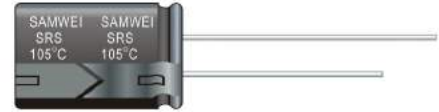


# SRS

SERIES Long Life Assurance(長壽命), High Ripple Current(高紋波), Low Impedance(低阻抗品)

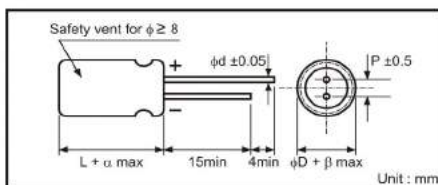
- Load life 105°C and low ESR.
- Excellent ripple current capability.



### ◆ 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	0.47 to 18000μF																																				
Capacitance Tolerance	±20(120Hz,+20°C)																																				
Leakage Current	$I \leq 0.01CV$ or $3(\mu A)$ after 1 minutes whichever is greater measured with rated working voltage applied at +20 °C	$CV \leq 1000: I = 0.03CV + 40(\mu A)_{max}$ $CV > 1000: I = 0.02CV + 100(\mu A)_{max}$ after 2 minutes at +20 °C																																			
Dissipation Factor $\tan \delta(120Hz,+20^\circ C)$	<table border="1"> <tr> <td>Working Voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td><math>\tan \delta(max)</math></td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </table> <table border="1"> <tr> <td>Working Voltage(V)</td> <td>160~250</td> <td>400~450</td> </tr> <tr> <td><math>\tan \delta(max)</math></td> <td>0.15</td> <td>0.20</td> </tr> </table> <p>For capacitance value &gt; 1000μF, add 0.02 per another 1000μF</p>		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	$\tan \delta(max)$	0.15	0.20											
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																																			
$\tan \delta(max)$	0.15	0.20																																			
Low Temperature Characteristics	<p>Impedance ratio max at 120Hz</p> <table border="1"> <tr> <td>Working Voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table> <table border="1"> <tr> <td>Working Voltage(V)</td> <td>160~250</td> <td>400</td> <td>450</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>3</td> <td>5</td> <td>6</td> </tr> </table> <p>For capacitance value &gt; 1000μF, Add 0.5 per another 1000μF for Z-25°C/Z+20°C Add 1.0 per another 1000μF for Z-40°C/Z+20°C</p>		Working Voltage(V)	6.3	10	16	25	35	50	63	100	Z-25°C/Z+20°C	4	3	3	3	3	3	3	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
Working Voltage(V)	6.3	10	16	25	35	50	63	100																													
Z-25°C/Z+20°C	4	3	3	3	3	3	3	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	<p>Test conditions</p> <p>Duration : <table border="1"><tr><td>ΦD</td><td>5~6.3</td><td>8~10</td><td>12.5~</td></tr><tr><td>Life</td><td>3000</td><td>5000</td><td>7000</td></tr></table></p> <p>Ambient temp : +105°C</p> <p>Applied voltage: Rated DC working voltage with max, ripple current.</p>	ΦD	5~6.3	8~10	12.5~	Life	3000	5000	7000	<p>Post test requirements at +20°C</p> <p>Leakage current : ≤ Initial specified value</p> <p>Cap . Change : ≤ ±20% of Initial measured value</p> <p><math>\tan \delta</math> : ≤ 200% of Initial specified value</p>																											
ΦD	5~6.3	8~10	12.5~																																		
Life	3000	5000	7000																																		
Shelf Life	<p>Test conditions</p> <p>Duration : 1000 hours</p> <p>Ambient temp : +105°C</p> <p>Applied voltage:(None)</p>	<p>Post test requirements at +20°C</p> <p>Leakage current : ≤ Initial specified value</p> <p>Cap . Change : ≤ ±20% of Initial measured value</p> <p><math>\tan \delta</math> : ≤ 200% of Initial specified value</p>																																			

