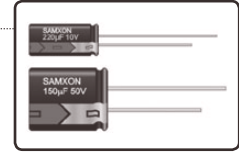


FEATURES

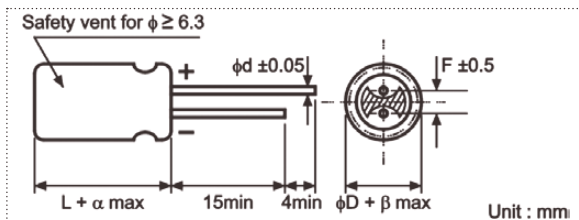
- Low impedance for high frequency.
- Life time: 1,000~4,000 hours at 105°C.



SPECIFICATIONS

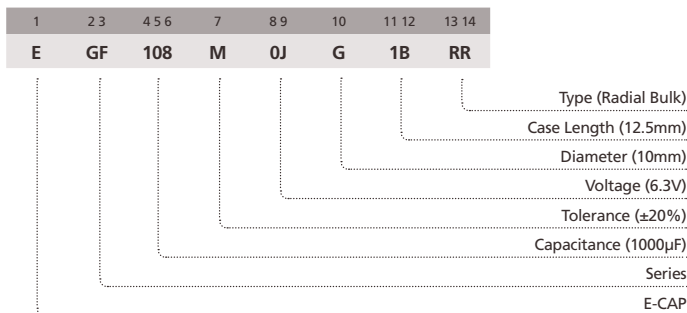
Item	Performance Characteristics																					
Operating Temperature Range	-40 to +105°C																					
Rated Working Voltage Range	6.3 to 100V																					
Nominal Capacitance Range	3.3 to 4700µF																					
Capacitance Tolerance	±20% at 120Hz, +20°C																					
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)	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													
Z-40°C / Z+20°C																						
High Temperature Loading	Test time	<table border="1"> <tr> <td>φD</td> <td>L ≤ 7</td> <td>D5-6.3</td> <td>D8-10</td> <td>D12.5</td> </tr> <tr> <td>Load life</td> <td>1,000h</td> <td>2,000h</td> <td>3,000h</td> <td>4,000h</td> </tr> </table>				φD	L ≤ 7	D5-6.3	D8-10	D12.5	Load life	1,000h	2,000h	3,000h	4,000h	Post test requirements at +20°C						
	φD	L ≤ 7	D5-6.3	D8-10	D12.5																	
Load life	1,000h	2,000h	3,000h	4,000h																		
Test temperature	: +105°C				Leakage current : ≤ Initial specified value																	
Test conditions	: Rated DC working voltage with rated ripple current				Cap. change : within ±25% of the initial measured value tan δ : ≤ 150% 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 : ≤ 150% of the initial specified value																						
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)																					

CASE SIZE TABLE



φD	4	5	6.3	8 (L < 20)	8 (L ≥ 20)	10	12.5
F	1.5	2.0	2.5	3.5	3.5	5.0	5.0
φd	0.45	(L ≤ 7) 0.45	(L ≥ 9) 0.50	0.6	0.6	0.6	0.6
α	(L ≤ 7) 1		(L ≤ 9 < 20) 1.5		(L ≥ 20) 2.0		
β	(D < 20) 0.5				(D ≥ 20) 1.0		

PART NUMBER SYSTEM (EXAMPLE : 6.3V 1000µF)



