

SW series Low Impedance, Long Life

- Features: 105°C 4000-10,000 hours Low Impedance and long Life
- Recommended Applications: Applicable for SMPS, Adaptor, Charger, Monitor/Computer
- Corresponding product to ROHS

SPECIFICATIONS

Item	Performance Characteristics																								
Operating Temperature Range	-40°C~105°C																								
Rated Voltage Range	6.3~63V																								
Capacitance Range	0.22~18000uF																								
Capacitance Tolerance	±20%, 120Hz, 20°C																								
Leakage Current (MAX)	$I \leq 0.01CV$ or $3\mu A$ whichever is greater. (after 2 minutes) I =Leakage Current(μA), C =Nominal Capacitance(μF), V =Rated Voltage(V)																								
Dissipation Factor ($\tan \delta$)	When nominal capacitance is over 1000uF, $\tan \delta$ shall be added 0.02 to the listed value with increase of every 1000uF. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Rated voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> </thead> <tbody> <tr> <td>Tan δ</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> </tr> </tbody> </table> <p style="text-align: right;">MAX (20°C 120Hz)</p>	Rated voltage(V)	6.3	10	16	25	35	50	63	Tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09								
Rated voltage(V)	6.3	10	16	25	35	50	63																		
Tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09																		
Low Temperature Stability Impedance Ratio	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Rated voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C) / Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-55°C) / Z(+20°C)</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> <p style="text-align: right;">MAX (20°C 120Hz)</p>	Rated voltage(V)	6.3	10	16	25	35	50	63	Z(-25°C) / Z(+20°C)	4	3	2	2	2	2	2	Z(-55°C) / Z(+20°C)	8	6	4	3	3	3	3
Rated voltage(V)	6.3	10	16	25	35	50	63																		
Z(-25°C) / Z(+20°C)	4	3	2	2	2	2	2																		
Z(-55°C) / Z(+20°C)	8	6	4	3	3	3	3																		
Load Life	After life test at conditions stated in the table below, the capacitors shall meet the following requirement. <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>Leakage Current</td> <td>Not more than the specified</td> <td rowspan="3"> <table border="1"> <thead> <tr> <th>Case Dia</th> <th colspan="2">Life Time (hrs)</th> </tr> <tr> <td></td> <th>6.3~10V</th> <th>16~63V</th> </tr> </thead> <tbody> <tr> <td>ΦD=5~6.3</td> <td>4000</td> <td>5000</td> </tr> <tr> <td>ΦD=8~10</td> <td>6000</td> <td>7000</td> </tr> <tr> <td>ΦD=13~18</td> <td>8000</td> <td>10000</td> </tr> </tbody> </table> </td> </tr> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified</td> </tr> </tbody> </table>	Leakage Current	Not more than the specified	<table border="1"> <thead> <tr> <th>Case Dia</th> <th colspan="2">Life Time (hrs)</th> </tr> <tr> <td></td> <th>6.3~10V</th> <th>16~63V</th> </tr> </thead> <tbody> <tr> <td>ΦD=5~6.3</td> <td>4000</td> <td>5000</td> </tr> <tr> <td>ΦD=8~10</td> <td>6000</td> <td>7000</td> </tr> <tr> <td>ΦD=13~18</td> <td>8000</td> <td>10000</td> </tr> </tbody> </table>	Case Dia	Life Time (hrs)			6.3~10V	16~63V	ΦD=5~6.3	4000	5000	ΦD=8~10	6000	7000	ΦD=13~18	8000	10000	Capacitance Change	Within ±20% of initial value	Dissipation Factor	Not more than 200% of the specified		
Leakage Current	Not more than the specified	<table border="1"> <thead> <tr> <th>Case Dia</th> <th colspan="2">Life Time (hrs)</th> </tr> <tr> <td></td> <th>6.3~10V</th> <th>16~63V</th> </tr> </thead> <tbody> <tr> <td>ΦD=5~6.3</td> <td>4000</td> <td>5000</td> </tr> <tr> <td>ΦD=8~10</td> <td>6000</td> <td>7000</td> </tr> <tr> <td>ΦD=13~18</td> <td>8000</td> <td>10000</td> </tr> </tbody> </table>	Case Dia		Life Time (hrs)			6.3~10V	16~63V	ΦD=5~6.3	4000	5000	ΦD=8~10	6000	7000	ΦD=13~18	8000	10000							
Case Dia	Life Time (hrs)																								
	6.3~10V		16~63V																						
ΦD=5~6.3	4000	5000																							
ΦD=8~10	6000	7000																							
ΦD=13~18	8000	10000																							
Capacitance Change	Within ±20% of initial value																								
Dissipation Factor	Not more than 200% of the specified																								
Shelf Life	After leaving at 105°C without voltage for applied 1000hours the capacitors shall meet the same requirement as load life																								

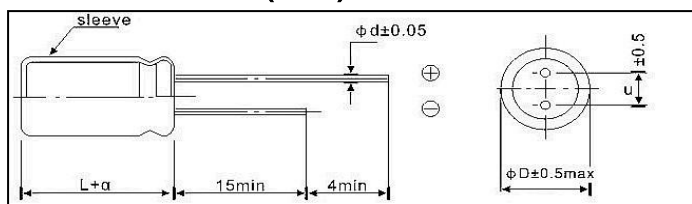
MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

Frequency(Hz) Cap(uF)	120	1k	10k	≥100k
6.8-180	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
4700uF Higher	0.85	0.95	0.98	1.00

SW series Low Impedance, Long Life

■ DIMENSIONS (mm)