### ◆ CASE SIZE TABLE



ΦD	5	6.3	8	10	12.5	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
Φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8	0.8
α	(L < 20) 1.5				(L ≥ 20) 2.0			
β	(D < 20) 0.5				(D ≥ 20) 1.0			

### ◆ RIPPLE CURRENT MULTIPLIER

#### (1) Frequency Coefficient

Rated Voltage(V)	freq. (Hz)	50	120	300	1k	10k~
	cap(μf)					
6.3~100	≤ 47	0.8	1	1.35	1.57	2
	100~470	0.8	1	1.23	1.34	1.5
	≥ 560	0.9	1	1.1	1.13	1.15
180~450	0.47~220	0.8	1	1.25	1.4	1.6
	> 270	0.9	1	1.1	1.13	1.15

#### (2) Temperature Coefficient

Temperatu	-55	60	70	85	105
FACTOR	2.23	2.17	2.00	1.75	1.00

### SRS

SERIES Long Life Assurance(長壽命), High Ripple Current(高紋波), Low Impedance(低阻抗品)

#### ◆ DIMENSIONS

Voltage	6.3V			10V			16V		
Cap(μF)	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple
47							5*11	0.754	184
56							5*11	0.754	202
68							5*11	0.754	220
82				5*11	0.754	220	5*11	0.754	245
100	5*11	0.754	184	5*11	0.754	245	6.3*11	0.286	298
120							6.3*11	0.286	326
150	5*11	0.754	236	6.3*11	0.286	298			
180				6.3*11	0.286	310	8*12	0.169	357
220	6.3*11	0.286	298	6.3*11	0.286	336	8*12	0.169	396
				8*12	0.169	386			
270	6.3*11	0.286	335				8*12	0.169	443
330	6.3*11	0.286	367	8*12	0.169	502	8*12	0.169	561
	8*12	0.169	420						
390	8*12	0.169	458	8*12	0.169	561	10*12.5	0.104	759
470	8*12	0.169	565	8*12	0.169	602	8*16	0.113	737
							10*12.5	0.104	759
560	8*12	0.169	610	10*12.5	0.104	759	10*16	0.078	1061
680				8*16	0.113	737	8*20	0.090	921
				10*12.5	0.104	759	10*16	0.078	1061
820	8*16	0.113	737	10*16	0.078	1061	10*20	0.060	1228
	10*12.5	0.104	759				12.5*15	0.064	1272
1000	10*12.5	0.104	803	8*20	0.090	921	10*20	0.060	1228
				10*16	0.078	1061	10*25	0.055	1447
1200	8*20	0.090	921	10*20	0.060	1228	10*25	0.055	1447
	10*16	0.078	1061	12.5*15	0.064	1272	16*15	0.065	1649
1500	10*20	0.060	1228	10*25	0.055	1369	10*30	0.040	1675
							12.5*20	0.046	1666
	12.5*15	0.064	1272				16*15	0.072	1570
1800	10*25	0.055	1447	10*20	0.060	1666	12.5*25	0.039	1863
				16*15	0.065	1649	18*15	0.073	1687
2200	10*25	0.055	1562	10*30	0.040	1675	12.5*25	0.039	1863
	16*15	0.065	1649	12.5*20	0.046	1666	16*20	0.046	1938
2700	10*30	0.060	1675	12.5*25	0.039	1863	12.5*30	0.034	2214
	12.5*20	0.046	1666						
	16*15	0.065	1649	18*15	0.066	1772	16*20	0.046	1938
3300	12.5*20	0.046	1720	12.5*30	0.034	2214	12.5*35	0.029	2406
	18*15	0.066	1772	16*20	0.046	1938	18*20	0.044	2157
3900	12.5*25	0.039	1863	12.5*35	0.029	2406	16*25	0.036	2238
				16*20	0.046	1938	18*20	0.044	2188
4700	12.5*30	0.034	2214	12.5*40	0.025	2798	16*30	0.029	2657
	16*20	0.046	1938	16*25	0.036	2238	18*25	0.031	2430
10000	16*35	0.026	2740	18*35	0.025	3191	18*40	0.020	3316
18000	18*40	0.020	3316	18*45	0.036	2238			