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
10	106							4 x 5	5.000	50
15	156							4 x 7	3.300	70
								5 x 5	2.600	80
22	226	4 x 5	5.000	50	4 x 7	3.300	70	5 x 7	1.700	110
					5 x 5	2.600	80	5 x 5	2.600	80
33	336	5 x 5	2.600	80	5 x 5	2.600	80	6.3 x 5	1.300	115
		5 x 7	1.700	110	5 x 7	1.700	110	6.3 x 7	0.800	160
47	476	5 x 5	2.600	80	6.3 x 5	1.300	115	6.3 x 5	1.300	115
		5 x 7	1.700	110	6.3 x 7	0.800	160	6.3 x 7	0.800	160
68	686	6.3 x 5	1.300	115	6.3 x 7	0.800	160	8 x 7	0.500	200
		6.3 x 7	0.800	160						
100	107	6.3 x 5	1.300	115	8 x 7	0.500	200	6.3 x 11	0.220	340
		6.3 x 7	0.800	160				8 x 7	0.500	200
120	127							6.3 x 11	0.220	340
150	157	8 x 7	0.500	200	6.3 x 11	0.220	340	6.3 x 11	0.220	340
					8 x 7	0.500	200	8 x 12	0.130	640
180	187	6.3 x 11	0.220	340	6.3 x 11	0.220	340	6.3 x 11	0.220	340
								8 x 12	0.130	640
220	227	8 x 7	0.500	200	6.3 x 11	0.220	340	6.3 x 11	0.220	340
		6.3 x 11	0.220	340				8 x 12	0.130	640
270	277	6.3 x 11	0.220	340	6.3 x 11	0.220	340	8 x 12	0.130	640
					8 x 12	0.130	640			
330	337	6.3 x 11	0.220	340	6.3 x 11	0.220	340	6.3 x 11	0.220	340
		8 x 12	0.130	640	8 x 12	0.130	640	8 x 12	0.130	640
390	397	8 x 12	0.130	640	8 x 12	0.130	640	8 x 12	0.130	640
470	477	8 x 12	0.130	640	6.3 x 11	0.220	340	8 x 12	0.130	640
					8 x 12	0.130	640	10 x 12.5	0.080	865
560	567	8 x 12	0.130	640	8 x 12	0.130	640	10 x 12.5	0.080	865
680	687	8 x 12	0.130	640	8 x 12	0.130	640	8 x 16	0.087	840
								10 x 12.5	0.080	865
820	827	8 x 12	0.130	640	10 x 12.5	0.080	865	10 x 16	0.060	1210
		10 x 12.5	0.080	865						
1000	108	8 x 12	0.130	640	8 x 16	0.087	840	8 x 16	0.087	840
		10 x 12.5	0.080	865	10 x 16	0.060	1210	10 x 16	0.060	1210
1200	128	8 x 16	0.087	840	10 x 20	0.046	1400	10 x 20	0.046	1400
		10 x 12.5	0.080	865						
1500	158	8 x 20	0.069	1050	10 x 20	0.046	1400	10 x 20	0.046	1400
		10 x 16	0.060	1210						
1800	188	10 x 20	0.046	1400	10 x 20	0.046	1400	10 x 25	0.042	1650
								12.5 x 20	0.035	1900
2200	228	10 x 20	0.046	1400	10 x 20	0.046	1400	10 x 25	0.042	1650
								12.5 x 20	0.035	1900
2700	278	10 x 25	0.042	1650	10 x 25	0.042	1650	12.5 x 25	0.030	2124
		12.5 x 20	0.035	1900	12.5 x 20	0.035	1900			
3300	338	10 x 25	0.042	1650	12.5 x 25	0.030	2124	12.5 x 25	0.030	2124
		12.5 x 20	0.035	1900						
3900	398	12.5 x 20	0.035	1900						
4700	478	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

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.

