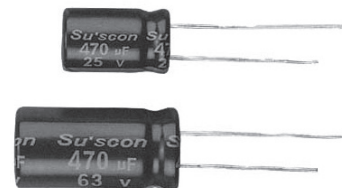


SD series

- High frequency and low impedance, high ripple current resistance.
- Suitable for return-circuit of switching power source.
- RoHS Compliance.
- 高頻低阻抗、耐高紋波。
- 適用於開關電源迴路。



SPECIFICATIONS

Items 項目	Characteristics 特性											
Capacitance Tolerance 靜電容量誤差	± 20%(120Hz,20°C)											
Operating Temperature Range 適用溫度範圍	-40 ~ +105°C						-25 ~ +105°C					
Rated Voltage Range 額定電壓範圍	6.3 ~ 400VDC						450VDC					
Leakage Current 洩漏電流	$V \leq 100V$ $I \leq 0.01CV$ or 3 (μA) (After 2 minutes application of DC rated voltage, at 20°C) $V > 100V$ $I \leq 0.03CV + 20$ (μA) (After 5 minutes application of DC rated voltage, at 20°C)											
Dissipation Factor 散逸因素($\tan \delta$)	Measurement Frequency: 120Hz. Temperature: 20°C											
	Rated Voltage(V)	6.3	10	16	25	35	50	63	100	160~250	400~450	
	$\tan \delta$ (Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.07	0.20	0.24	
When nominal capacitance over 1000 μF , $\tan \delta$ shall be added 0.02 to the listed value with increase of every 1000 μF .												
Low Temperature Stability 低溫特性 Impedance Ratio(Max) 阻抗比率(最大值)	Measurement Frequency: 120Hz.											
	Rated Voltage(V)	6.3	10	16	25	35	50	63	100	160~250	400	450
	Z(-25°C)/Z(20°C)	4	3	2	2	2	2	2	2	3	5	6
	Z(-40°C)/Z(20°C)	8	6	4	3	3	3	3	3	6	10	12
Load Life 負荷壽命	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105°C.											
	Capacitance Change	Within ± 20% of Initial Value										
	$\tan \delta$	200% or less of Initial Specified Value										
	Leakage Current	Initial Specified Value or less										
Shelf Life 放置壽命	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.											
	Capacitance Change	Within ± 20% of Initial Value										
	$\tan \delta$	200% or less of Initial Specified Value										
	Leakage Current	Initial Specified Value or less										
Standards 參照標準	JIS C 5101-4 (IEC 60384)											

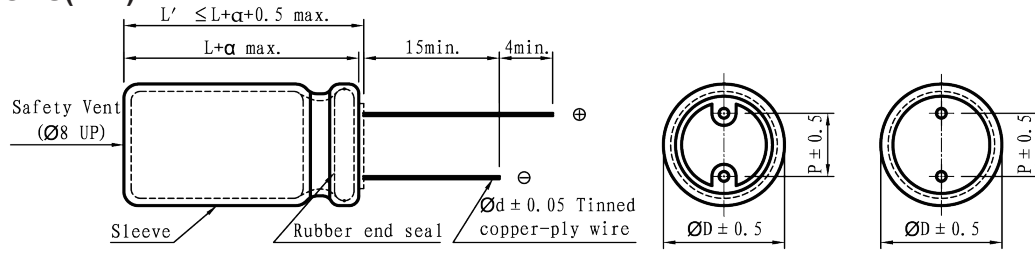
Frequency Coefficient of Permissible Ripple Current

Rated Voltage (V)	Capacitance (μF)	Frequency (Hz)				
		50	120	1K	10K	100K
6.3 ~ 100	0.47 ~ 100	0.45	0.55	0.75	0.90	1.00
	220 ~ 1000	0.60	0.70	0.85	0.95	1.00
	1500 ~ 15000	0.70	0.80	0.95	0.98	1.00
160 ~ 450	2.2 ~ 330	0.55	0.65	0.80	0.90	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

SD series

DIMENSIONS(mm)



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	0.5	0.5	0.6	0.6	0.8	0.8

α	(L < 16) 1.0
	(L \geq 16) 2.0

STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 100KHz ; IMP (Ω max)at 20°C 100KHz.

Cap (μ F)	V	6.3			10			16			25		
		Item	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.
4.7											5x11	50	1.500
10											5x11	80	1.500
22											5x11	110	0.800
47					5x11	140	0.650	5x11	170	0.650	5x11	170	0.650
68					5x11	160	0.650	5x11	210	0.550	6.3x11	210	0.550
100					5x11	180	0.650	6.3x11	270	0.300	6.3x11	270	0.300
220		6.3x11	270	0.300	6.3x11	270	0.300	8x12	440	0.200	8x12	440	0.200
330		6.3x11	320	0.300	8x12	440	0.200	8x12	440	0.200	10x13	650	0.100
470		8x12	440	0.200	8x12	440	0.200	10x13	650	0.100	10x16	800	0.075
680		8x12	440	0.200	10x13	650	0.100	10x16	800	0.075	10x20	1050	0.058
1000		10x13	650	0.100	10x16	800	0.075	10x20	1050	0.058	13x21	1350	0.055
1500		10x16	800	0.075	10x20	1050	0.058	13x21	1350	0.055	13x25	1650	0.040
2200		10x25	1350	0.055	13x21	1350	0.055	13x25	1650	0.043	16x26	2050	0.030
3300		13x21	1480	0.055	13x25	1650	0.043	16x26	2050	0.030	16x32	2550	0.027
4700		13x25	1820	0.035	16x26	2050	0.030	16x32	2550	0.027	18x35	2950	0.025
6800		16x26	2050	0.030	16x32	2550	0.027	18x35	2950	0.025	18x40	3300	0.023
10000		16x32	2550	0.027	18x35	2950	0.025	18x40	3300	0.023			
15000		16x35	2950	0.025	18x40	3300	0.023						