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

Case Size ΦD X L (mm)

Maximum Impedance (Ω) at 20°C 100KHz

### SRS

SERIES Long Life Assurance(長壽命), High Ripple Current(高紋波), Low Impedance(低阻抗品)

#### ◆ DIMENSIONS

Voltage	25V			35V			50V		
	Cap(μF)	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp
1							5*11	4.0000	30
2.2							5*11	2.5000	43
3.3							5*11	2.2000	53
4.7							5*11	1.9000	88
10							5*11	1.5000	100
12							5*11	1.5000	100
15							5*11	0.9100	157.9
18							5*11	0.9100	185
22				5*11	0.754	184	5*11	0.9100	200
27				5*11	0.754	202	5*11	0.9100	221
33				5*11	0.754	236	6.3*11	0.3900	258.7
39	5*11	0.754	220	5*11	0.754	282	6.3*11	0.3900	325
47	5*11	0.754	283	6.3*11	0.286	351	6.3*11	0.3900	398
56	5*11	0.754	337	6.3*11	0.286	400	8*12	0.2210	486.8
68				6.3*11	0.286	425	8*12	0.2210	512
82	6.3*11	0.286	402	8*12	0.169	561	8*12	0.2210	598
100	6.3*11	0.286	489	8*12	0.169	602	10*12.5	0.1560	666.6
120	8*12	0.169	561	8*12	0.169	612	8*16	0.1560	640.3
							10*12.5	0.1560	666.6
150				8*12	0.169	720	10*16	0.1092	870
180	8*12	0.169	639	10*12.5	0.104	759	8*20	0.1183	798.1
							10*16	0.1092	920.9
220	8*12	0.169	661	8*16	0.113	737	10*20	0.0780	1070
				10*12.5	0.104	759	12.5*15	0.0793	1105
270	10*12.5	0.104	759	10*16	0.078	1061	10*25	0.0715	1263
330	8*16	0.113	737	8*20	0.090	921	10*30	0.0559	1382
	10*12.5	0.104	804	10*16	0.078	1200	12.5*20	0.0585	1426
390	10*16	0.078	1061	10*20	0.060	1228	12.5*20	0.0585	1456
				12.5*15	0.064	1272	16*15	0.0715	1482
470	8*20	0.090	921	10*20	0.060	1311	10*30	0.0559	1510
	10*16	0.078	1125				12.5*25	0.0442	1620
560	10*20	0.060	1228	10*25	0.055	1447	12.5*25	0.0442	1710
	12.5*15	0.064	1272	12.5*20	0.046	1666	18*15	0.0702	1693
680	10*20	0.060	1300	12.5*15	0.064	1348	12.5*30	0.0390	2026
				12.5*25	0.046	1666			
				16*15	0.072	1814	16*20	0.0442	1938
820	10*25	0.055	1447	12.5*25	0.039	2151	12.5*35	0.0325	2201
	12.5*20	0.046	1666	18*15	0.073	1949	18*20	0.0468	2184
1000	12.5*20	0.046	1798	12.5*25	0.039	2151	12.5*35	0.0273	2561
	16*15	0.072	1570	16*20	0.046	2238	16*25	0.0325	2241
2200	18*20	0.044	2188	18*25	0.031	2807	18*35	0.0221	3228
3300	18*25	0.029	2430	18*35	0.025	3685	18*45	0.0196	3987
4700	18*35	0.025	3191	18*45	0.021	4210			

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

Case Size ΦD X L (mm)

Maximum Impedance (Ω) at 20°C 100KHz

### SRS

SERIES Long Life Assurance(長壽命), High Ripple Current(高紋波), Low Impedance(低阻抗品)

