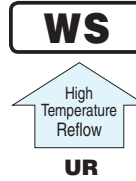


# ALUMINUM ELECTROLYTIC CAPACITORS

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



- Corresponding with 260°C peak reflow soldering  
Recommended 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).

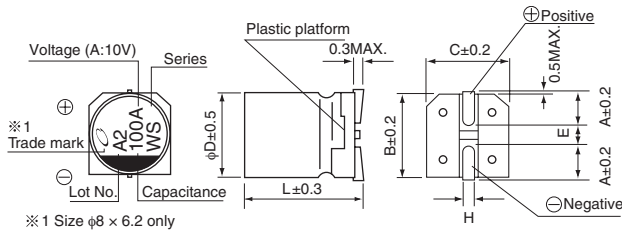


## Specifications

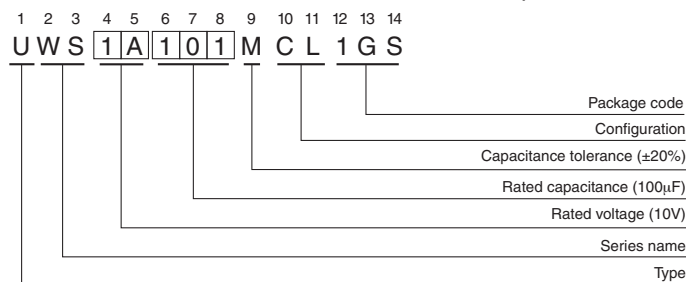
Item	Performance Characteristics						
Category Temperature Range	-40 to +85°C						
Rated Voltage Range	6.3 to 50V						
Rated Capacitance Range	22 to 1500μF						
Capacitance Tolerance	±20% at 120Hz, 20°C						
Leakage Current	After 1 minute's application of rated voltage, leakage current is not more 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
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
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

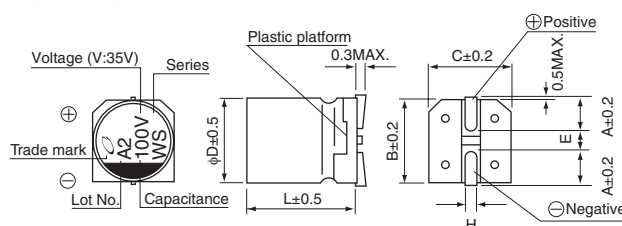
(φ6.3, φ8 × 6.2)



Type numbering system (Example : 10V 100μF)



(φ8 × 10, φ10 × 10)



φD×L	(mm)				
	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

## Voltage

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

- Dimension table in next page.

### ■ Dimensions

Cap. (μF)	Code	V		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										
1500	152	10 × 10	489											Case size φ D × L (mm)	Rated ripple

Rated ripple current (mA<sub>RMS</sub>) 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.