



Chip Type, Low Impedance

series



For SMD

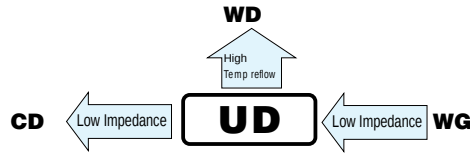


Low Impedance



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).

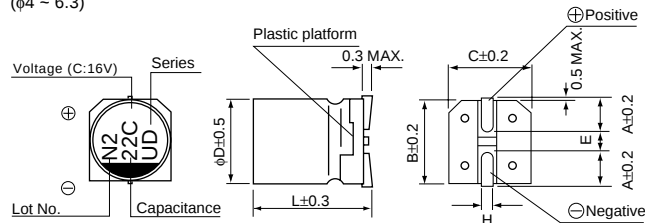


Specifications

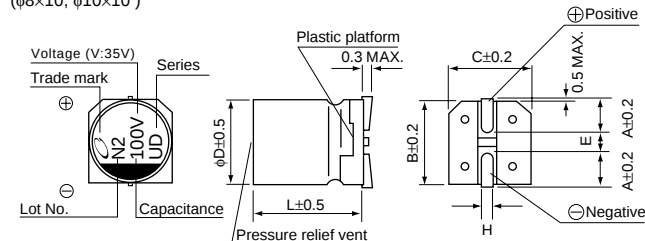
Item	Performance Characteristics							
Category Temperature Range	-55 ~ +105°C							
Rated Voltage Range	6.3 ~ 50V							
Rated Capacitance Range	1 ~ 1500μF							
Capacitance Tolerance	±20% at 120Hz, 20°C							
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not 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	() is φ8 over
	tan δ (MAX.)	0.26 (0.28)	0.20 (0.24)	0.16 (0.20)	0.14 (0.16)	0.12 (0.14)	0.12 (0.14)	
Stability at Low Temperature	Measurement frequency : 120Hz							
	Rated voltage (V)		6.3	10	16	25	35	50
	Impedance ratio ZT / Z20 (MAX.)	Z-25°C / Z+20°C	3	2	2	2	2	2
		Z-55°C / Z+20°C	5	4	4	3	3	3
Endurance	After 5000 hours' (2000 hours for φD ≤6.3) application of rated voltage at 105°C , capacitors meet the characteristic requirements listed at right.				Capacitance change		Within ±30% of initial value	
					tan δ		200% or less of initial specified value	
					Leakage current		Initial specified value or less	
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they 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 characteristic 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

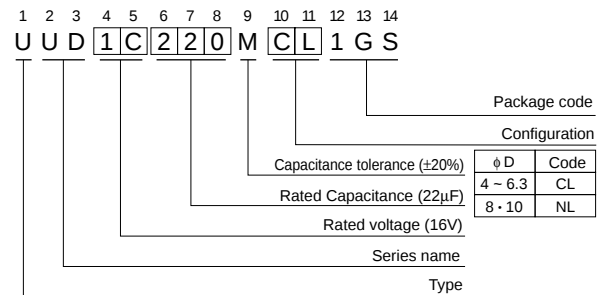
(φ4 ~ 6.3)



(φ8×10, φ10×10)



Type numbering system (Example : 16V 22μF)



	(mm)					
φD × L	4 × 5.8	5 × 5.8	6.3 × 5.8	6.3 × 7.7	8 × 10	10 × 10
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.8	5.8	5.8	7.7	10	10
H	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.8 ~ 1.1	0.8 ~ 1.1

Voltage

V	6.3	10	16	25	35	50
Code	j	A	C	E	V	H

● Dimension table in next page.



■ Dimensions

φ D × L (mm)

Cap. (μF)	V	Code	6.3			10			16			25			35			50		
			0J			1A			1C			1E			1V			1H		
1	010																	4×5.8	5.00	30
2.2	2R2																	4×5.8	5.00	30
3.3	3R3																	4×5.8	5.00	30
4.7	4R7														4×5.8	1.80	80	5×5.8	1.52	85
10	100											4×5.8	1.80	80	5×5.8	0.76	150	6.3×5.8	0.88	165
15	150								4×5.8	1.80	80	5×5.8	0.76	150	5×5.8	0.76	150	6.3×5.8	0.88	165
22	220					4×5.8	1.80	80	5×5.8	0.76	150	5×5.8	0.76	150	5×5.8	0.76	150	6.3×5.8	0.88	165
27	270		4×5.8	1.80	80	5×5.8	0.76	150	5×5.8	0.76	150	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.68	185
33	330		5×5.8	0.76	150	5×5.8	0.76	150	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.68	185
47	470		5×5.8	0.76	150	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.68	185
56	560		5×5.8	0.76	150	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.34	280	8×10	0.34	300
68	680		6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.34	280	8×10	0.34	300
100	101		6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.34	280	8×10	0.17	450	8×10	0.34	300
150	151		6.3×5.8	0.44	230	6.3×5.8	0.44	230	6.3×7.7	0.34	280	8×10	0.17	450	8×10	0.17	450	10×10	0.18	670
220	221		6.3×5.8	0.44	230	6.3×7.7	0.34	280	6.3×7.7	0.34	280	8×10	0.17	450	8×10	0.17	450	10×10	0.18	670
330	331		6.3×7.7	0.34	280	8×10	0.17	450	8×10	0.17	450	8×10	0.17	450	10×10	0.09	670			
470	471		8×10	0.17	450	8×10	0.17	450	8×10	0.17	450	10×10	0.09	670						
680	681		8×10	0.17	450	10×10	0.09	670	10×10	0.09	670									
1000	102		8×10	0.17	450	10×10	0.09	670										Case size	Impedance	Rated ripple
1500	152		10×10	0.09	670															

Max. impedance (Ω) at 20°C 100kHz, Rated Ripple (mA rms) at 105°C 100kHz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz~
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
- Please refer to page 3 for the minimum order quantity.