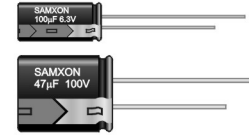


FEATURES

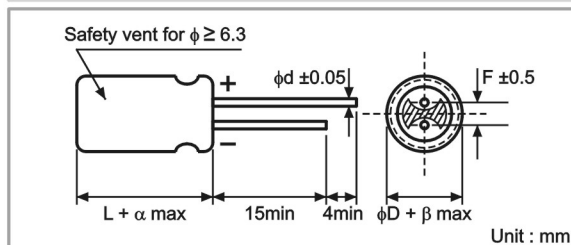
1. Load life 105°C and low ESR
2. Excellent ripple current capability.
3. Used in communication equipments, switching power supply, industrial measuring instruments, etc.



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 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										
	Working Voltage (V)	160 ~ 250   400 ~ 450										
	tan δ (max.)	0.20   0.24										
	When nominal capacitance is over 1000µF, tan δ shall be added 0.02 to the listed value increase with of every 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    3    3    3    3    2    2										
	Z-40°C / Z+20°C	8    6    4    4    3    3    3    3										
	Working Voltage (V)	160 ~ 250   400    450										
	Z-25°C / Z+20°C	3    5    6										
High Temperature Loading	Test conditions											
	Duration :	<table border="1"> <tr> <td>φD</td> <td>6.3</td> <td>8</td> <td>10</td> <td>12.5 ~</td> </tr> <tr> <td>Load life</td> <td>3000h</td> <td>4000h</td> <td>5000h</td> <td>7000h</td> </tr> </table>	φD	6.3	8	10	12.5 ~	Load life	3000h	4000h	5000h	7000h
	φD	6.3	8	10	12.5 ~							
Load life	3000h	4000h	5000h	7000h								
Ambient temp. :	+105°C											
	Applied voltage : Rated DC working voltage with rated ripple current											
	Post test requirements at +20°C											
	Leakage current : ≤ Initial specified value											
	Cap. change : within ±25% of initial measured value											
	tan δ : ≤ 200% of initial specified value											
Shelf Life	Test conditions											
	Duration :	1000 hours										
	Ambient temp. :	+105°C										
	Applied voltage : (None)											
	Post test requirements at +20°C											
	Leakage current : ≤ Initial specified value											
	Cap. change : within ±20% of initial measured value											
	tan δ : ≤ 200% of initial specified value											
Others	JIS C - 5101 (IEC 60384)											

CASE SIZE TABLE



φD	6.3	8(L<20) 8(L≥20)	10	12.5	16	18
F	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5	0.6	0.6	0.6	0.8	
α	(L < 20) 1.5		(L ≥ 20) 2.0			
β	(D < 20) 0.5		(D ≥ 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	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 ~ 18000	0.85	0.95	0.98	1.00