#### ◆ DIMENSIONS

Voltage Cap(μF)	63V			100V			160V		
	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple
6.8				5*11	2.990	48			
10							10*16	2.925	219
12	5*11	2.990	48						
15				6.3*11	1.560	10			
18	5*11	2.990	69						
22	6.3*11	1.560	101				10*20	1.950	307
27				8*12	0.819	208			
33	6.3*11	1.560	101				12.5*20	1.391	386
39	8*12	0.819	189	8*16	0.585	223			
47	8*12	0.798	203	10*12.5	0.559	253	12.5*25	0.897	526
56	8*12	0.763	232	8*20	0.429	317			
68	8*12	0.720	263	10*16	0.403	313			
82	10*12.5	0.686	242	10*20	0.273	409			
				12.5*16	0.299	409			
100	8*16	0.585	263	10*25	0.260	466	16*25	0.455	798
	10*12.5	0.559	253						
120	10*16	0.403	313	10*30	0.195	581			
				12.5*20	0.208	605			
150	8*20	0.429	317	16*16	0.182	697			
				10*20	0.273	409			
180	12.5*15	0.299	398	12.5*25	0.156	688			
				18*16	0.156	807			
220	10*20	0.273	426	12.5*30	0.130	794	18*35	0.273	1202
	10*25	0.260	466						
	12.5*20	0.208	605	16*20	0.118	912			
270	16*15	0.182	697	12.5*35	0.108	921			
				16*25	0.095	1096			
330	10*30	0.195	703	12.5*40	0.092	1035			
	12.5*20	0.208	795	18*20	0.104	1088			
390	12.5*25	0.156	882	16*30	0.070	1377			
	18*15	0.156	900	18*25	0.074	1307			
470	12.5*30	0.130	998	16*35	0.059	1570			
	16*20	0.118	1035	18*30	0.061	1430			
560	16*25	0.095	1096	18*40	0.052	1772			
680	12.5*35	0.108	1126	18*35	0.052	1570			
	16*25	0.095	1238						
	18*20	0.084	1283						
820	12.5*40	0.092	1357	18*40	0.047	2044			
	16*30	0.070	1486						
	18*25	0.074	1480						
1000	16*30	0.070	1592						
	16*35	0.059	1643						
1500	18*35	0.052	1799						

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

Case Size ΦD X L (mm)

Maximum Impedance (Ω) at 20°C 100KHz

### SRS

SERIES Long Life Assurance(長壽命), High Ripple Current(高紋波), Low Impedance(低阻抗品)

#### ◆ DIMENSIONS

Voltage	200V			250V			400V		
Cap(μF)	Size	Imp	Ripple	Size	Imp	Ripple	Size	Imp	Ripple
2.2									
3.3							10*20	5.460	171
4.7				10*16	1.560	145	10*25	4.485	193
10	10*16	2.925	219	10*20	5.200	202	12.5*25	2.340	316
22	10*20	1.950	307	12.5*25	2.340	316	16*25	1.586	500
33	12.5*20	1.391	386	12.5*25	2.340	316	16*30	0.897	614
47	12.5*25	0.897	526	16*25	1.105	500	18*30	0.650	754
100	16*30	0.468	1017	18*35	0.585	820	18*45	0.500	1050
220	18*35	0.234	1202	18*40	0.520	877	25*40	0.380	1560

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

Case Size ΦD X L (mm)

Maximum Impedance (Ω) at 20°C 100KHz

Voltage	450V								
Cap(μF)	Size	Imp	Ripple						
2.2	10*16	10.270	96						
3.3	10*20	8.060	118						
4.7	12.5*20	4.810	158						
10	12.5*25	3.380	228						
22	16*30	1.300	421						
33	18*35	0.806	579						
47	18*40	0.720	728						
100	22*35	0.600	1038						
220	25*45	0.521	1482						

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

Case Size ΦD X L (mm)

Maximum Impedance (Ω) at 20°C 100KHz