ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

CD Chip Type, Low Impedance series

For SMD | Low Impedance | Anti-Solvent Feature

- Chip type, low impedance temperature range up to +105C.
- 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).

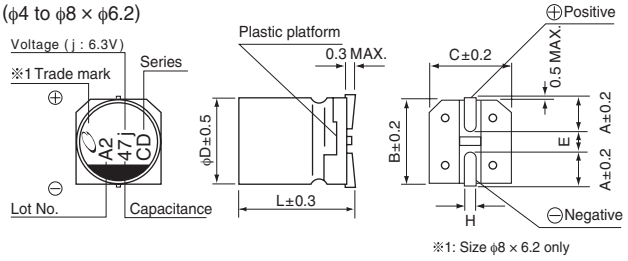
CL Low Impedance **CD** Low Impedance UD

Specifications

Item	Performance Characteristics
Category Temperature Range	– 55 to +105°C
Rated Voltage Range	6.3 to 100V
Rated Capacitance Range	1 to 3300F
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 at 20°C Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 tan δ (MAX.): 0.26 / 0.19 / 0.16 / 0.14 / 0.12 / 0.10 / 0.08 / 0.08 / 0.07 For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.
Stability at Low Temperature	Measurement frequency : 120Hz Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impecance ratio ZT / Z20 (MAX.) Z—25°C / Z+20°C: 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 Z—40°C / Z+20°C: 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 / 3 Z—55°C / Z+20°C: 4 / 4 / 4 / 3 / 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 5000 hours (2000 hours for L < 10 mm: 50V or less, and for L ≦ 10mm: 63V or more) at 105°C. Capacitance Change: Within ± 30% of the initial capacitance value tan δ: 200% or less than the initial specified value; 300% or less than the initial specified value for 63V or more 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.

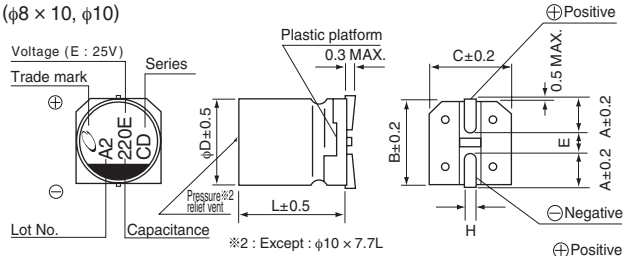
Chip Type

(φ4 to φ8 × φ6.2)



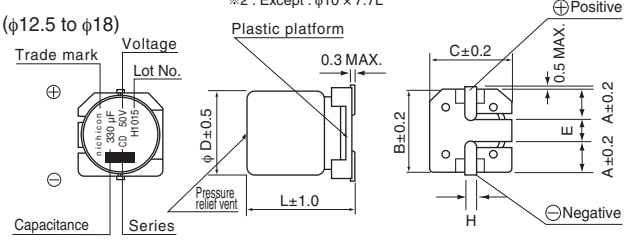
※1: Size φ8 × 6.2 only

(φ8 × 10, φ10)



※2 : Except : φ10 × 7.7L

(φ12.5 to φ18)



※φ8 × 10L, φ10 × 10L, φ12.5 × 13.5L, φ16 × 16.5L, φ18 × 16.5L :
The vibration structure-resistant product is also available upon request, please ask for details.

●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	D	1	C	1	0	1	M	C	L	1	G	S

Package code

Size	Package	Code
φ4 to 10	Taping	GS
φ12.5 to 18	Taping	MS
φ12.5 to 18	Tray	ZD

Size code

Configuration

φ D	Code
4 to 6.3	CL
8 (6.2L)	CL
10(7.7L)	CL
8(10L) • 10(10L,13.5L)	NL
12.5 to 18	NQ

Capacitance tolerance (±20%)

Rated capacitance (100μF)

Rated voltage (16V)

Series name

Type

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
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5	4.5
L	5.8	5.8	5.8	7.7	6.2	10	7.7	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	0.8 to 1.1	0.8 to 1.1	0.8 to 1.1

(mm)

φD × L	10 × 13.5	12.5 × 13.5	16 × 16.5	18 × 16.5
A	3.2	4.8	5.4	6.4
B	10.3	13.6	17.1	19.1
C	10.3	13.6	17.1	19.1
E	4.5	4.0	6.3	6.3
L	13.5	13.5	16.5	16.5
H	0.8 to 1.1	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4