**+105°C, High Ripple Current(高紋波), Long Life Assurance(長壽命), 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
100	107							6.3 x 11	0.286	298
120	127							6.3 x 11	0.286	298
150	157				6.3 x 11	0.286	298			
180	187				6.3 x 11	0.286	298	8 x 12	0.169	561
220	227	6.3 x 11	0.286	298	6.3 x 11	0.286	298	8 x 12	0.169	561
270	277	6.3 x 11	0.286	298	8 x 12	0.169	561	8 x 12	0.169	561
330	337	6.3 x 11	0.286	298	8 x 12	0.169	561	8 x 12	0.169	561
390	397	8 x 12	0.169	561	8 x 12	0.169	561	10 x 12.5	0.104	759
470	477	8 x 12	0.169	561	8 x 12	0.169	561	8 x 16	0.113	737
560	567	8 x 12	0.169	561	10 x 12.5	0.104	759	10 x 16	0.078	1061
680	687				8 x 16	0.113	737	8 x 20	0.090	921
					10 x 12.5	0.104	759	10 x 16	0.078	1061
820	827	8 x 16	0.113	737	10 x 16	0.078	1061	10 x 20	0.060	1228
		10 x 16	0.078	1061				12.5 x 15	0.064	1272
1000	108	10 x 16	0.078	1061	8 x 20	0.090	921	10 x 20	0.060	1228
					10 x 16	0.078	1061	10 x 25	0.055	1447
1200	128	8 x 20	0.090	921	10 x 20	0.060	1228	10 x 25	0.055	1447
		10 x 16	0.078	1061	12.5 x 15	0.064	1272	16 x 15	0.065	1649
1500	158	10 x 20	0.060	1228	10 x 25	0.055	1447	10 x 30	0.040	1675
		12.5 x 15	0.064	1272				12.5 x 20	0.046	1666
								16 x 15	0.072	1570
1800	188	10 x 25	0.055	1447	10 x 20	0.060	1228	12.5 x 25	0.039	1863
					16 x 15	0.065	1649	18 x 15	0.073	1687
2200	228	10 x 25	0.055	1447	16 x 20	0.046	1938	12.5 x 25	0.039	1863
		16 x 15	0.065	1649	12.5 x 20	0.046	1666	16 x 20	0.046	1938
2700	278	10 x 30	0.040	1675	12.5 x 25	0.039	1863	12.5 x 30	0.034	2214
		12.5 x 20	0.046	1666	18 x 15	0.066	1772	16 x 20	0.046	1938
		16 x 15	0.065	1649						
3300	338	12.5 x 20	0.046	1666	12.5 x 30	0.034	2214	12.5 x 35	0.029	2406
		18 x 15	0.066	1772	16 x 20	0.046	1938	18 x 20	0.044	2188
3900	398	12.5 x 25	0.039	1863	12.5 x 35	0.029	2406	16 x 25	0.036	2238
					16 x 20	0.046	1938	18 x 20	0.044	2188
4700	478	12.5 x 30	0.034	2214	12.5 x 40	0.025	2798	16 x 30	0.029	2657
		16 x 20	0.046	1938	16 x 25	0.036	2238	18 x 25	0.031	2430
5600	568	12.5 x 35	0.029	2406	16 x 25	0.036	2238	16 x 35	0.026	2740
		16 x 20	0.046	1938	18 x 20	0.044	2188	18 x 30	0.026	3157
6800	688	12.5 x 40	0.025	2798	16 x 30	0.029	2657	16 x 40	0.022	3408
		16 x 30	0.029	2657	18 x 25	0.031	2430			
		18 x 25	0.031	2430						
8200	828	16 x 35	0.026	2740	16 x 35	0.026	2740	18 x 35	0.025	3191
					18 x 30	0.026	3157			
10000	109	16 x 35	0.026	2740	18 x 35	0.025	3191	18 x 40	0.020	3316
		18 x 30	0.026	3157						
12000	129	16 x 40	0.022	3408	18 x 40	0.020	3316			
		18 x 35	0.025	3191						
15000	159	18 x 35	0.025	3191						
18000	189	18 x 40	0.020	3316						

