

# ALUMINUM ELECTROLYTIC CAPACITORS

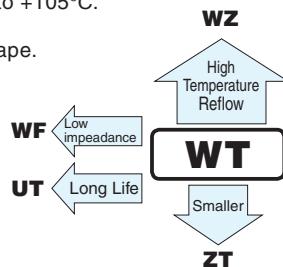
nichicon



Chip Type, Wide Temperature Range



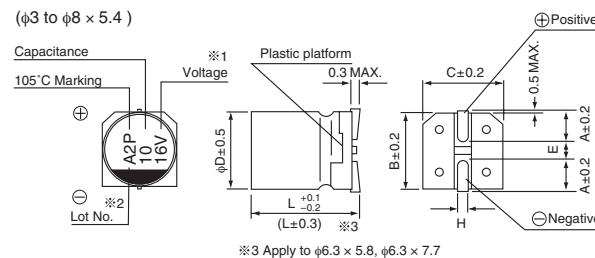
- Chip type operating over wide temperature range of to  $-55$  to  $+105^{\circ}\text{C}$ .
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU).



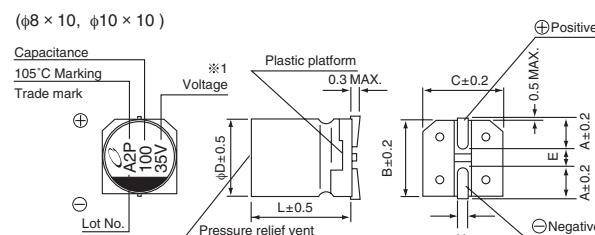
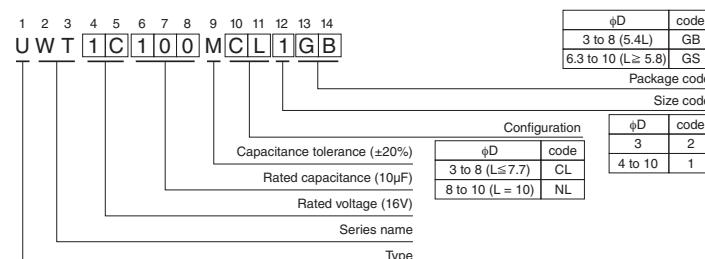
## ■ Specifications

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, $20^{\circ}\text{C}$																																	
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 ( $\tan \delta$ )	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th><th>4</th><th>6.3</th><th>10</th><th>16</th><th>25</th><th>35</th><th>50</th></tr> </thead> <tbody> <tr> <td><math>\tan \delta</math> (MAX.)</td><td>0.40</td><td>0.30</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.14</td></tr> </tbody> </table>							Rated voltage (V)	4	6.3	10	16	25	35	50	$\tan \delta$ (MAX.)	0.40	0.30	0.24	0.20	0.16	0.14	0.14											
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Shelf Life	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.																																	
Resistance to soldering heat	<table border="1"> <tr> <td>The capacitors are kept on a hot plate for 30 seconds, which is maintained at <math>250^{\circ}\text{C}</math>. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to <math>20^{\circ}\text{C}</math>.</td> <td>Capacitance change</td><td>Within <math>\pm 10\%</math> of the initial capacitance value</td></tr> <tr> <td></td><td><math>\tan \delta</math></td><td>Less than or equal to the initial specified value</td></tr> <tr> <td></td><td>Leakage current</td><td>Less than or equal to the initial specified value</td></tr> </table>							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		Leakage current	Less than or equal to the initial specified value																		
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Marking	Black print on the case top.																																	

## ■ Chip Type



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



$\phi D \times L$	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	0.8 to 1.1	0.8 to 1.1						

※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).

● Dimension table in next page.

CAT.8100D

## ■ Dimensions

Cap. (μF)	V	4	6.3	10	16	25	35	50
	Code	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 Φ D × L (mm)
1500	152	10 × 10 310	10 × 10 310					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.154), UJ(p.160) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.