ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

WD Chip Type, Low Impedance
High Temperature (260°C) Reflow
series

For SMD | Low Impedance | Anti-Solvent Feature

- Corresponding with 260°C peak reflow soldering
  Recomended reflow condition : 260°C peak 5 sec. 230°C over 60 sec.
  2 times (φ10 × 10 : 1 time)
- 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).

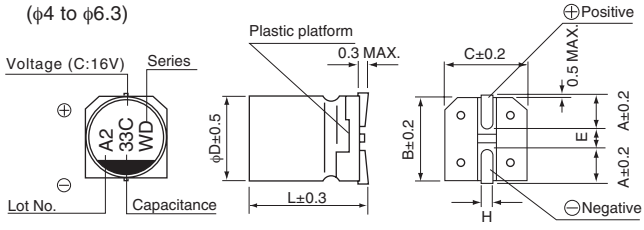
WD
High Temperature Reflow
UD

■Specifications

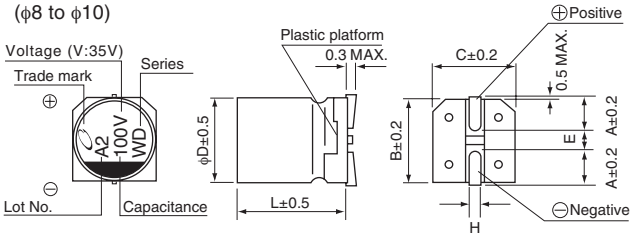
Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	1 to 1500μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01 CV or 3 (μA), whichever is greater.
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C 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 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	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 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)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	W	D	1	C	2	2	0	M	C	L	1	G	S

- Package code
- Configuration
- Capacitance tolerance (±20%)
- Rated capacitance (22 μF)
- Rated voltage (16V)
- Series name
- Type

(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.

WD series

■Dimensions

Cap. (μF) \ V	6.3			10			16			25			35			50		
Code	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	10×10	0.09	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	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	10×10	0.09	670						
680	681	8×10	0.17	450	10×10	0.09	670	10×10	0.09	670									
1000	102	10×10	0.09	670	10×10	0.09	670										Case size φD×L (mm)	Impedance	Rated ripple
1500	152	10×10	0.09	670															

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.