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), Long Life Assurance(長壽命), 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
33	336							6.3 x 11	0.390	259
39	396							6.3 x 11	0.390	259
47	476				6.3 x 11	0.286	298	6.3 x 11	0.390	259
56	566				6.3 x 11	0.286	298	8 x 12	0.221	487
68	686				6.3 x 11	0.286	298	8 x 12	0.221	487
82	826	6.3 x 11	0.286	298	8 x 12	0.169	561	8 x 12	0.221	487
100	107	6.3 x 11	0.286	298	8 x 12	0.169	561	10 x 12.5	0.156	667
120	127	8 x 12	0.169	561	8 x 12	0.169	561	8 x 16	0.156	640
150	157				8 x 12	0.169	561	10 x 12.5	0.156	667
180	187	8 x 12	0.169	561	8 x 12	0.169	561	10 x 16	0.109	921
180	187	8 x 12	0.169	561	10 x 12.5	0.104	759	8 x 20	0.118	798
180	187	8 x 12	0.169	561	10 x 12.5	0.104	759	10 x 16	0.109	921
220	227	8 x 12	0.169	561	8 x 16	0.113	737	10 x 20	0.078	1070
220	227	8 x 12	0.169	561	10 x 12.5	0.104	759	12.5 x 15	0.079	1105
270	277	10 x 12.5	0.104	759	10 x 16	0.078	1061	10 x 25	0.072	1263
330	337	8 x 16	0.113	737	8 x 20	0.090	921	10 x 30	0.056	1482
330	337	10 x 12.5	0.104	759	10 x 16	0.078	1061	12.5 x 20	0.059	1456
390	397	10 x 16	0.078	1061	10 x 20	0.060	1228	12.5 x 20	0.059	1456
390	397	10 x 16	0.078	1061	12.5 x 15	0.064	1272	16 x 15	0.072	1482
470	477	8 x 20	0.090	921	10 x 20	0.060	1228	10 x 30	0.056	1482
470	477	10 x 16	0.078	1061	10 x 20	0.060	1228	12.5 x 25	0.044	1710
560	567	10 x 20	0.060	1228	10 x 25	0.055	1447	12.5 x 25	0.044	1710
560	567	12.5 x 15	0.064	1272	12.5 x 20	0.046	1666	18 x 15	0.070	1693
680	687	10 x 20	0.060	1228	10 x 30	0.056	1482	12.5 x 30	0.039	2026
680	687	10 x 20	0.060	1228	12.5 x 25	0.039	1863	16 x 20	0.044	1938
680	687	10 x 20	0.060	1228	16 x 15	0.072	1570			
820	827	10 x 25	0.055	1447	12.5 x 25	0.039	1863	12.5 x 35	0.033	2201
820	827	12.5 x 20	0.046	1666	18 x 15	0.073	1687	18 x 20	0.047	2184
1000	108	10 x 30	0.040	1675	12.5 x 25	0.039	1863	12.5 x 35	0.027	2561
1000	108	12.5 x 20	0.046	1666	16 x 20	0.046	1938	16 x 25	0.033	2241
1000	108	16 x 15	0.072	1570						
1200	128	12.5 x 25	0.039	1863	12.5 x 30	0.034	2214	16 x 30	0.029	2640
1200	128	18 x 15	0.073	1687	16 x 20	0.046	1938	18 x 25	0.034	2403
1500	158	12.5 x 25	0.039	1863	12.5 x 35	0.029	2406	16 x 35	0.025	2763
1500	158	16 x 20	0.046	1938	16 x 25	0.036	2238			
1800	188	12.5 x 30	0.034	2214	18 x 20	0.044	2188	16 x 40	0.021	3254
1800	188	16 x 20	0.046	1938	12.5 x 40	0.025	2798	18 x 30	0.027	3188
1800	188	16 x 20	0.046	1938	16 x 25	0.036	2238			
2200	228	12.5 x 35	0.029	2406	16 x 30	0.029	2657	18 x 35	0.022	3228
2200	228	18 x 20	0.044	2188	18 x 25	0.031	2430			
2700	278	16 x 25	0.036	2238	16 x 35	0.026	2740	18 x 40	0.018	3333
2700	278	16 x 25	0.036	2238	18 x 30	0.026	3157			
3300	338	16 x 30	0.029	2657	18 x 35	0.025	3191			
3300	338	18 x 25	0.031	2430						
3900	398	16 x 35	0.026	2740	18 x 40	0.020	3316			
3900	398	18 x 30	0.026	3157						
4700	478	18 x 35	0.025	3191						
5600	568	18 x 40	0.020	3316						

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), Long Life Assurance(長壽命), Low Impedance(低阻抗品)**