STANDARD RATINGS

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
3.3	335				4 x 5	5.000	50			
4.7	475	4 x 5	5.000	50	4 x 5	5.000	50			
6.8	685	4 x 5	5.000	50	4 x 7	3.300	70			
					5 x 5	2.600	80			
10	106	4 x 7	3.300	70	5 x 5	2.600	80			
		5 x 5	2.600	80	5 x 7	1.700	110			
15	156	5 x 7	1.700	110	6.3 x 5	1.300	115			
		6.3 x 5	1.300	115	6.3 x 7	0.800	160			
22	226	5 x 7	1.700	110	6.3 x 5	1.300	115			
		6.3 x 5	1.300	115	6.3 x 7	0.800	160			
33	336	6.3 x 5	1.300	115	8 x 7	0.500	200	6.3 x 11	0.300	295
		6.3 x 7	0.800	160						
39	396							6.3 x 11	0.300	295
47	476	8 x 7	0.500	200	6.3 x 11	0.220	340	6.3 x 11	0.300	295
56	566				6.3 x 11	0.220	340	8 x 12	0.170	555
68	686	8 x 7	0.500	200	6.3 x 11	0.220	340	8 x 12	0.170	555
82	826	6.3 x 11	0.220	340	8 x 12	0.130	640	8 x 12	0.170	555
100	107	6.3 x 11	0.220	340	6.3 x 11	0.220	340	10 x 12.5	0.120	760
					8 x 12	0.130	640			
120	127	8 x 12	0.130	640	8 x 12	0.130	640	8 x 16	0.120	730
								10 x 12.5	0.120	760
150	157	8 x 12	0.130	640	8 x 12	0.130	640	10 x 16	0.084	1050
180	187	8 x 12	0.130	640	10 x 12.5	0.080	865	8 x 20	0.091	910
								10 x 16	0.084	1050
220	227	8 x 12	0.130	640	8 x 12	0.130	640	8 x 20	0.091	910
					8 x 16	0.087	840			
					10 x 12.5	0.080	865			
270	277	8 x 12	0.130	640	10 x 16	0.060	1210	10 x 25	0.055	1440
		10 x 12.5	0.080	865						
330	337	8 x 12	0.130	640	8 x 16	0.087	840	12.5 x 20	0.045	1660
					8 x 20	0.069	1050			
		10 x 12.5	0.080	865	10 x 12.5	0.080	865			
390	397	10 x 12.5	0.080	865	10 x 16	0.060	1210	12.5 x 20	0.045	1660
					10 x 16	0.060	1210			
		8 x 16	0.087	840	10 x 20	0.046	1400			
470	477	10 x 12.5	0.080	865	10 x 20	0.046	1400	12.5 x 25	0.034	1950
		10 x 16	0.060	1210						
560	567	10 x 16	0.060	1210	10 x 20	0.046	1400	12.5 x 25	0.034	1950
680	687	10 x 16	0.060	1210	10 x 20	0.046	1400			
		10 x 20	0.046	1400	12.5 x 20	0.035	1900			
820	827	10 x 20	0.046	1400	10 x 25	0.042	1650			
					12.5 x 20	0.035	1900			
1000	108	10 x 20	0.046	1400	12.5 x 20	0.035	1900			
					12.5 x 25	0.030	2124			
1200	128	10 x 20	0.046	1400						
1500	158	10 x 25	0.042	1650						
		12.5 x 20	0.035	1900						
1800	188	12.5 x 25	0.030	2124						
2200	228	12.5 x 25	0.030	2124						

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

Case Size ΦD x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

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STANDARD RATINGS

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
22	226	6.3 x 11	0.960	115			
27	276	6.3 x 11	0.960	115	8 x 12	0.504	232
33	336	6.3 x 11	0.960	115			
39	396	8 x 12	0.504	232	8 x 16	0.360	300
47	476	8 x 12	0.504	232	10 x 12.5	0.344	314
56	566	8 x 12	0.504	232	8 x 20	0.264	362
68	686	8 x 12	0.504	232	10 x 16	0.248	357
82	826	10 x 12.5	0.344	314	10 x 20	0.168	466
100	107	8 x 16	0.360	300	10 x 20	0.168	466
		10 x 12.5	0.344	314	12.5 x 20	0.128	690
120	127	8 x 16	0.360	300	12.5 x 20	0.128	690
		10 x 16	0.248	357			
150	157	8 x 20	0.264	362			
180	187	10 x 20	0.168	466	12.5 x 25	0.096	922
220	227	10 x 16	0.248	357	12.5 x 25	0.096	922
		10 x 20	0.168	466			
270	277	12.5 x 20	0.128	690			
330	337	12.5 x 20	0.128	690			
390	397	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

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient Cap. (μF)	Freq. (Hz)			
	120	1k	10k	100k
≤180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700	0.85	0.95	0.98	1.00

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