ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

WS Chip Type, High CV
High Temperature (260°C) Reflow
series

For SMD | 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
  (φ8 × 6.2, φ10 × 10 : 1 time)
- Chip type higher capacitance in large case size.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU).

WS
High Temperature Reflow
UR

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +85°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	22 to 1500μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV (μA) .
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.)	0.28	0.24	0.20	0.16	0.14	0.12

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	5	4	3	2	2	2
	Z−40°C / Z+20°C	10	8	6	4	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 2000 hours at 85°C.

Capacitance change	Within ±20% 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 85°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.

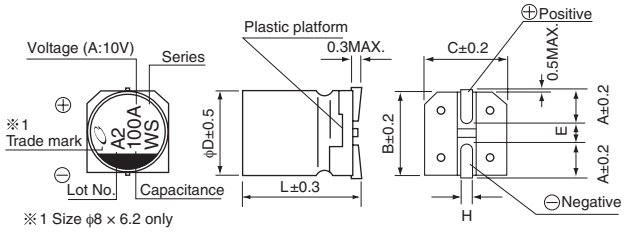
Capacitance change	Within ±10% of the initial capacitance value
tan δ	Less than or equal to the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking

Black print on the case top.

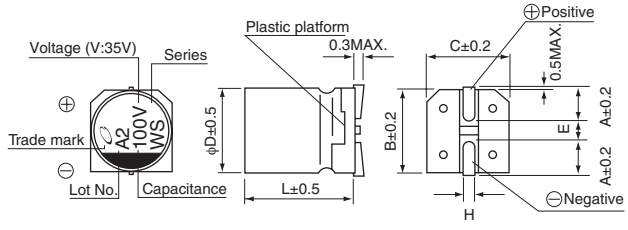
■Chip Type

(φ6.3, φ8 × 6.2)



※1 Size φ8 × 6.2 only

(φ8 × 10, φ10 × 10)



Voltage

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

Type numbering system (Example : 10V 100μF)

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

- 1–3: Type
- 4–5: Series name
- 6–8: Rated voltage (10V)
- 9: Rated capacitance (100μF)
- 10–11: Capacitance tolerance (±20%)
- 12–13: Configuration
- 14: Package code

(mm)

φD×L	6.3 × 5.8	6.3 × 7.7	8 × 6.2	8 × 10	10 × 10
A	2.4	2.4	3.3	2.9	3.2
B	6.6	6.6	8.3	8.3	10.3
C	6.6	6.6	8.3	8.3	10.3
E	2.2	2.2	2.3	3.1	4.5
L	5.8	7.7	6.2	10	10
H	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.

WS series

■Dimensions

Cap. (μF) \ V / Code	6.3		10		16		25		35		50	
	0J		1A		1C		1E		1V		1H	
22	220										6.3 × 5.8	45
33	330								6.3 × 5.8	55	8 × 6.2	95
47	470						6.3 × 5.8	65	8 × 6.2	105	8 × 10	140
100	101		6.3 × 5.8	70	8 × 6.2	125	8 × 6.2	145	8 × 10	175	10 × 10	195
150	151		6.3 × 5.8	85	6.3 × 7.7	151	8 × 10	192	8 × 10	214	10 × 10	238
220	221	8 × 6.2	160	8 × 6.2	175	8 × 10	215	10 × 10	250	10 × 10	265	10 × 10	289
330	331	8 × 6.2	190	8 × 10	240	8 × 10	270	10 × 10	305	10 × 10	324		
470	471	8 × 10	265	8 × 10	290	10 × 10	330	10 × 10	393				
680	681	8 × 10	318	10 × 10	374	10 × 10	396						
1000	102	10 × 10	400	10 × 10	454							Case size φD × L (mm)	Rated ripple
1500	152	10 × 10	489										

Rated ripple current (mArms) at 85°C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF) \ Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Less than 47	0.80	1.00	1.15	1.40	1.67
100 to 1500	0.85	1.00	1.08	1.20	1.30

- 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.