

ALUMINUM ELECTROLYTIC CAPACITORS

CD Chip Type, Low Impedance series



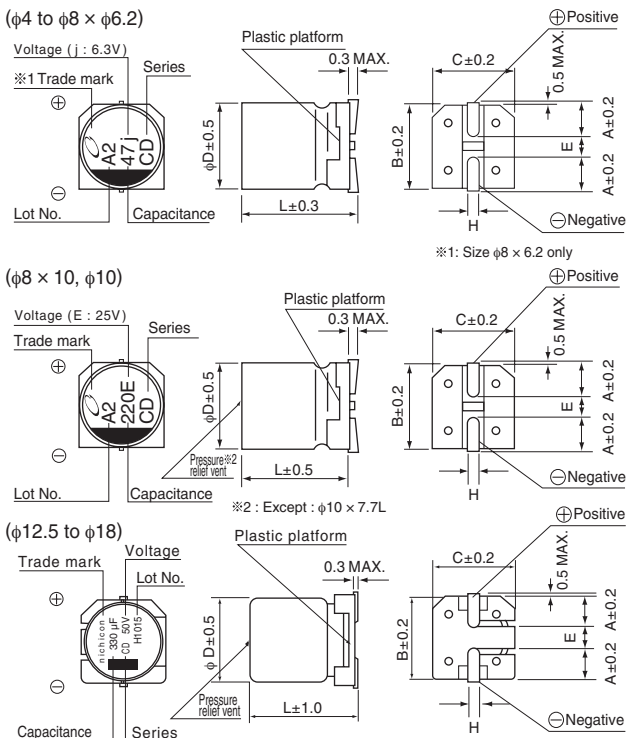
- Chip type, low impedance temperature range up to +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU).



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
	Impedance ratio Z-25°C / Z+20°C	2	2	2	2	2	2	2	2	2
	ZT / Z20 (MAX.)	Z-40°C / Z+20°C	3	3	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								
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								
	Leakage current	Less than or equal to the initial specified value								
Marking	Black print on the case top.									

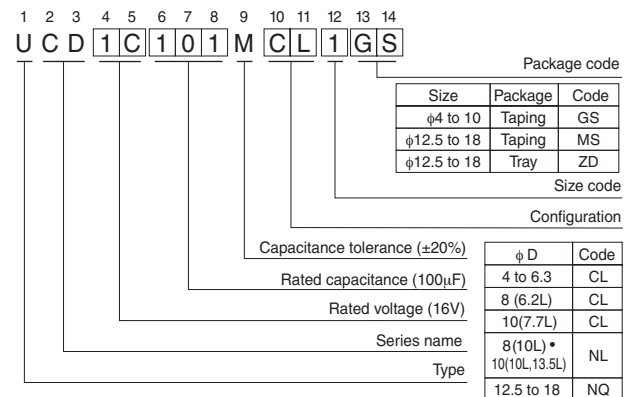
Chip Type



※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)



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	(mm)
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

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Dimensions

Cap. (μF)	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	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									
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 × 5.8	0.36	240	6.3 × 7.7	0.66	195	● 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 × 5.8	0.36	240	6.3 × 7.7	0.66	195	● 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	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	● 10 × 7.7	0.18	600	8 × 10	0.16	600	10 × 10	0.16	700			
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	10 × 10	0.16	700			
330	331	6.3 × 7.7	0.32	290	8 × 10	0.16	600	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	12.5 × 13.5	0.12	900
390	391																								
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	16 × 16.5	0.073	1610			
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	16 × 16.5	0.073	1610			
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												
3300	332	12.5 × 13.5	0.08	1100																					

Cap. (μF)	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 × 6.2	1.20	120	8 × 10	1.30	130	8 × 10	1.30	130												
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 (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.