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

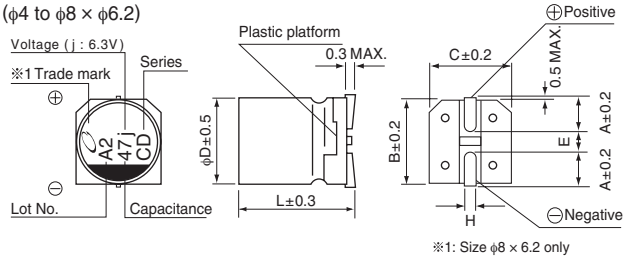
The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.

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.

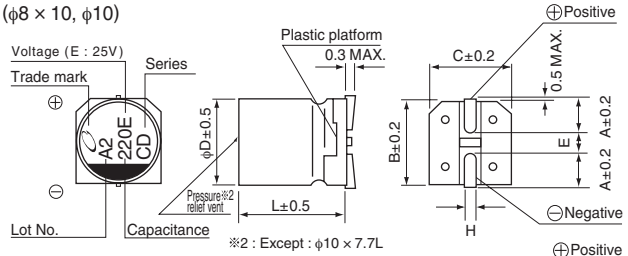
Chip Type

(φ4 to φ8 × φ6.2)



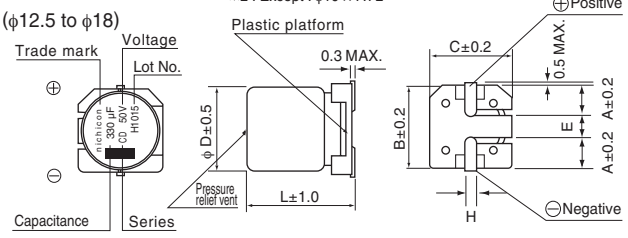
※1: Size φ8 × 6.2 only

(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

(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
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

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

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.

Mouser Electronics

Authorized Distributor

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Nichicon:

UCD0J101MCL6GS UCD0J331MCLGS UCD0J331MCL6GS UCD0J470MCL6GS UCD1A221MCL6GS
UCD1A330MCL6GS UCD1C220MCL6GS UCD1C221MCL6GS UCD1C470MCL6GS UCD1E101MCL6GS
UCD1E330MCL6GS UCD1H100MCL6GS UCD1H330MCL6GS UCD1H470MCL6GS UCD1J220MCL6GS
UCD1K100MCL6GS UCD1V100MCL6GS UCD1V101MCL6GS UCD0J101MCL1GS UCD0J102MNL1GS
UCD0J152MNL1GS UCD0J220MCL1GS UCD0J221MCL1GS UCD0J331MCL1GS UCD0J470MCL1GS
UCD0J471MNL1GS UCD1A102MNL1GS UCD1A151MCL1GS UCD1A220MCL1GS UCD1A221MCL1GS
UCD1A330MCL1GS UCD1A331MNL1GS UCD1A471MNL1GS UCD1A681MNL1GS UCD1C100MCL1GS
UCD1C101MCL1GS UCD1C151MCL1GS UCD1C220MCL1GS UCD1C221MCL1GS UCD1C331MNL1GS
UCD1C470MCL1GS UCD1C471MNL1GS UCD1C681MNL1GS UCD1E100MCL1GS UCD1E101MCL1GS
UCD1E151MNL1GS UCD1E220MCL1GS UCD1E221MNL1GS UCD1E330MCL1GS UCD1E331MNL1GS
UCD1E470MCL1GS UCD1E471MNL1GS UCD1E680MCL1GS UCD1H100MCL1GS UCD1H101MNL1GS
UCD1H151MNL1GS UCD1H220MCL1GS UCD1H221MNL1GS UCD1H330MCL1GS UCD1H4R7MCL1GS
UCD1H470MCL1GS UCD1J100MCL1GS UCD1J101MNL1GS UCD1J220MCL1GS UCD1J330MNL1GS
UCD1J4R7MCL1GS UCD1J470MNL1GS UCD1J680MNL1GS UCD1K100MCL1GS UCD1K220MNL1GS
UCD1K3R3MCL1GS UCD1K330MNL1GS UCD1K4R7MCL1GS UCD1K470MNL1GS UCD1V100MCL1GS
UCD1V101MNL1GS UCD1V151MNL1GS UCD1V220MCL1GS UCD1V221MNL1GS UCD1V330MCL1GS
UCD1V331MNL1GS UCD1V4R7MCL1GS UCD1V470MCL1GS UCD1V471MNQ1MS UCD1V680MCL1GS
UCD1V681MNQ1MS UCD2A101MNQ1MS UCD2A151MNQ1MS UCD2A220MNL1GS UCD2A221MNQ1MS
UCD2A330MNL1GS UCD2A331MNQ1MS UCD2A470MNQ1MS UCD2A680MNQ1MS UCD1H681MNQ1MS
UCD1V331MNQ1GS UCD1E102MNQ1MS UCD1E222MNQ1MS UCD1H331MNQ1MS UCD1H471MNQ1MS