

FEATURES

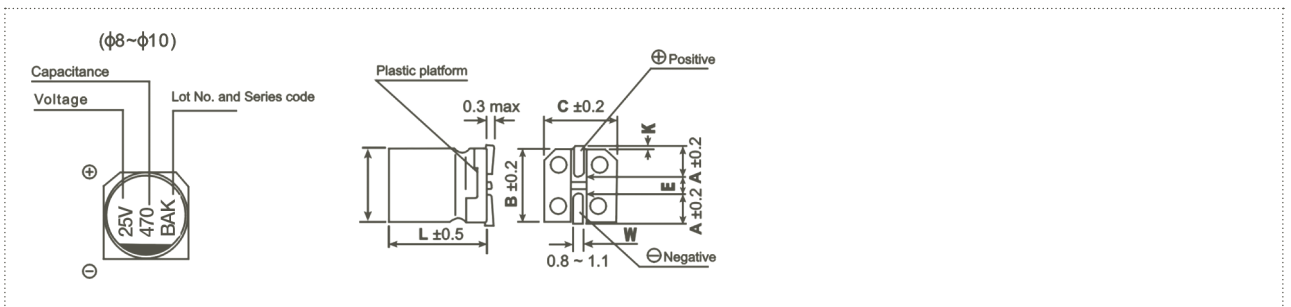
- Chip type operating over wide temperature range -40 to +105°C.
- Designed for surface mounting on high-density circuit board.
- Emboss carrier tape packing system is available for automatic insertion.



SPECIFICATIONS

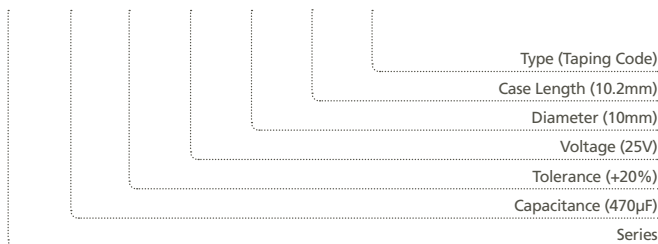
Item	Performance Characteristics	
Operating Temperature Range	-40 to +105°C	
Rated Working Voltage Range	6.3 to 100V	
Nominal Capacitance Range	4.7 to 1500μF	
Capacitance Tolerance	±20% at 120Hz, +20°C	
Leakage Current	I ≤ 0.01CV or 3 (μA) whichever is greater measured after 2 minutes application of 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 applying rated voltage for 1,000 hours at +105°C ±2°C and then being stabilized at +20°C, capacitors shall meet the following limits Cap. change : ±20% of the initial measured value (6.3 W.V. of miniature : ±30%) tan δ : ≤200% of the initial specified value DC leakage current : ≤initial specified value	
Shelf Life	After 1,000 hours at +105°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 capacitors shall meet the following limits Cap. 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 : 25V 470μF)

1 2 3	4 5 6	7	8 9	10	11 12	13 14
VKS	477	M	1E	G	T2	TR



STANDARD RATINGS

D	L	B, C	A	W	E	K
8.0	10.2	8.3	2.95	0.90 ± 0.2	3.1	0.70-0.40 to +0.20
10.0	10.2	10.3	3.2	0.90 ± 0.2	4.6	0.70-0.40 to +0.20

Unit: mm

Voltage (Code)		6.3 (0J)			10V (1A)			16V (1C)		
Cap. (µF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
220	227							8 x 10.2	0.20	150
330	337				8 x 10.2	0.26	196	8 x 10.2	0.20	170
470	477	8 x 10.2	0.35	300	8 x 10.2	0.26	200	8 x 10.2	0.20	340
680	687							10 x 10.2	0.20	380
1000	108	8 x 10.2	0.35	300	10 x 10.2	0.26	400			
1500	158	10 x 10.2	0.35	480						

Maximum Allowable Ripple Current (mArms) at 105°C 120Hz

Case Size ΦD x L (mm)

tan δ at 20°C 120Hz

Voltage (Code)		25V (1E)			35V (1V)			50V (1H)		
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	120	8 x 10.2	0.12	110
220	227	8 x 10.2	0.16	160	8 x 10.2	0.14	170	10 x 10.2	0.12	150
330	337	8 x 10.2	0.16	180	10 x 10.2	0.14	250			
470	477	10 x 10.2	0.16	360						

Maximum Allowable Ripple Current (mArms) at 105°C 120Hz

Case Size ΦD x L (mm)

tan δ at 20°C 120Hz

Voltage (Code)		63V (1J)			100V (2A)		
Cap. (µF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
4.7	475				8 x 10.2	0.18	50
10	106				8 x 10.2	0.18	55
22	226	8 x 10.2	0.18	30	8 x 10.2	0.18	55
33	336	8 x 10.2	0.18	36	10 x 10.2	0.18	65
47	476	10 x 10.2	0.18	50	10 x 10.2	0.18	65

Maximum Allowable Ripple Current (mArms) at 105°C 120Hz

Case Size ΦD x L (mm)

tan δ at 20°C 120Hz

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