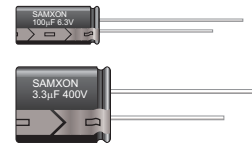


+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

FEATURES

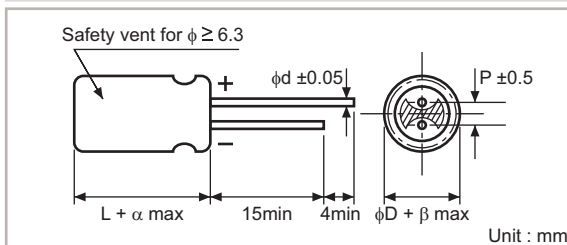
- 1. Low impedance for high frequency
- 2. Life time: 2000~4000 hours at 105°C



SPECIFICATIONS

Item	Performance Characteristics	
Operating Temperature Range	-40 to +105°C	-25 to +105°C
Rated Working Voltage Range	6.3 to 100V	160 to 450V
Nominal Capacitance Range	2.2 to 18000µF	
Capacitance Tolerance	±20% (120Hz, +20°C)	
Leakage Current	$I \leq 0.01CV$ or $3(\mu A)$ after 2 minutes	$CV \leq 1000 : I = 0.1CV + 40(\mu A)$ max. $CV > 1000 : I = 0.04CV + 100(\mu A)$ max. after 1 minute application of rated working voltage at +20°C
Dissipation Factor $\tan \delta$ (120Hz, +20°C)	Working Voltage (V)	6.3 10 16 25 35 50 63 100
	$\tan \delta$ (max.)	0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.08
	Working Voltage (V)	160 ~ 250 400 ~ 450
	$\tan \delta$ (max.)	0.20 0.24
	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	8 6 4 3 3 3 3 3
High Temperature Loading	Test conditions	
	Duration : ϕD	5 ~ 6.3 8 ~ 10 12.5 ~
	Load life	2000h 3000h 4000h
	Ambient temp. : +105°C	
Applied voltage : Rated DC working voltage		Post test requirements at +20°C Leakage current : \leq Initial specified value Cap. change : within $\pm 20\%$ of initial measured value $\tan \delta$: $\leq 150\%$ of initial specified value
Shelf Life	Test conditions	
	Duration : 1000 hours	
	Ambient temp. : +105°C	
	Applied voltage : (None)	
		Post test requirements at +20°C Same limits for high temperature loading.
Others	JIS C - 5141 JIS C - 5102	

CASE SIZE TABLE



ϕD	5	6.3	8	10	13	16	18		
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5		
ϕd		0.5		0.6		0.8			
α		(L < 20) 1.5		(L \geq 20) 2.0					
β		(D < 20) 0.5		(D \geq 20) 1.0					

RIPPLE CURRENT MULTIPLIER

Temperature Coefficient					Frequency Coefficient						
Temperature(°C)	~ 55	60	70	85	105	Cap(µF)	Freq.(Hz)	120	1K	10K	100K
Factor	2.23	2.17	2.00	1.75	1.00			~180	0.40	0.75	0.90
						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 ~ 18000		0.85	0.95	0.98	1.00