**STANDARD RATINGS**

Voltage (Code)		63V (1J)			100V (2A)			160V (2C)		
Cap.(μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
6.8	685									
10	106							10 x 16	2.925	219
12	126									
15	156				6.3 x 11	1.560	101			
18	186									
22	226	6.3 x 11	1.560	101				10 x 20	1.950	307
27	276				8 x 12	0.819	203			
33	336	6.3 x 11	1.560	101				12.5 x 20	1.391	386
39	396	8 x 12	0.819	203	8 x 16	0.585	263			
47	476	8 x 12	0.819	203	10 x 12.5	0.559	253	12.5 x 25	0.897	526
56	566	8 x 12	0.819	203	8 x 20	0.429	317			
68	686	8 x 12	0.819	203	10 x 16	0.403	313			
82	826	10 x 12.5	0.559	253	10 x 20	0.273	409			
					12.5 x 15	0.299	409			
100	107	8 x 16	0.585	263	10 x 25	0.260	466	16 x 25	0.455	798
		10 x 12.5	0.559	253						
120	127	10 x 16	0.403	313	10 x 30	0.195	581			
					12.5 x 20	0.208	605			
150	157	8 x 20	0.429	317	16 x 15	0.182	697			
		10 x 20	0.273	409	12.5 x 25	0.156	688			
180	187	12.5 x 15	0.299	409	18 x 15	0.156	807			
		10 x 20	0.273	409						
220	227	10 x 25	0.260	466	12.5 x 30	0.130	794	18 x 35	0.273	1202
		12.5 x 20	0.208	605	16 x 20	0.118	912			
270	277	16 x 15	0.182	697	12.5 x 35	0.108	921			
					16 x 25	0.095	1096			
330	337	10 x 30	0.195	581	12.5 x 40	0.092	1035			
		12.5 x 20	0.208	605	18 x 20	0.104	1088			
390	397	12.5 x 25	0.156	688	16 x 30	0.070	1377			
		18 x 15	0.156	807	18 x 25	0.074	1307			
470	477	12.5 x 30	0.130	794	16 x 35	0.059	1570			
		16 x 20	0.118	912	18 x 30	0.061	1430			
560	567	16 x 25	0.095	1096	18 x 35	0.052	1570			
680	687	12.5 x 35	0.108	921	18 x 35	0.052	1570			
		16 x 25	0.095	1096						
		18 x 20	0.104	1088						
820	827	12.5 x 40	0.092	1035	18 x 40	0.047	2044			
		16 x 30	0.070	1377						
		18 x 25	0.074	1307						
1000	108	16 x 30	0.070	1377						
		16 x 35	0.059	1570						
1200	128	16 x 40	0.052	1772						
		18 x 30	0.061	1430						
1500	158	18 x 35	0.052	1570						
1800	188	18 x 40	0.047	2044						

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

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz

RS

Miniature Aluminum Electrolytic Capacitors

**+105°C, High Ripple Current(高紋波), Long Life Assurance(長壽命), Low Impedance(低阻抗品)**

**STANDARD RATINGS**

Voltage (Code)		200V (2D)			250V (2E)			400V (2G)		
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 20	5.460	171
4.7	475				10 x 16	6.285	145	10 x 25	4.485	193
10	106	10 x 16	2.925	219	10 x 20	5.200	202	12.5 x 25	2.340	316
22	226	10 x 20	1.950	307	12.5 x 25	2.340	316	16 x 25	1.586	500
33	336	12.5 x 20	1.391	386	12.5 x 25	2.340	316	16 x 30	0.897	614
47	476	12.5 x 25	0.897	526	16 x 25	1.105	500	18 x 30	0.650	754
100	107	16 x 30	0.468	1017	18 x 35	0.585	820			
220	227	18 x 35	0.234	1202	18 x 40	0.520	877			

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)		450V (2W)								
Cap.(μF)	Code	Case Size	Impedance	Ripple Current						
2.2	225	10 x 16	10.270	96						
3.3	335	10 x 20	8.060	118						
4.7	475	12.5 x 20	4.810	158						
10	106	12.5 x 25	3.380	228						
22	226	16 x 30	1.300	421						
33	336	18 x 35	0.806	579						

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

Case Size φD x L(mm)

Maximum Impedance (Ω) at 20°C 100KHz