



Chip Type, Low Impedance
series



For SMD



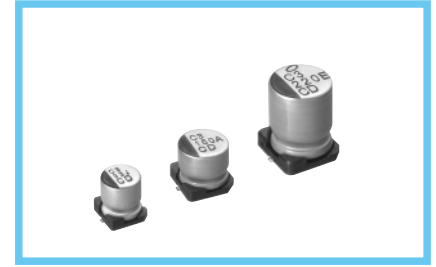
Low Impedance



Anti-Solvent
Feature

- Chip type, low impedance temperature range up to +105°C.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape.
- Adapted to the RoHS directive (2002/95/EC).

CD ← Low Impedance UD

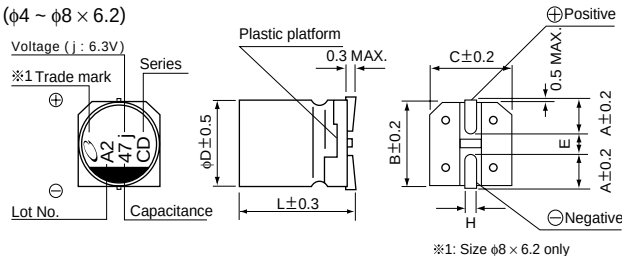


Specifications

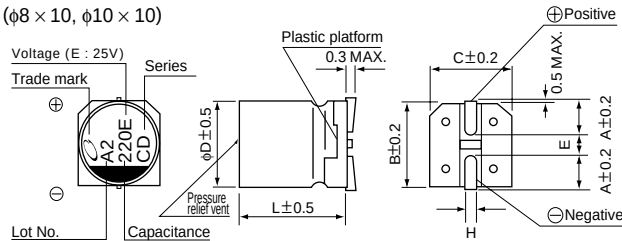
Item	Performance Characteristics										
Category Temperature Range	- 55 ~ +105°C										
Rated Voltage Range	6.3 ~ 100V										
Rated Capacitance Range	1 ~ 3300μF										
Capacitance Tolerance	± 20% at 120Hz, 20°C										
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01 CV or 3 (μA), whichever is greater.										
tan δ	Measurement frequency : 120Hz, Temperature : 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	
	Impeance 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	After 5000 hours' (2000 hours for L < 10 mm: 50V or less, and for L ≤ 10mm: 63V or more) application of rated voltage at 105°C, capacitors meet the characteristics requirements listed at right.				Capacitance Change		Within ± 30% of initial value for capacitors				
					tan δ		200% or less initial specified value 300% or less initial specified value for 63V or more				
					Leakage current		Initial specified value or less				
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.										
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristics requirements listed at right.				Capacitance Change		Within ± 10% of initial value				
					tan δ		Initial specified value or less				
					Leakage current		Initial specified value or less				
Marking	Black print on the case top.										

Chip Type

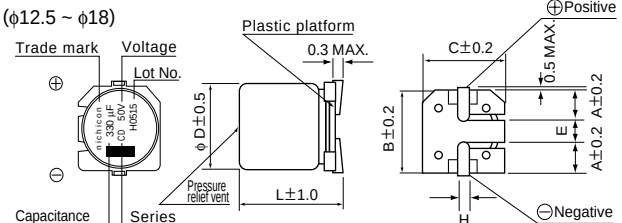
(φ4 ~ φ8 × 6.2)



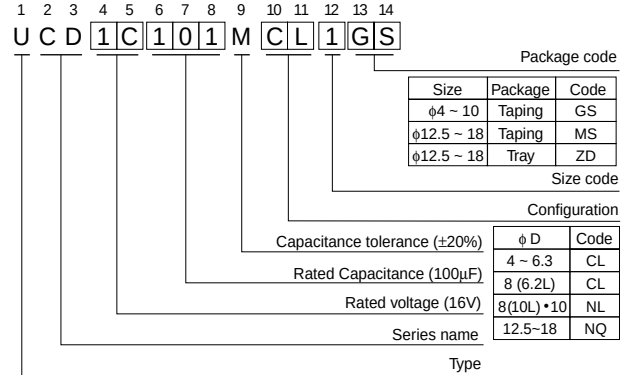
(φ8 × 10, φ10 × 10)



(φ12.5 ~ φ18)



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 × 10
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3
E	1.0	1.3	2.2	2.2	2.3	3.1	4.5
L	5.8	5.8	5.8	7.7	6.2	10	10
H	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.8 ~ 1.1	0.8 ~ 1.1

φD × L	12.5 × 13.5	16 × 16.5	18 × 16.5
A	4.8	5.4	6.4
B	13.6	17.1	19.1
C	13.6	17.1	19.1
E	4.0	6.3	6.3
L	13.5	16.5	16.5
H	1.0 ~ 1.4	1.0 ~ 1.4	1.0 ~ 1.4

Voltage

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

■ Dimensions

V 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 5 × 5.8	1.35 0.70	90 160	● 5 × 5.8	1.50	90 170
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 5 × 5.8	1.35 0.70	90 160	5 × 5.8	0.70	160	5 × 5.8	0.70	160	6.3 × 5.8	0.86	170
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 5 × 5.8	1.35 0.70	90 160	6.3 × 5.8	0.36	240	● 5 × 5.8 6.3 × 5.8	0.70 0.36	160 240	6.3 × 5.8	0.36	240	6.3 × 7.7 ● 8 × 6.2	0.66 0.63	195 200
47	470	● 4 × 5.8 5 × 5.8	1.35 0.70	90 160	6.3 × 5.8	0.36	240	● 5 × 5.8 6.3 × 5.8	0.70 0.36	160 240	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 7.7 ● 8 × 6.2	0.66 0.63	195 200
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 6.3 × 5.8	0.70 0.36	160 240	6.3 × 5.8	0.36	240	6.3 × 5.8	0.36	240	6.3 × 7.7 ● 8 × 6.2	0.32 0.26	290 300	● 6.3 × 7.7 8 × 10	0.32 0.16	290 600	8 × 10	0.32	350
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
220	221	6.3 × 5.8	0.36	240	6.3 × 7.7 ● 8 × 6.2	0.32 0.26	290 300	6.3 × 7.7 ● 8 × 6.2	0.32 0.26	290 300	8 × 10	0.16	600	8 × 10	0.16	600	10 × 10	0.16	700
330	331	6.3 × 7.7 ● 8 × 6.2	0.32 0.26	290 300	8 × 10	0.16	600	8 × 10	0.16	600	8 × 10	0.16	600	10 × 10	0.08	850	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	12.5 × 13.5	0.08	1100	16 × 16.5	0.073	1610
680	681	8 × 10	0.16	600	10 × 10	0.08	850	10 × 10	0.08	850				12.5 × 13.5	0.08	1100	16 × 16.5	0.073	1610
1000	102	8 × 10	0.16	600	10 × 10	0.08	850				12.5 × 13.5	0.08	1100	16 × 16.5	0.035	1800			
1500	152	10 × 10	0.08	850				12.5 × 13.5	0.08	1100									
2200	222				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															

V 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 ● 8 × 6.2	2.40 2.40	60 60			
22	220	6.3 × 7.7 ● 8 × 6.2	1.20 1.20	120 120	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 (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~
Coefficient	0.35	0.50	0.64	0.83	1.00

- Taping specifications are given in page 24.
- Recommended land size, soldering by reflow are given in page 25, 26.
- Please refer to page 3 for the minimum order quantity.