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

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
47	476							5 x 11	0.580	210
56	566							5 x 11	0.580	210
68	686							5 x 11	0.580	210
82	826				5 x 11	0.580	210	5 x 11	0.580	210
100	107	5 x 11	0.580	210	5 x 11	0.580	210	6.3 x 11	0.220	340
120	127	5 x 11	0.580	210				6.3 x 11	0.220	340
150	157	5 x 11	0.580	210	6.3 x 11	0.220	340	8 x 12	0.130	640
180	187	6.3 x 11	0.220	340	6.3 x 11	0.220	340	8 x 12	0.130	640
220	227	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			
270	277	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	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	10 x 12.5	0.080	865
470	477	6.3 x 11	0.220	540	8 x 12	0.130	640	8 x 16	0.087	840
		8 x 12	0.130	640				10 x 12.5	0.080	865
560	567	8 x 12	0.130	640	10 x 12.5	0.080	865	10 x 16	0.060	1210
680	687	8 x 16	0.087	840	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	8 x 16	0.087	840	10 x 16	0.060	1210	10 x 20	0.046	1400
		10 x 12.5	0.080	865				12.5 x 15	0.049	1450
1000	108	10 x 12.5	0.080	865	8 x 20	0.069	1050	10 x 20	0.046	1400
					10 x 16	0.060	1210	10 x 25	0.042	1650
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	12.5 x 15	0.049	1450	16 x 15	0.050	1880
1500	158	10 x 20	0.046	1400	10 x 25	0.042	1650	10 x 30	0.031	1910
		12.5 x 15	0.049	1450				12.5 x 20	0.035	1900
								16 x 15	0.055	1790
1800	188	10 x 25	0.042	1650	12.5 x 20	0.046	1900	12.5 x 25	0.030	2124
					16 x 15	0.050	1880	18 x 15	0.056	1924
2200	228	10 x 25	0.042	1650	10 x 30	0.031	1910	12.5 x 25	0.030	2124
		16 x 15	0.050	1880	12.5 x 20	0.035	1900	16 x 20	0.035	2210
2700	278	10 x 30	0.031	1910	12.5 x 25	0.030	2124	12.5 x 30	0.026	2524
		12.5 x 20	0.035	1900				18 x 15	0.051	2020
		16 x 15	0.050	1880						
3300	338	12.5 x 20	0.035	1900	12.5 x 30	0.026	2524	12.5 x 35	0.022	2743
		18 x 15	0.051	2020	16 x 20	0.035	2210	18 x 20	0.034	2459
3900	398	12.5 x 25	0.030	2124	12.5 x 35	0.022	2743	16 x 25	0.028	2552
					16 x 20	0.035	2210	18 x 20	0.034	2495
4700	478	12.5 x 30	0.026	2524	12.5 x 40	0.019	3190	16 x 30	0.022	3029
		16 x 20	0.035	2210	16 x 25	0.028	2552	18 x 25	0.024	2771
5600	568	12.5 x 35	0.022	2743	16 x 25	0.028	2552	16 x 35	0.020	3124
		16 x 20	0.035	2210	18 x 20	0.034	2495	18 x 30	0.020	3600
6800	688	12.5 x 40	0.019	3190	16 x 30	0.022	3029	16 x 40	0.017	3886
		16 x 25	0.028	2552						
		18 x 20	0.034	2495						
8200	828	16 x 30	0.022	3029	16 x 35	0.020	3124	18 x 35	0.019	3638
					18 x 30	0.020	3600			
10000	109	16 x 35	0.020	3124	18 x 35	0.019	3638	18 x 40	0.015	3781
		18 x 25	0.024	2771						
12000	129	16 x 40	0.017	3886	18 x 40	0.015	3781			
		18 x 30	0.020	3600						
15000	159	18 x 35	0.019	3638						
18000	189	18 x 40	0.015	3781						

