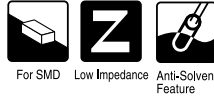


ALUMINUM ELECTROLYTIC CAPACITORS



CL series
Chip Type, Low Impedance



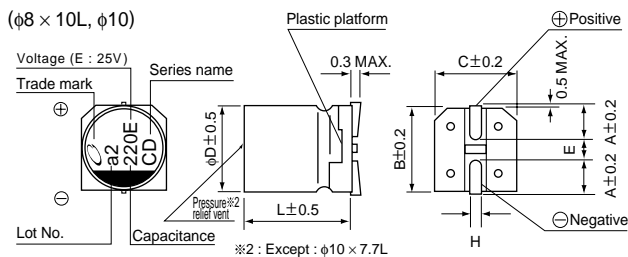
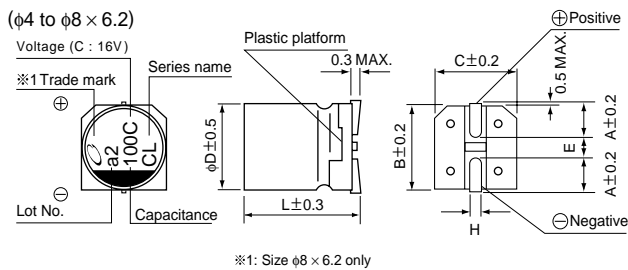
- Chip type, low impedance, temperature range up to +105°C.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).



Specifications

Item	Performance Characteristics					
Category Temperature Range	- 55 to +105°C					
Rated Voltage Range	6.3 to 35V					
Rated Capacitance Range	10 to 2200μF					
Capacitance Tolerance	± 20% at 120Hz, 20°C					
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01 CV or 3 (μA), whichever is greater.					
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz, Temperature : 20°C					
	Rated voltage (V)	6.3	10	16	25	35
Stability at Low Temperature	Measurement frequency : 120Hz					
	Rated voltage (V)	6.3	10	16	25	35
	Impedance ratio Z-25°C / Z+20°C	2	2	2	2	2
	Z-40°C / Z+20°C	3	3	3	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 2000 hours at 105°C.					
	Capacitance Change	Within ± 30% of the initial capacitance value				
	tan δ	200% or less than 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.					
	Capacitance Change	Within ± 10% of the initial capacitance value				
	tan δ	Less than or equal to the initial specified value				
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				
Marking	Black print on the case top.					

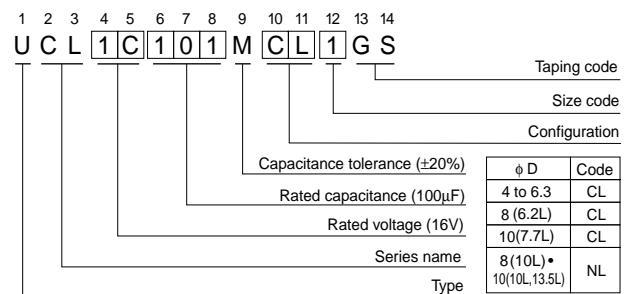
Chip Type



Voltage

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

Type numbering system (Example : 16V 100μF)



(mm)

φ D × L	4 × 5.8	5 × 5.8	6.3 × 5.8	6.3 × 7.7	8 × 6.2	8 × 10	10 × 7.7	10 × 10	10 × 13.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2	3.2
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	10.3
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	10.3
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	4.5	4.5
L	5.8	5.8	5.8	7.7	6.2	10	7.7	10	13.5
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	0.8 to 1.1	0.8 to 1.1	0.8 to 1.1	0.8 to 1.1

• Dimension table in next page.

Specifications

Cap. (μF)	V Code	6.3			10			16			25			35								
		0J			1A			1C			1E			1V								
10	100							4 × 5.8	0.85	160	4 × 5.8	0.85	160	● 4 × 5.8	0.85	160	5 × 5.8	0.36	240			
22	220	4 × 5.8	0.85	160	4 × 5.8	0.85	160	● 4 × 5.8	0.85	160	5 × 5.8	0.36	240	5 × 5.8	0.36	240						
33	330				● 4 × 5.8	0.85	160							● 5 × 5.8	0.36	240	6.3 × 5.8	0.26	300			
47	470	● 4 × 5.8	0.85	160	6.3 × 5.8	0.26	300	● 5 × 5.8	0.36	240	6.3 × 5.8	0.26	300	6.3 × 5.8	0.26	300	6.3 × 5.8	0.26	300			
68	680							6.3 × 5.8	0.26	300	6.3 × 5.8	0.26	300	6.3 × 5.8	0.26	300	6.3 × 7.7	0.16	600			
100	101	● 5 × 5.8	0.36	240				6.3 × 5.8	0.26	300	6.3 × 7.7	0.16	600	6.3 × 7.7	0.16	600	● 6.3 × 7.7	0.16	600	8 × 10	0.08	850
		6.3 × 5.8	0.26	300				● 6.3 × 7.7	0.16	600	● 8 × 6.2	0.18	500	● 8 × 6.2	0.18	500	8 × 10	0.08	850	8 × 10	0.08	850
150	151				6.3 × 5.8	0.26	300	6.3 × 7.7	0.16	600	8 × 10	0.08	850	● 10 × 7.7	0.10	850	8 × 10	0.08	850	● 10 × 7.7	0.10	850
220	221	6.3 × 5.8	0.26	300	6.3 × 7.7	0.16	600	6.3 × 7.7	0.16	600	8 × 10	0.08	850	● 10 × 7.7	0.10	850	8 × 10	0.08	850	● 10 × 7.7	0.10	850
					● 8 × 6.2	0.18	500	● 8 × 6.2	0.18	500	● 10 × 7.7	0.10	850	● 10 × 7.7	0.10	850	8 × 10	0.08	850	10 × 10	0.06	1190
330	331	6.3 × 7.7	0.16	600	8 × 10	0.08	850	8 × 10	0.08	850	8 × 10	0.08	850	8 × 10	0.08	850	10 × 10	0.06	1190			
		● 8 × 6.2	0.18	500	● 10 × 7.7	0.10	850	● 10 × 7.7	0.10	850												
390	391																10 × 10	0.08	850			
470	471	8 × 10	0.08	850	8 × 10	0.08	850	8 × 10	0.08	850	10 × 10	0.06	1190	10 × 10	0.06	1190	10 × 13.5	0.06	1190			
		● 10 × 7.7	0.10	850	● 10 × 7.7	0.10	850	● 10 × 7.7	0.10	850												
560	561										10 × 10	0.08	850									
680	681				8 × 10	0.08	850	10 × 10	0.06	1190	10 × 13.5	0.06	1190									
820	821							10 × 10	0.08	850												
1000	102	8 × 10	0.08	850	10 × 10	0.06	1190	10 × 13.5	0.06	1190												
1200	122				10 × 10	0.08	850															
1500	152	10 × 10	0.06	1190	10 × 13.5	0.06	1190															
1800	182	10 × 10	0.08	850																		
2200	222	10 × 13.5	0.06	1190																		
																	Case size φD × L (mm)	Impedance	Rated ripple			

Max. Impedance (Ω) at 20°C 100kHz, Rated ripple current (mA rms) at 105°C 100kHz

●: In this case, [6] will be put at 12th digit of type numbering system.

Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

- 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.