Cap (μ F)	V	35			50			63			100		
		Item	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.
0.47					5x11	25	7.500				5x11	20	15.00
1					5x11	40	5.300				5x11	30	15.00
2.2					5x11	55	4.500				5x11	44	9.800
3.3					5x11	65	3.900				5x11	58	6.600
4.7		5x11	85	2.000	5x11	90	2.300	5x11	65	4.494	5x11	74	4.600
10		5x11	100	1.200	5x11	110	1.400	5x11	110	2.252	6.3x11	130	1.805
22		5x11	120	1.000	5x11	140	1.200	6.3x11	200	1.000	8x12	230	1.360
33		5x11	210	0.430	6.3x11	240	0.480	6.3x11	250	0.900	10x13	320	0.460
47		6.3x11	270	0.300	6.3x11	240	0.480	8x12	320	0.800	10x16	400	0.390
68		8x12	360	0.300	8x12	300	0.300	10x13	380	0.760	10x20	420	0.288
100		8x12	440	0.200	8x12	400	0.250	10x13	450	0.580	13x21	580	0.208
220		10x13	650	0.100	10x16	600	0.170	10x20	780	0.170	16x26	880	0.104
330		10x16	800	0.075	10x20	800	0.150	13x21	950	0.142	16x32	930	0.088
470		10x20	1050	0.058	13x21	1050	0.090	13x25	1430	0.070	16x36	1230	0.072
680		13x21	1350	0.055	13x25	1150	0.070	16x26	1780	0.055	18x35	1410	0.064
1000		13x25	1650	0.043	16x26	1550	0.048	16x32	1900	0.043	18x40	1520	0.047
1500		16x26	2050	0.030	16x32	1950	0.043	18x35	2150	0.033			
2200		16x32	2550	0.027	18x35	2250	0.040	18x40	2350	0.032			
3300		18x35	2950	0.025									
4700		18x40	3300	0.023									

* 13mm may be replaced by 12.5mm upon customer's request.

SD

SD series

STANDARD RATINGS

D×L(mm) ; R.C.(mA rms) at 105°C 100KHz ; IMP (Ω max)at 20°C 100KHz.

Cap (μF)	V (Code)	160 (2C)			200 (2D)			250 (2E)			
		Item	D x L	R.C.	IMP	D x L	R.C.	IMP	D x L	R.C.	IMP
2.2								8x12	105	13.0	
3.3		8x12		104	11.0	8x12	113	11.0	8x12	122	11.0
4.7		8x12		112	6.50	8x12	126	6.10	10x13	140	4.30
10		10x13		180	4.30	10x13	210	3.80	10x16	300	3.50
22		10x16		250	3.00	10x20	465	2.70	13x21	485	2.80
33		10x20		570	1.90	10x25	600	1.40	13x21	620	2.13
47		13x21		730	1.20	13x21	730	1.20	13x25	810	1.60
68		13x21		850	0.86	13x25	985	0.70	16x26	1010	1.07
100		16x26		1285	0.50	16x26	1285	0.50	16x32	1405	0.62
220		16x36		1450	0.29	18x32	1510	0.36	18x40	1490	0.38
330		18x35		1850	0.26						

Cap (μF)	V (Code)	400 (2G)			450 (2W)			
		Item	D x L	R.C.	IMP	D x L	R.C.	IMP
2.2		6.3x12		50	27	8x12	60	28
		8x12		80	13	10x13	90	23
3.3		8x12		90	16.5	8x12	80	23
		10x13		110	8.2	10x16	126	20
4.7		8x12		90	9.5	8x14	95	12.5
		10x16		160	4.8	10x20	170	6.2
10		10x16		170	6.1	10x16	160	7.5
		10x20		195	3.0	13x21	280	3.7
22		13x21		290	4.0	13x21	280	7.0
		13x25		350	1.95	16x26	580	3.5
33		13x21		400	3.00	13x25	420	3.6
		13x25		480	1.50	16x26	610	1.6
47		13x25		530	1.25	16x26	650	1.9
		16x26		720	0.61	16x32	850	0.85
68		16x26		750	1.10	18x32	940	0.71
		16x32		820	0.55			
100		18x26		850	1.00	18x35	1000	1.00
		18x35		950	0.48	18x40	1100	0.43

※ 13mm may be replaced by 12.5mm upon customer's request.

SD