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz

GF Miniature Aluminum Electrolytic Capacitors

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

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						
1	105							5 x 11	2.400	180						
2.2	225							5 x 11	1.300	180						
3.3	335							5 x 11	1.300	180						
4.7	475							5 x 11	1.300	180						
10	106							5 x 11	1.300	180						
12	126							5 x 11	1.300	180						
15	156							5 x 11	1.300	180						
18	186							5 x 11	0.700	180						
22	226				5 x 11	0.580	210	5 x 11	0.700	180						
27	276				5 x 11	0.580	210	5 x 11	0.700	180						
33	336				5 x 11	0.580	210	6.3 x 11	0.300	295						
39	396	5 x 11	0.580	210	5 x 11	0.580	210	6.3 x 11	0.300	295						
47	476	5 x 11	0.580	210	6.3 x 11	0.220	340	6.3 x 11	0.300	295						
56	566	5 x 11	0.580	210	6.3 x 11	0.220	340	8 x 12	0.170	555						
68	686				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	8 x 12	0.130	640	10 x 12.5	0.120	760						
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 16	0.087	840	10 x 20	0.060	1220						
					10 x 12.5	0.080	865	12.5 x 15	0.061	1260						
270	277	10 x 12.5	0.080	865	10 x 16	0.060	1210	10 x 25	0.055	1440						
330	337	8 x 16	0.087	840	8 x 20	0.069	1050	10 x 30	0.043	1690						
		10 x 12.5	0.080	865	10 x 16	0.060	1210	12.5 x 20	0.045	1660						
390	397	10 x 16	0.060	1210	10 x 20	0.046	1400	12.5 x 20	0.045	1660						
					12.5 x 15	0.049	1450	16 x 15	0.055	1690						
470	477	8 x 20	0.069	1050	10 x 20	0.046	1400	10 x 30	0.043	1690						
		10 x 16	0.060	1210				12.5 x 25	0.034	1950						
560	567	10 x 20	0.046	1400	10 x 25	0.042	1650	12.5 x 25	0.034	1950						
		12.5 x 15	0.049	1450	12.5 x 20	0.038	1900	18 x 15	0.054	1930						
680	687	10 x 20	0.046	1400	10 x 30	0.035	1450	12.5 x 30	0.030	2310						
					12.5 x 20	0.038	1900	16 x 20	0.034	2210						
					16 x 15	0.055	2068									
820	827	10 x 25	0.042	1650	12.5 x 25	0.030	2453	12.5 x 35	0.025	2510						
		12.5 x 20	0.035	1900	18 x 15	0.056	2222	18 x 20	0.036	2490						
1000	108	10 x 30	0.031	1910	12.5 x 25	0.030	2453	12.5 x 35	0.021	2920						
		12.5 x 20	0.035	1900							16 x 20	0.035	2552	16 x 25	0.025	2555
		16 x 15	0.055	1790												
1200	128	12.5 x 25	0.030	2124	12.5 x 30	0.026	2915	16 x 30	0.022	3010						
		18 x 15	0.056	1924	16 x 20	0.035	2552	18 x 25	0.026	2740						
1500	158	12.5 x 25	0.030	2124	12.5 x 35	0.022	3168	16 x 35	0.019	3150						
		16 x 20	0.035	2210	16 x 25	0.028	2948									
1800	188	12.5 x 30	0.026	2524	18 x 20	0.034	2882	16 x 40	0.016	3710						
					16 x 20	0.035	2210	12.5 x 40	0.019	3685	18 x 30	0.021	3635			
								16 x 25	0.028	2948						
2200	228	12.5 x 35	0.022	2743	16 x 30	0.022	3498	18 x 35	0.017	3680						
		18 x 20	0.034	2495	18 x 25	0.024	3201									
2700	278	16 x 25	0.028	2552	16 x 35	0.020	3608	18 x 40	0.014	3800						
					18 x 30	0.020	4158									
3300	338	16 x 30	0.022	3029	18 x 35	0.019	4202									
		18 x 25	0.022	2771												
3900	398	16 x 35	0.024	3124	18 x 40	0.015	4367									
		18 x 30	0.020	3600												
4700	478	18 x 35	0.019	3638												
5600	568	18 x 40	0.015	3781												