Voltage

V	6.3	10	16	25	35	50	63	80	100
Code	j	A	C	E	V	H	J	K	2A

nichicon

CD series

Dimensions

Cap. (μF) \ V	Code	6.3			10			16			25			35			50		
		0J			1A			1C			1E			1V			1H		
1	010																4 × 5.8	2.70	60
2.2	2R2																4 × 5.8	2.70	60
3.3	3R3																4 × 5.8	2.70	60
4.7	4R7													4 × 5.8	1.35	90	4 × 5.8	2.70	60
10	100							4 × 5.8	1.35	90	4 × 5.8	1.35	90	●4 × 5.8	1.35	90	●5 × 5.8	1.50	90
														5 × 5.8	0.70	160	6.3 × 5.8	0.86	170
15	150							4 × 5.8	1.35	90	5 × 5.8	0.70	160						
22	220	4 × 5.8	1.35	90	4 × 5.8	1.35	90	●4 × 5.8	1.35	90	5 × 5.8	0.70	160	5 × 5.8	0.70	160	6.3 × 5.8	0.86	170
								5 × 5.8	0.70	160								
27	270	4 × 5.8	1.35	90	5 × 5.8	0.70	160	5 × 5.8	0.70	160	6.3 × 5.8	0.36	240						
33	330	5 × 5.8	0.70	160	●4 × 5.8	1.35	90	6.3 × 5.8	0.36	240	●5 × 5.8	0.70	160	6.3 × 5.8	0.36	240	6.3 × 7.7	0.66	195
					5 × 5.8	0.70	160				6.3 × 5.8	0.36	240				●8 × 6.2	0.63	200
47	470	●4 × 5.8	1.35	90	6.3 × 5.8	0.36	240	●5 × 5.8	0.70	160	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 7.7	0.66	195
		5 × 5.8	0.70	160				6.3 × 5.8	0.36	240							●8 × 6.2	0.63	200
56	560	5 × 5.8	0.70	160	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240						
68	680	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 7.7	0.32	290			
100	101	●5 × 5.8	0.70	160	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 7.7	0.32	290	●6.3 × 7.7	0.32	290	8 × 10	0.32	350
		6.3 × 5.8	0.36	240							●8 × 6.2	0.26	300	8 × 10	0.16	600	●10 × 7.7	0.36	330
150	151	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 7.7	0.32	290	8 × 10	0.16	600	8 × 10	0.16	600	10 × 10	0.16	700
											●10 × 7.7	0.18	600	●10 × 7.7	0.18	600			
220	221	6.3 × 5.8	0.36	240	6.3 × 7.7	0.32	290	6.3 × 7.7	0.32	290	8 × 10	0.16	600	8 × 10	0.16	600	10 × 10	0.16	700
					●8 × 6.2	0.26	300	●8 × 6.2	0.26	300	●10 × 7.7	0.18	600	●10 × 7.7	0.18	600			
330	331	6.3 × 7.7	0.32	290	8 × 10	0.16	600	8 × 10	0.16	600	8 × 10	0.16	600	10 × 10	0.08	850	●10 × 13.5	0.14	800
		●8 × 6.2	0.26	300	●10 × 7.7	0.18	600	●10 × 7.7	0.18	600							12.5 × 13.5	0.12	900
390	391																12.5 × 13.5	0.12	900
470	471	8 × 10	0.16	600	8 × 10	0.16	600	8 × 10	0.16	600	10 × 10	0.08	850	●10 × 13.5	0.08	950	16 × 16.5	0.073	1610
		●10 × 7.7	0.18	600	●10 × 7.7	0.18	600	●10 × 7.7	0.18	600				12.5 × 13.5	0.08	1100			
680	681	8 × 10	0.16	600	10 × 10	0.08	850	10 × 10	0.08	850	10 × 13.5	0.08	950	12.5 × 13.5	0.08	1100	16 × 16.5	0.073	1610
		●10 × 7.7	0.18	600															
1000	102	8 × 10	0.16	600	10 × 10	0.08	850	10 × 13.5	0.08	950	12.5 × 13.5	0.08	1100	16 × 16.5	0.035	1800			
1500	152	10 × 10	0.08	850	10 × 13.5	0.08	950	12.5 × 13.5	0.08	1100									
2200	222	10 × 13.5	0.08	950	12.5 × 13.5	0.08	1100				16 × 16.5	0.035	1800				Case size φD × L (mm)	Impedance	Rated ripple
3300	332	12.5 × 13.5	0.08	1100															

Cap. (μF) \ V	Code	63			80			100		
		1J			1K			2A		
3.3	3R3				5 × 5.8	5.00	25			
4.7	4R7	5 × 5.8	3.00	50	6.3 × 5.8	3.00	40			
10	100	6.3 × 5.8	1.50	80	6.3 × 7.7	2.40	60			
					●8 × 6.2	2.40	60			
22	220	6.3 × 7.7	1.20	120	8 × 10	1.30	130	8 × 10	1.30	130
		●8 × 6.2	1.20	120						
33	330	8 × 10	0.65	250	8 × 10	1.30	130	10 × 10	0.70	200
47	470	8 × 10	0.65	250	10 × 10	0.70	200	12.5 × 13.5	0.32	500
68	680	10 × 10	0.35	400	12.5 × 13.5	0.32	500	12.5 × 13.5	0.32	500
100	101	10 × 10	0.35	400	12.5 × 13.5	0.32	500	16 × 16.5	0.17	793
150	151	12.5 × 13.5	0.16	800	12.5 × 13.5	0.32	500	16 × 16.5	0.17	793
220	221	12.5 × 13.5	0.16	800				18 × 16.5	0.15	917
330	331				16 × 16.5	0.17	793	18 × 16.5	0.15	917
470	471	16 × 16.5	0.082	1410	18 × 16.5	0.15	917	Case size φD × L (mm)	Impedance	Rated ripple
680	681	18 × 16.5	0.08	1690						

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.