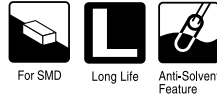
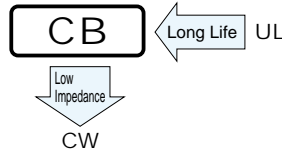


# ALUMINUM ELECTROLYTIC CAPACITORS

**CB** series Chip Type, Long Life Assurance



- Chip type with load life of 7000 hours at +105°C.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).

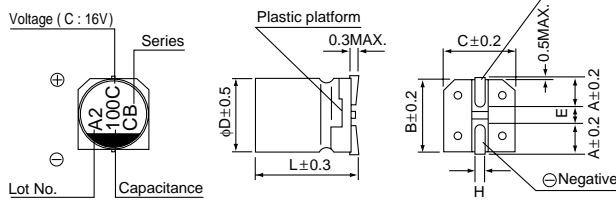


## Specifications

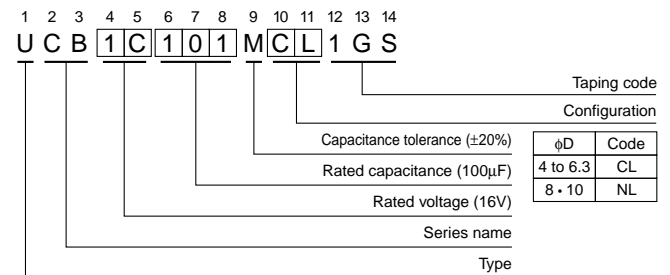
Item	Performance Characteristics													
Category Temperature Range	-25 to +105°C													
Rated Voltage Range	6.3 to 50V													
Rated Capacitance Range	0.1 to 1000μF													
Capacitance Tolerance	±20% at 120Hz, 20°C													
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.03 CV or 4 (μA) , whichever is greater.													
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C													
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.32</td> <td>0.28</td> <td>0.26</td> <td>0.16</td> <td>0.14</td> <td>0.14</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	tan δ (MAX.)	0.32	0.28	0.26	0.16	0.14
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tan δ (MAX.)	0.32	0.28	0.26	0.16	0.14	0.14								
Stability at Low Temperature	Measurement frequency : 120Hz													
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Impedance ratio ZT / Z20 (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	4	3	2	2
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Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	4	3	2	2	2								
Endurance	<p>The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 7000 hours at 105°C.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±30% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>300% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	Capacitance change	Within ±30% of the initial capacitance value	tan δ	300% or less than the initial specified value	Leakage current	Less than or equal to the initial specified value							
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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	<p>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.</p> <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±10% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>Less than or equal to the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	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							
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

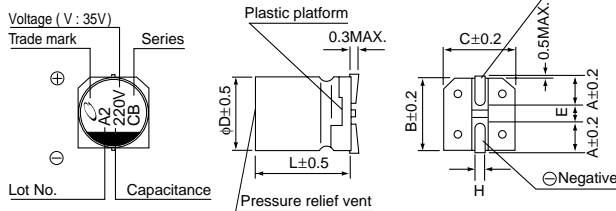
(φ4 to φ6.3)



## Type numbering system (Example : 16V 100μF)



(φ8 to φ10)



φD × L	4 × 7	5 × 7	6.3 × 7	6.3 × 8.7	8 × 10	10 × 10
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	7.0	7.0	7.0	8.7	10	10
H	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

Voltage

V	6.3	10	16	25	35	50
Code	j	A	C	E	V	H

● Dimension table in next page.



## ■Dimensions

Cap.( $\mu$ F)	Code	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1									4×7	1.0		
0.22	R22									4×7	2.6		
0.33	R33									4×7	3.2		
0.47	R47									4×7	3.8		
1	010									4×7	6.2		
2.2	2R2									4×7	11		
3.3	3R3									4×7	14		
4.7	4R7									4×7	15		
10	100					4×7	18			5×7	25		
22	220	4×7	22			5×7	30			6.3×7	42		
33	330			5×7	35			6.3×7	48	6.3×8.7	57	8×10	77
47	470	5×7	36			6.3×7	50	6.3×8.7	63			8×10	92
100	101	6.3×7	60			6.3×8.7	81	8×10	116			10×10	151
220	221	6.3×8.7	101	8×10	141					10×10	216		
330	331	8×10	160										
470	471					10×10	254						
1000	102	10×10	313									Case size $\phi$ D×L (mm)	Rated ripple

Rated ripple current (mA<sub>rms</sub>) 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 refer to page 3 for the minimum order quantity.