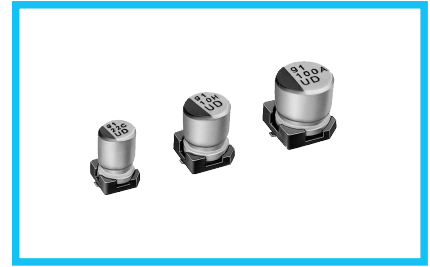
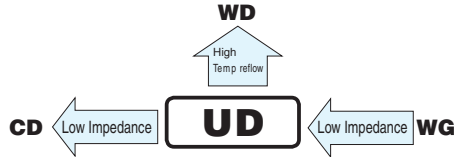


ALUMINUM ELECTROLYTIC CAPACITORS

UD series Chip Type, Low Impedance



- 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).

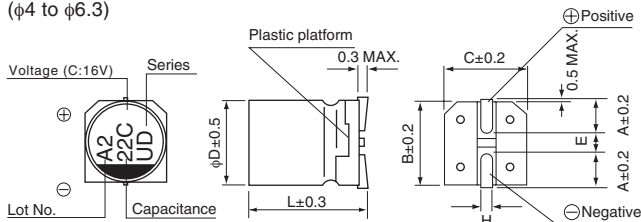


Specifications

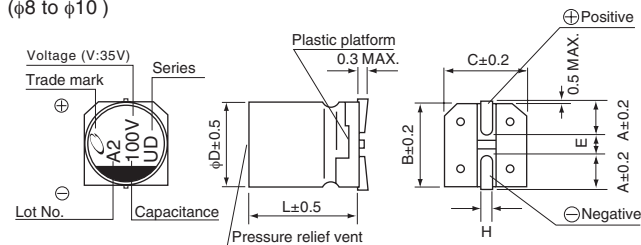
Item	Performance Characteristics																							
Category Temperature Range	-55 to +105°C																							
Rated Voltage Range	6.3 to 50V																							
Rated Capacitance Range	1 to 1500μF																							
Capacitance Tolerance	±20% at 120Hz, 20°C																							
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01 CV or 3 (μA), whichever is greater.																							
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C																							
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td></td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.26 (0.28)</td> <td>0.20 (0.24)</td> <td>0.16 (0.20)</td> <td>0.14 (0.16)</td> <td>0.12 (0.14)</td> <td>0.12 (0.14)</td> <td>() is φ8 over</td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50		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)	() is φ8 over							
Rated voltage (V)	6.3	10	16	25	35	50																		
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)	() is φ8 over																	
Stability at Low Temperature	Measurement frequency : 120Hz																							
	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td></td> </tr> <tr> <td>Impedance ratio Z_{-25°C} / Z_{+20°C}</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td></td> </tr> <tr> <td>ZT / Z20 (MAX.)</td> <td>5</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td></td> </tr> </table>	Rated voltage (V)	6.3	10	16	25	35	50		Impedance ratio Z _{-25°C} / Z _{+20°C}	3	2	2	2	2	2		ZT / Z20 (MAX.)	5	4	4	3	3	3
Rated voltage (V)	6.3	10	16	25	35	50																		
Impedance ratio Z _{-25°C} / Z _{+20°C}	3	2	2	2	2	2																		
ZT / Z20 (MAX.)	5	4	4	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 φD = 4, 5 and 6.3) at 105°C.																							
	Capacitance change	Within ±30% of the initial capacitance value																						
	tan δ	200% or less than 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.																							
	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	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

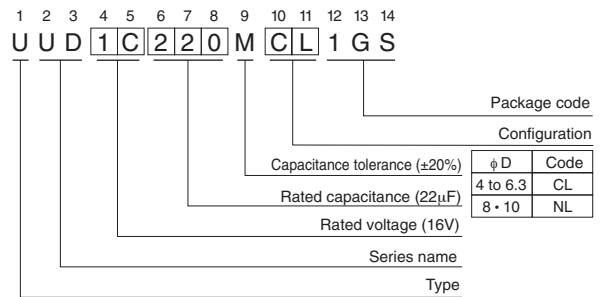
(φ4 to φ6.3)



(φ8 to φ10)



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 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

Voltage

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

• Dimension table in next page.



■ Dimensions

Cap. (μ F)	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												
1500	152	10 × 10	0.09	670															

Max. Impedance (Ω) at 20°C 100kHz,
 Rated ripple current (mA_{rms}) at 105°C 100kHz

● Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz 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.