ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

CL Chip Type, Low Impedance series

For SMD | Low Impedance | Anti-Solvent Feature

- 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).

CL ← Low Impedance CD

■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
tan δ (MAX.)	0.26	0.19	0.16	0.14	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35
Impedance ratio ZT / Z20 (MAX.)	Z—25°C / Z+20°C	2	2	2	2	2
	Z—40°C / Z+20°C	3	3	3	3	3
	Z—55°C / Z+20°C	4	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 2000 hours at 105°C.

Capacitance Change	Within ± 30% of the initial capacitance value
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.

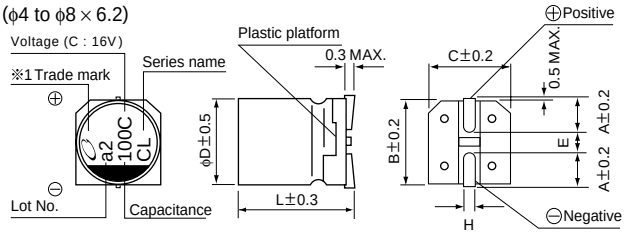
Resistance to soldering heat — The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C .

Capacitance Change	Within ± 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.

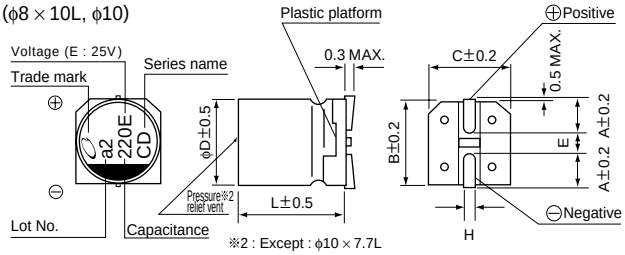
■Chip Type

(φ4 to φ8 × 6.2)



※1: Size φ8 × 6.2 only

(φ8 × 10L, φ10)



※2 : Except : φ10 × 7.7L

Voltage

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

● Dimension table in next page.

Type numbering system (Example : 16V 100μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	C	L	1	C	1	0	1	M	C	L	1	G	S

- 1 2 3 : Type
- 4 5 : Series name
- 6 7 8 : Rated voltage (16V)
- 9 : Rated capacitance (100μF)
- 10 : Capacitance tolerance (±20%)
- 11 12 : Configuration
- 13 : Size code
- 14 : Taping code

φ D	Code
4 to 6.3	CL
8 (6.2L)	CL
10(7.7L)	CL
8(10L)• 10(10L,13.5L)	NL

(mm)

φD × 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

CAT.8100Z

CL series

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
								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
					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
		5×5.8	0.36	240				6.3×5.8	0.26	300						
68	680							6.3×5.8	0.26	300	6.3×5.8	0.26	300	6.3×7.7	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
		6.3×5.8	0.26	300				● 6.3×7.7	0.16	600	●8×6.2	0.18	500	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	8×10	0.08	850
											●10×7.7	0.10	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	8×10	0.08	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
330	331	6.3×7.7	0.16	600	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	10×13.5	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										Case size φD × L (mm)	Impedance	Rated ripple
2200	222	10×13.5	0.06	1190												

Max. Impedance (Ω) at 20°C 100kHz, Rated ripple current (mArms) 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 refrow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.