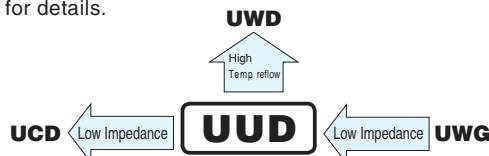


UUD

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).
- AEC-Q200 compliant. Please contact us for details.

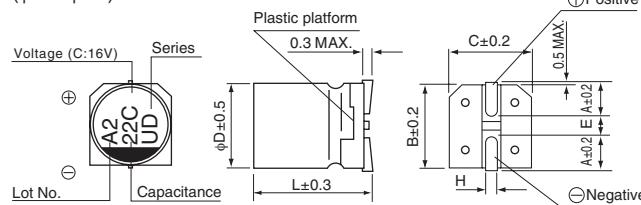


■ Specifications

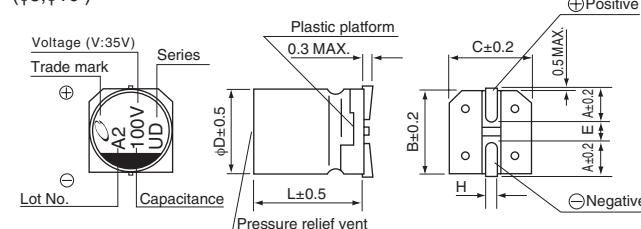
Item	Performance Characteristics																										
Category Temperature Range	-55 to +105°C																										
Rated Voltage Range	6.3 to 50V																										
Rated Capacitance Range	1 to 1500μF																										
Capacitance Tolerance	±20% at 120Hz, 20°C																										
Leakage Current	After 2 minutes' application of rated voltage at 20°C, 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> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </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> </tr> </table> () 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)							
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)																					
Stability at Low Temperature	Measurement frequency : 120Hz <table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </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> </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> </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																						
				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																						
Marking	Black print on the case top.																										

■ Chip Type

(φ4 to φ6.3)



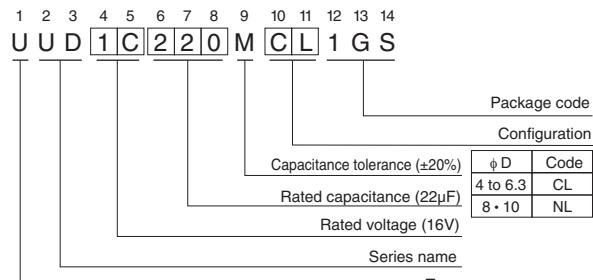
(φ8,φ10)



Voltage

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

Type numbering system (Example : 16V 22μF)



φD x L	4 x 5.8	5 x 5.8	6.3 x 5.8	6.3 x 7.7	8 x 10	10 x 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

● Dimension table in next page.

UUD

■ Dimensions

Cap. (μ F)	V	6.3		10		16		25		35		50	
		Code	0J	Code	1A	Code	1C	Code	1E	Code	1V	Code	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 5.00 30
10	100									4 × 5.8 1.80 80	5 × 5.8 0.76 150	5 × 5.8 0.76 150	5 × 5.8 1.52 85
15	150							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	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	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	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	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 × 5.8 0.44 230	6.3 × 7.7 0.68 185	6.3 × 7.7 0.68 185	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 × 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	6.3 × 7.7 0.68 185	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 × 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	6.3 × 7.7 0.68 185	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 × 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	8 × 10 0.34 300	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 × 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	8 × 10 0.34 300	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 × 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 0.17 450	8 × 10 0.17 450	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 × 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 × 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	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	6.3 × 7.7 0.34 280	6.3 × 7.7 0.34 280	6.3 × 7.7 0.34 280	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	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	8 × 10 0.17 450	8 × 10 0.17 450	8 × 10 0.17 450	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670
470	471	8 × 10 0.17 450	8 × 10 0.17 450	8 × 10 0.17 450	8 × 10 0.17 450	8 × 10 0.17 450	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670
680	681	8 × 10 0.17 450	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670
1000	102	8 × 10 0.17 450	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670	10 × 10 0.09 670
1500	152	10 × 10 0.09 670											Case size Φ D × L (mm)
													Rated Impedance ripple

Max. Impedance (Ω) at 20°C 100kHz,
Rated ripple current (mArms) 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.

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