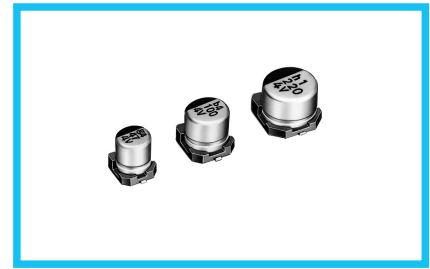
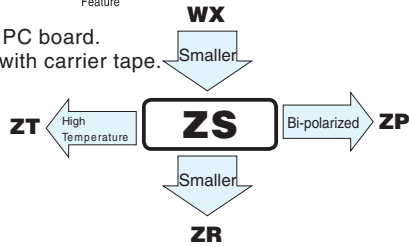


ALUMINUM ELECTROLYTIC CAPACITORS

ZS 4.5mmL Chip Type
series



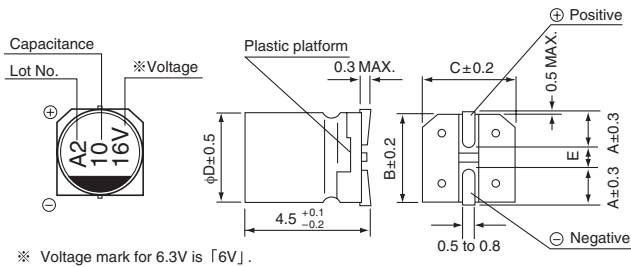
- Chip type with 4.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU).



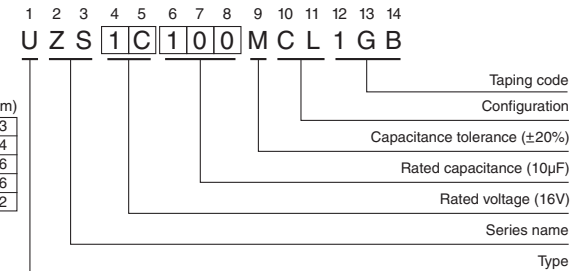
Specifications

Item	Performance Characteristics								
Category Temperature Range	-40 to + 85°C								
Rated Voltage Range	4 to 50V								
Rated Capacitance Range	0.1 to 220μF								
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)	4	6.3	10	16	25	35	50	
Stability at Low Temperature	Measurement frequency : 120Hz								
	Rated voltage (V)	4	6.3	10	16	25	35	50	
Endurance	Impedance ratio	Z-25°C / Z+20°C	7	4	3	2	2	2	
	ZT / Z20 (MAX.)	Z-40°C / Z+20°C	15	8	8	4	4	3	
Shelf Life	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
Resistance to soldering heat			Leakage current						Less than or equal to the initial specified value
			Capacitance change						Within ±10% of the initial capacitance value
Marking			tan δ						Less than or equal to the initial specified value
			Leakage current						Less than or equal to the initial specified value

Chip Type



Type numbering system (Example : 16V 10μF)



Dimensions

Cap. (μF)	Code	4		6.3		10		16		25		35		50	
		0G	0J	1A	1C	1E	1V	1H							
0.1	0R1													4	1.0
0.22	R22													4	2.0
0.33	R33													4	2.8
0.47	R47													4	4.0
1	010													4	8.4
2.2	2R2													4	13
3.3	3R3													4	17
4.7	4R7									4	16	4	18	5	20
10	100							4	23	5	27	5	29	6.3	33
22	220		4	28	5	33	5	37	6.3	42	6.3	46			
33	330	4	28	5	37	5	41	6.3	49	6.3	52				
47	470	4	33	5	45	6.3	52	6.3	58						
100	101	5	56	6.3	70										
220	221	6.3	96												

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

Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please select UR(p.150), UG(p.158) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.

CAT.8100D

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