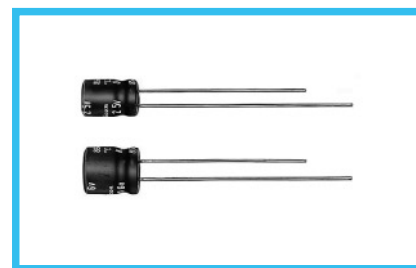


**SP** 7mmL, Bi-Polarized  
series



- Bi-polarized series with 7mm height.
- Extended capacitance range by an addition of  $\phi 8$  product.
- Compliant to the RoHS directive (2002/95/EC).

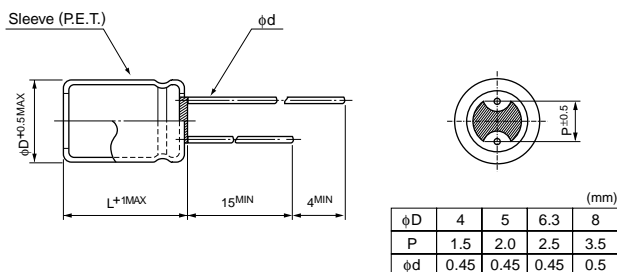
SP ← Bi-polarized SA



## Specifications

Item	Performance Characteristics													
Category Temperature Range	−40 to +85°C													
Rated Voltage Range	6.3 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 0.05CV or 10 (μA), whichever is greater.													
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz, Temperature : 20°C													
	Rated voltage (V)	6.3	10	16	25	35	50							
	tan δ (MAX.)	0.24	0.20	0.16	0.16	0.14	0.12							
Stability at Low Temperature	Measurement frequency : 120 Hz													
	Rated voltage (V)		6.3	10	16	25	35	50						
	Impedance ratio	Z−25°C / Z+20°C	4	3	2	2	2	2						
	ZT / Z20 (MAX.)	Z−40°C / Z+20°C	8	6	4	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 with the polarity inverted every 250 hours.													
								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.													
Marking	Printed with white color letter on black sleeve.													

## Radial Lead Type



## Type numbering system (Example : 10V 33 $\mu$ F)

1	2	3	4	5	6	7	8	9	10	11
U	S	P	1	A	3	3	0	M	D	D
								Configuration※		
								Capacitance tolerance (±20%)		
								Rated capacitance (33μF)		
								Rated voltage (10V)		
								Series name		
								Type		
※ Configuration										
φ D				Pb-free leadwire Pb-free PET sleeve						
4 to 8				DD						

## Dimensions

V	6.3	10	16	25	35	50
Cap. ( $\mu$ F)	0J	1A	1C	1E	1V	1H
0.1	0R1					4 × 7
0.22	R22					4 × 7
0.33	R33					4 × 7
0.47	R47					4 × 7
1	010					4 × 7
2.2	2R2					4 × 7
3.3	3R3					4 × 7
4.7	4R7					4 × 7
10	100	4 × 7	24	5 × 7	18	5 × 7
22	220	5 × 7	40	6.3 × 7	30	6.3 × 7
33	330	5 × 7	42	6.3 × 7	35	6.3 × 7
47	470	6.3 × 7	58	6.3 × 7	40	6.3 × 7
100	101	8 × 7	95	8 × 7	50	8 × 7
220	221	8 × 7	140			

## 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

Rated ripple current (mA rms) at 85°C 120Hz

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.

CAT.8100Z