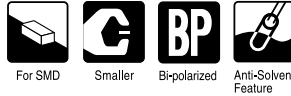
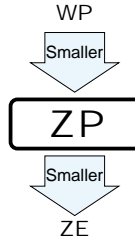


ZP series 4.5mmL Chip Type, Bi-Polarized



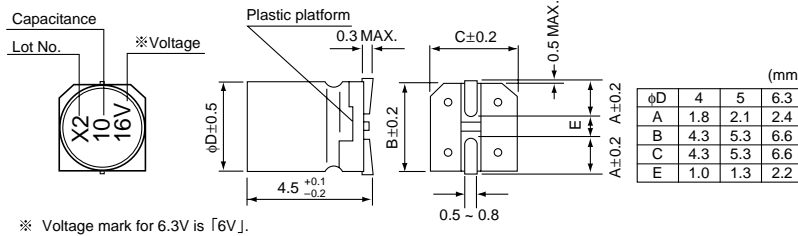
- Chip type with 4.5mm height.
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape.
- Adapted to the RoHS directive (2002/95/EC).



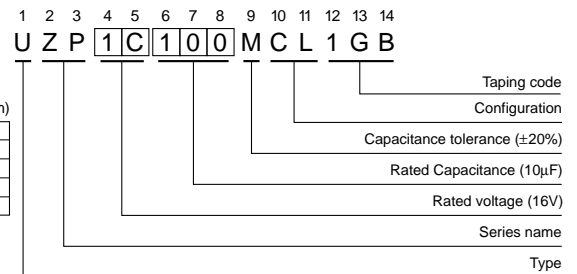
Specifications

Item	Performance Characteristics					
Category Temperature Range	-40 ~ +85°C					
Rated Voltage Range	6.3 ~ 50V					
Rated Capacitance Range	0.1 ~ 47μF					
Capacitance Tolerance	±20% at 120Hz, 20°C					
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.05 CV or 10 (μA), whichever is greater.					
tan δ	Measurement frequency : 120Hz, Temperature : 20°C					
	Rated voltage (V)	6.3	10	16	25	35
Stability at Low Temperature	Measurement frequency : 120Hz					
	Impedance ratio	Z-25°C / Z+20°C	4	3	2	2
Endurance	After 2000 hours' application of rated voltage at 85°C with the polarity inverted every 250 hours, capacitors meet the characteristic requirements listed at right.					
	Capacitance change	Within ±20% of initial value				
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.					
	tan δ	300% or less of initial specified value				
Resistance to soldering heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed at right.					
	Leakage current	Initial specified value or less				
Marking	Black print on the case top.					

Chip Type



Type numbering system (Example : 16V 10μF)



Dimensions

Cap. (μF)	Code	V		6.3		10		16		25		35		50	
		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	8.4	5	13
3.3	3R3								5	12	5	16	5	17	
4.7	4R7							4	12	5	16	5	18	6.3	20
10	100			4	17	5	23	6.3	27	6.3	29				
22	220	5	28	6.3	33	6.3	37								
33	330	6.3	37	6.3	41	6.3	49								
47	470	6.3	45												

Case size φD (mm) Rated ripple

Rated Ripple (mArms) at 85°C 120Hz

Frequency coefficient of rated ripple current

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

- Taping specifications are given in page 24.
- Recommended land size, soldering by reflow are given in page 25, 26.
- Please select WP(p.47), UN(p.77) series if high C/V products are required.
- Please refer to page 3 for the minimum order quantity.