

## FEATURES

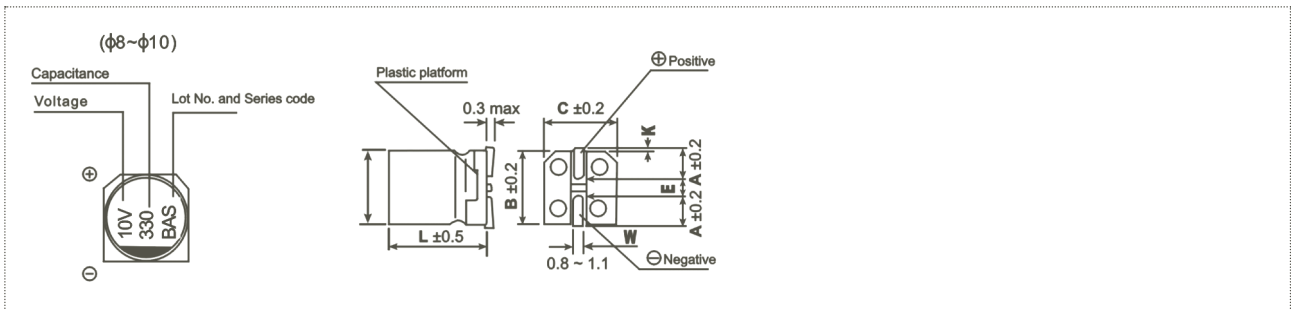
- Designed for surface mounting on high-density circuit board.
- Emboss carrier tape packing system is available for automatic insertion.



## SPECIFICATIONS

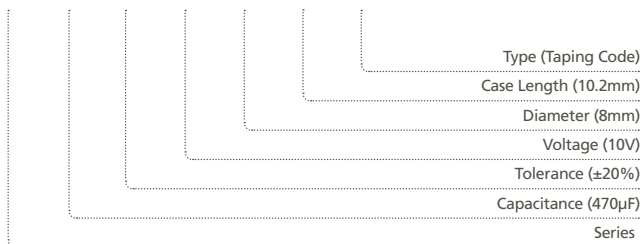
Item	Performance Characteristics	
Operating Temperature Range	-40 to +85°C	
Rated Working Voltage Range	6.3 to 100V	
Nominal Capacitance Range	4.7 to 1500μF	
Capacitance Tolerance	±20% at 120Hz, +20°C	
Leakage Current	$I \leq 0.01CV$ or 3 (μA) whichever is greater measured after 2 minutes application of rated working voltage at +20°C	
tan δ (120Hz, +20°C)	The values shown in the STANDARD RATINGS tables	
Low Temperature Characteristics	Measurement frequency: 120Hz	
	Working Voltage (V)	6.3    10    16    25    35    50    63    100
	Z-25°C / Z+20°C	4    3    2    2    2    2    3    3
	Z-40°C / Z+20°C	8    6    4    4    3    3    4    4
Load Life	After apply rated voltage for 2,000 hours at +85°C ±2°C and then being stabilized at +20%, capacitor shall meet the following limits Capacitance change : ±20% of the initial measured value tan δ : ≤200% of the initial specified value DC leakage current : ≤initial specified value	
Shelf Life	After storage 1,000 hours at +85°C ±2°C with no voltage applied and then being stabilized at +20°C, they meet the specified value life characteristics listed above	
Resistance to Soldering Heat	After reflow soldering and then being stabilized at +20°C, the capacitor shall meet the following limits. Capacitance change : ±10% of the initial measured value tan δ : ≤initial specified value DC leakage current : ≤initial specified value	
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)	

## CHIP TYPE



## PART NUMBER SYSTEM (EXAMPLE : 10V 470μF)

1 2 3	4 5 6	7	8 9	10	11 12	13 14
VSS	477	M	1A	F	T2	TR



**STANDARD RATINGS**

D	L	B, C	A	W	E	K
8.0	10.2	8.3	2.95	0.09 ± 0.2	3.1	0.70-0.40 to +0.20
10.0	10.2	10.3	3.2	0.09 ± 0.2	4.6	0.70-0.40 to +0.20

Unit: mm

Voltage (Code)		6.3V (0J)			10V (1A)		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
330	337				8 x 10.2	0.26	390
470	477	8 x 10.2	0.35	380	8 x 10.2	0.26	390
1000	108	8 x 10.2	0.35	500	10 x 10.2	0.26	580
1500	158	10 x 10.2	0.35	750			

Maximum Allowable Ripple Current (mArms) at 85°C 120Hz

Case Size ΦD x L (mm)

tan δ at 20°C 120Hz

Voltage (Code)		16V (1C)			25V (1E)			35V (1V)		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
100	107							8 x 10.2	0.14	140
220	227				8 x 10.2	0.16	230	8 x 10.2	0.14	200
330	337	8 x 10.2	0.20	320	8 x 10.2	0.16	270	10 x 10.2	0.14	350
470	477	8 x 10.2	0.20	350	10 x 10.2	0.16	380			

Maximum Allowable Ripple Current (mArms) at 85°C 120Hz

Case Size ΦD x L (mm)

tan δ at 20°C 120Hz

Voltage (Code)		50V (1H)			63V (1J)			100V (2A)		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
4.7	475							8 x 10.2	0.18	80
10	106							8 x 10.2	0.18	85
22	226				8 x 10.2	0.18	40	8 x 10.2	0.18	87
33	336				8 x 10.2	0.18	45	10 x 10.2	0.18	90
47	476				8 x 10.2	0.18	45			
100	107	8 x 10.2	0.12	200	10 x 10.2	0.18	60			
220	227	10 x 10.2	0.12	300						

Maximum Allowable Ripple Current (mArms) at 85°C 120Hz

Case Size ΦD x L (mm)

tan δ at 20°C 120Hz

\* Other voltage, capacitance, dimension are also available upon request.

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.