ΦD	5	6.3	8	10	13	16	18
Φd	0.5			0.6		0.8	
F	2.0	2.5	3.5	5.0		7.5	
α	L≤16 : α=1.5				L≥16 : α=2.0		

■ STANDARD SIZE , MAXIMUM PERMISSIBLE RIPPLE CURRENT, IMPEDANCE

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 6.3V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance (ΩMAX)
	ΦD×L (mm)		20°C, 100kHz
150	5×11	180	0.725
330	6.3×12	300	0.383
680	8×12	610	0.201
820	8×16	800	0.163
1000	10×13	825	0.125
1500	8×20	1000	0.113
	10×16	1190	0.085
2200	10×20	1350	0.065
2700	10×25	1610	0.053
3300	13×21	1870	0.048
3900	13×25	2200	0.036
4700	13×30	2610	0.032
5600	13×25	2830	0.030
6800	13×40	3330	0.026
	16×25	2900	0.029
8200	16×32	3430	0.027
10000	16×36	3590	0.020
12000	18×32	4130	0.017
15000	18×36	4190	0.016

SW

series

Low Impedance, Long Life

Ripple Current(mA 105°C,100kHz)r.m.s

Rated voltage 10V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance(QMAX)
	ΦD×L(mm)		20°C,100kHz
100	5×11	190	0.723
220	6.3×12	310	0.382
470	8×12	600	0.205
680	8×16	820	0.163
1000	10×16	1180	0.087
1500	10×20	1350	0.065
2200	10×25	1610	0.054
2700	13×21	1885	0.049
3300	13×25	2200	0.037
3900	13×30	2610	0.033
4700	13×35	2850	0.030
5600	13×40	3320	0.026
	16×25	2910	0.030
6800	16×32	3410	0.028
8200	16×36	3580	0.021
10000	18×36	4200	0.017

Ripple Current(mA 105°C,100kHz)r.m.s

Rated voltage 16V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance(QMAX)
	ΦD×L(mm)		20°C,100kHz
56	5×11	180	0.723
100	6.3×12	310	0.382
220	6.3×12	540	0.300
	8×12	600	0.205
330	8×16	675	0.163
470	8×16	800	0.163
680	8×16	900	0.150
	10×16	1180	0.087
1000	8×16	1300	0.072
	10×20	1360	0.065
1500	10×20	1480	0.058
	10×25	1620	0.054
2200	13×25	2200	0.036
2700	13×30	2630	0.033
3300	13×35	2860	0.029
3900	13×40	3310	0.026
4700	16×25	3420	0.030
5600	16×36	3580	0.021
	18×32	4150	0.018
6800	18×36	4190	0.016

SW

series

Low Impedance, Long Life

Ripple Current(mA 105°C,100kHz)r.m.s

Rated voltage 25V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance(QMAX)
	ΦD×L(mm)		20°C,100kHz
47	5×11	180	0.722
100	6.3×12	310	0.383
150	8×12	620	0.201
220	8×12	620	0.201
330	8×16	810	0.163
470	10×16	1180	0.086
680	10×20	1360	0.065
820	10×25	1620	0.054
1000	13×21	1860	0.048
1500	13×25	2200	0.036
2200	13×35	2850	0.029
2700	16×25	2900	0.030
3300	16×32	3420	0.027
3900	18×32	4130	0.018
4700	18×36	4260	0.016

Ripple Current(mA 105°C,100kHz)r.m.s

Rated voltage 35V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance(QMAX)
	ΦD×L(mm)		20°C,100kHz
33	5×11	180	0.723
47	6.3×12	320	0.382
150	8×12	610	0.202
220	8×16	810	0.163
330	10×20	1380	0.065
470	10×25	1620	0.055
680	10×30	1880	0.046
	13×21	1870	0.048
820	13×25	2200	0.036
1000	13×25	2200	0.036
1200	13×30	2620	0.033
1500	13×35	2860	0.030
1800	13×40	3320	0.026
2200	16×32	3410	0.027
2700	16×36	3580	0.020
3300	18×36	4200	0.017

SW

series

Low Impedance, Long Life

Ripple Current(mA 105°C,100kHz)r.m.s

Rated voltage 50V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)
	ΦD×L(mm)		20°C,100kHz
10	5×11	70	2.425
22	5×11	180	2.310
33	6.3×12	310	1.205
47	6.3×12	310	1.205
100	8×12	525	0.635
120	8×16	700	0.452
150	8×20	880	0.332
220	10×16	1030	0.312
330	10×20	1370	0.215
470	10×30	1650	0.153
	13×21	1620	0.162
560	13×25	1930	0.123
680	13×30	2280	0.102
820	13×35	2490	0.085
1000	16×25	2525	0.075
1200	16×32	2980	0.056
1500	16×36	3120	0.047
1800	18×32	3600	0.049
2200	18×36	3630	0.043
2700	18×40	3760	0.040

Ripple Current(mA 105°C,100kHz)r.m.s

Rated voltage 63V			
Nominal capacitance (uF)	Size	Ripple Current	Impedance(ΩMAX)
	ΦD×L(mm)		20°C,100kHz
10	5×11	50	2.305
33	6.3×12	100	1.207
56	8×12	200	0.635
120	10×16	337	0.313
180	10×20	440	0.216
220	10×25	500	0.206
270	10×30	623	0.154
	13×21	660	0.165
330	13×25	754	0.127
470	13×30	880	0.103
560	13×35	1030	0.086
680	13×40	1140	0.075
820	16×32	1540	0.057
1000	16×36	1770	0.049
1200	16×40	2000	0.045