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

STANDARD RATINGS

Voltage (Code)		63V (1J)			100V (2A)			160V (2V)		
Cap.(μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
4.7	475							8 x 12	4.00	120
6.8	685				5 x 11	1.840	55			
10	106							10 x 12.5	3.00	162
								10 x 16	2.25	208
12	126	5 x 11	1.840	55						
15	156				6.3 x 11	0.960	115			
18	186	5 x 11	1.840	55						
22	226	6.3 x 11	0.960	115				10 x 20	1.65	266
27	276				8 x 12	0.504	232			
33	336	6.3 x 11	0.960	115				12.5 x 20	1.07	366
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	288	12.5 x 25	0.69	500
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	288	10 x 20	0.168	466			
					12.5 x 16	0.184	466			
100	107	8 x 16	0.360	300	10 x 25	0.160	531	16 x 25	0.36	675
		10 x 12.5	0.344	288						
120	127	10 x 16	0.248	357	10 x 30	0.120	663			
					12.5 x 20	0.128	690			
150	157	8 x 20	0.264	362	16 x 16	0.112	795			
180	187	10 x 20	0.168	466	12.5 x 25	0.096	784			
		12.5 x 15	0.184	466	18 x 16	0.096	920			
220	227	10 x 20	0.168	466	12.5 x 30	0.080	905	16 x 35	0.30	890
		10 x 25	0.160	531	16 x 20	0.073	1040	18 x 35	0.21	1142
		12.5 x 20	0.128	690						
270	277	16 x 15	0.112	795	12.5 x 35	0.066	1050			
					16 x 25	0.058	1250			
330	337	10 x 30	0.120	663	12.5 x 40	0.057	1180			
		12.5 x 20	0.128	690	18 x 20	0.064	1240			
390	397	12.5 x 25	0.096	784	16 x 30	0.043	1570			
		18 x 15	0.096	920	18 x 25	0.046	1490			
470	477	12.5 x 30	0.080	905	16 x 35	0.036	1790	18 x 40	0.18	1307
		16 x 20	0.073	1040	18 x 30	0.038	1630			
560	567	16 x 25	0.058	1250	18 x 40	0.032	2020			
680	687	12.5 x 35	0.066	1050						
		16 x 25	0.058	1250	18 x 35	0.032	1790			
		18 x 20	0.064	1240						
820	827	12.5 x 40	0.057	1180						
		16 x 30	0.043	1570	18 x 40	0.029	2330			
		18 x 25	0.046	1490						
1000	108	16 x 30	0.043	1570						
		16 x 35	0.036	1790						
1200	128	16 x 40	0.032	2020						
		18 x 30	0.038	1630						
1500	158	18 x 35	0.032	1790						
1800	188	18 x 40	0.029	2330						

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz

+105°C, High Ripple Current(高紋波), Low Impedance(低阻抗品)

STANDARD RATINGS

Voltage (Code)		160V (2V)			200V (2D)			250V (2E)		
Cap.(μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
2.2	225									
3.3	335							10 x 12.5	8.00	90
4.7	475	8 x 12	4.00	120				10 x 16	5.25	138
10	106	10 x 12.5	3.00	162	10 x 16	2.25	208	10 x 20	4.20	167
		10 x 16	2.25	208						
22	226	10 x 20	1.65	266	10 x 20	1.65	266	12.5 x 25	1.80	300
33	336	12.5 x 20	1.07	366	12.5 x 20	1.07	366	12.5 x 20	2.60	226
								12.5 x 25	1.80	300
								16 x 25	0.90	558
47	476	12.5 x 25	0.69	500	12.5 x 25	0.69	500	16 x 25	0.90	558
68	686									
100	107	16 x 25	0.36	675	16 x 30	0.36	967	18 x 35	0.45	779
220	227	16 x 35	0.30	890	18 x 35	0.21	1142	18 x 40	0.41	833
		18 x 35	0.21	1142						
470	477	18 x 40	0.18	1307	18 x 50	0.08	1380			

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz

Voltage (Code)		400V (2G)			450V (2W)					
Cap.(μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current			
2.2	225				8 x 12	12.00	45			
					10 x 16	7.90	110			
3.3	335	10 x 12.5	6.00	88	10 x 20	6.20	135			
		10 x 20	4.20	150						
4.7	475	10 x 25	3.45	183	12.5 x 20	3.70	180			
10	106	12.5 x 20	3.45	197	12.5 x 25	2.60	260			
		12.5 x 25	1.80	300						
22	226	16 x 25	1.22	558	16 x 30	1.00	480			
33	336	16 x 30	0.69	583	18 x 35	0.62	660			
47	476	18 x 30	0.50	717	16 x 35	0.69	620			
68	686				18 x 40	0.60	710			
100	107	18 x 40	0.40	907	18 x 40	0.60	710			
220	227									
470	477									

Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz