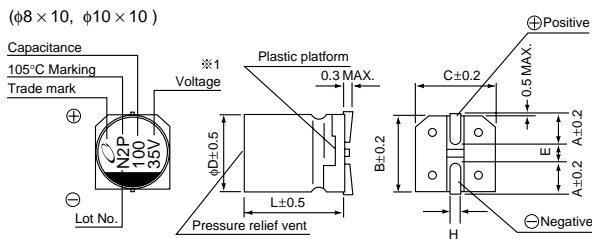
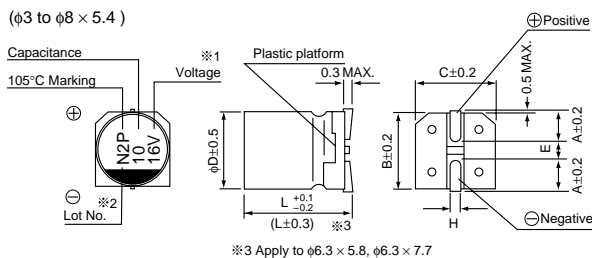
- Chip type operating over wide temperature range of to -55 to $+105^{\circ}\text{C}$.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).



Specifications

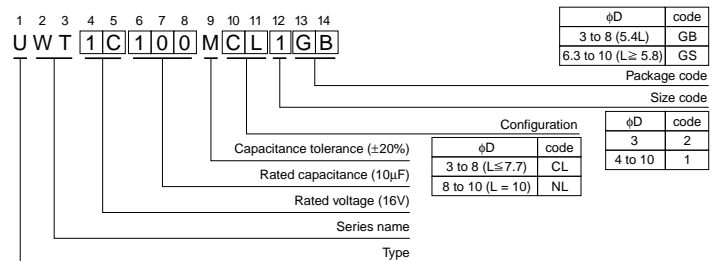
Item	Performance Characteristics									
Category Temperature Range	-55 to $+105^{\circ}\text{C}$									
Rated Voltage Range	4 to 50V									
Rated Capacitance Range	0.1 to $1500\mu\text{F}$									
Capacitance Tolerance	$\pm 20\%$ at 120Hz, 20°C									
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or $3(\mu\text{A})$, whichever is greater.									
Tangent of loss angle ($\tan \delta$)	Measurement frequency : 120Hz, Temperature : 20°C									
	Rated voltage (V)	4	6.3	10	16	25	35	50		
Stability at Low Temperature	Measurement frequency : 120Hz									
	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 $\pm 25\%$ 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



- ※1. Voltage mark for 6.3V is "6V". 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 $10\mu\text{F}$)



$\phi D \times L$	(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)		6.3×7.7	60
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)	6.3×5.8	63		6.3×7.7	63
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	84		8×10	140
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	155		10×10	180
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	190	10×10	300			
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	300			
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	310							
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													

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.104), UJ(p.108) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.