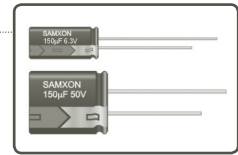


FEATURES

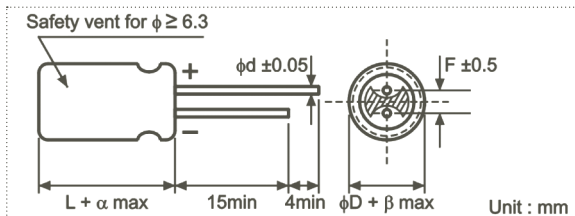
- Low impedance for high frequency.
- Long life: 3,000~6,000 hours at 105°C.



SPECIFICATIONS

Item	Performance Characteristics									
Operating Temperature Range	-40 to +105°C									
Rated Working Voltage Range	6.3 to 100V									
Nominal Capacitance Range	15 to 3900µF									
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)	Working Voltage (V)	6.3	10	16	25	35	50	63	100	
	tan δ (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	
	For capacitance value >1000µF, add 0.02 per another 1000µF									
Low Temperature Characteristics	Impedance ratio max. at 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	2	2	2
	Z-40°C / Z+20°C	8	6	4	3	3	3	3	3	
High Temperature Loading	Test time	ϕD	5-6.3	8	10	12.5	Post test requirements at +20°C			
	Load life		3,000h	4,000h	5,000h	6,000h	Leakage current : ≤Initial specified value			
	Test temperature		+105°C				Cap. change : within ±25% of the initial measured value			
	Test conditions		Rated DC working voltage with rated ripple current				tan δ : ≤200% of the initial specified value			
Shelf Life	At +105°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits									
	Leakage current	: ≤Initial specified value								
	Cap. change	: within ±25% of the initial measured value								
	tan δ	: ≤200% of the initial specified value								
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)									

CASE SIZE TABLE



ϕD	6.3	8 (L <20)	8 (L ≥20)	10	12.5
F	2.5	3.5	3.5	5.0	5.0
ϕd	0.5	0.5	0.6	0.6	0.6
α		(L <20) 1.5		(L ≥20) 2.0	
β		(D <20) 0.5		(D ≥20) 1.0	

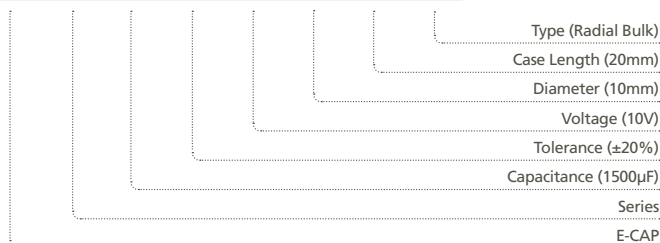
RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient	50	120	300	1k	100k
15~33	0.45	0.55	0.70	0.90	1.00
39~330	0.60	0.70	0.85	0.95	1.00
470~1000	0.65	0.75	0.90	0.98	1.00
1200~3900	0.75	0.80	0.95	1.00	1.00

PART NUMBER SYSTEM (EXAMPLE : 10V 1500µF)

1	2 3	4 5 6	7	8 9	10	11 12	13 14
E	SF	158	M	1A	G	20	RR



STANDARD RATINGS

Voltage (Code)		6.3V (0J)			10V (1A)			16V (1C)		
Cap. (µF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
120	127							6.3 x 11	0.220	340
220	227				6.3 x 11	0.220	340			
330	337	6.3 x 11	0.220	340				8 x 12	0.130	640
470	477				8 x 12	0.130	640	8 x 16	0.087	840
								10 x 12.5	0.080	865
680	687	8 x 12	0.130	640	8 x 16	0.087	840	8 x 20	0.069	1050
					10 x 12.5	0.080	865	10 x 16	0.060	1210
820	827	10 x 12.5	0.080	865						
1000	108	8 x 16	0.087	840	8 x 20	0.069	1050	10 x 20	0.046	1400
					10 x 16	0.060	1210			
1200	128	8 x 20	0.069	1050	10 x 20	0.046	1400	10 x 25	0.042	1650
		10 x 16	0.060	1210						
1500	158	10 x 20	0.046	1400	10 x 25	0.042	1650	12.5 x 20	0.035	1900
2200	228	10 x 25	0.042	1650	12.5 x 20	0.035	1900	12.5 x 25	0.030	2124
3300	338	12.5 x 20	0.035	1900	12.5 x 25	0.030	2124			
3900	398	12.5 x 25	0.030	2124						

Maximum Allowable Ripple Current (mArms) at 105°C 100kHz

Case Size Φ D x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

Voltage (Code)		25V (1E)			35V (1V)			50V (1H)		
Cap. (µF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
56	566				6.3 x 11	0.220	340	6.3 x 11	0.300	295
100	107	6.3 x 11	0.220	340				8 x 12	0.170	555
120	127							8 x 16	0.120	730
150	157				8 x 12	0.130	640	10 x 12.5	0.120	760
220	227	8 x 12	0.130	640	8 x 16	0.087	840	10 x 16	0.084	1050
					10 x 12.5	0.080	865			
330	337	8 x 16	0.087	840	10 x 16	0.060	1210	10 x 25	0.055	1440
		10 x 12.5	0.080	865						
470	477	8 x 20	0.069	1050	10 x 20	0.046	1400	12.5 x 20	0.045	1660
		10 x 16	0.060	1210						
560	567				10 x 25	0.042	1650	12.5 x 25	0.034	1950
680	687	10 x 20	0.046	1400	12.5 x 20	0.035	1900			
820	827	10 x 25	0.042	1650						
1000	108	12.5 x 20	0.035	1900	12.5 x 25	0.030	2124			
1500	158	12.5 x 25	0.030	2124						

Maximum Allowable Ripple Current (mArms) at 105°C 100kHz

Case Size Φ D x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

Voltage (Code)		63V (1J)			100V (2A)		
Cap. (µF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
15	156				6.3 x 11	0.960	115
27	276				8 x 12	0.504	232
33	336	6.3 x 11	0.960	115			
39	396				8 x 16	0.360	300
47	476				10 x 12.5	0.344	314
56	566	8 x 12	0.504	232	8 x 20	0.264	362
68	686				10 x 16	0.248	357
82	826	8 x 16	0.360	300	10 x 20	0.168	466
		10 x 12.5	0.344	314			
100	107				10 x 25	0.160	531
120	127	8 x 20	0.264	362	12.5 x 20	0.128	690
		10 x 16	0.248	357			
180	187	10 x 20	0.168	466	12.5 x 25	0.096	922
220	227	10 x 25	0.160	531			
270	277	12.5 x 20	0.128	690			
330	337	12.5 x 25	0.096	922			

Maximum Allowable Ripple Current (mArms) at 105°C 100kHz

Case Size Φ D x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

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.