

SD series

- 105°C 2000 hours High frequency and low impedance, high ripple current resistance.
- Suitable for return-circuit of switching power source.
- RoHS Compliance
- 105°C 2000小時壽命，高頻低阻抗、耐高紋波
- 適用於開關電源迴路



SPECIFICATIONS

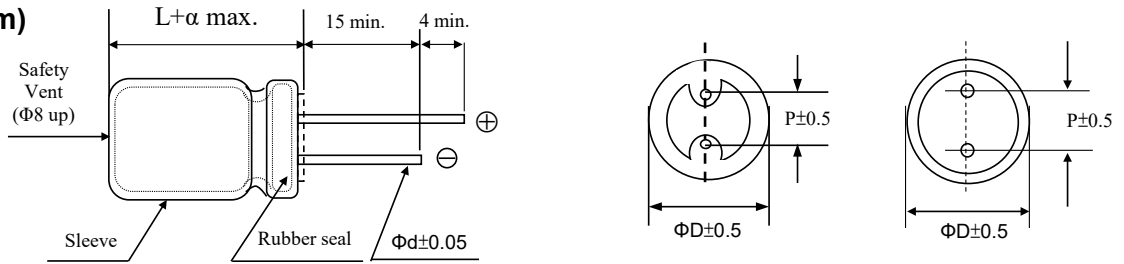
Items 項目	Characteristics 特性												
Capacitance Tolerance 靜電容量誤差	± 20%(120Hz,20°C)												
Operating Temperature Range 適用溫度範圍	-40 ~ +105°C						-25 ~ +105°C						
Rated Voltage Range 額定電壓範圍	6.3 ~ 400VDC						450VDC						
Leakage Current 洩漏電流	$V \leq 100V$ $I \leq 0.01CV$ or 3 (μA) (After 2 minutes 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	30	35	50	63	100	160~250	400~450	
	$\tan \delta$ (Max)	0.22	0.19	0.16	0.14	0.13	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	IEC 60384-4(JIS C5101-4)												

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

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DIMENSIONS(mm)



ΦD	5	6.3	8	10	12.5	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 < 20) 1.5
	(L ≥ 20) 2.0

STANDARD RATINGS

DxL(mm), R.C : (mA rms) at 105°C 100kHz , IMP:(Ω max) at 20°C,100kHz.

Cap (μF)	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	295	0.300	8x11.5	520	0.200	8x11.5	550	0.200
330	6.3x11	320	0.300		8x11.5	528	0.200	8x11.5	550	0.200	10x12.5	720	0.100
470	8x11.5	528	0.200		8x11.5	550	0.200	10x12.5	720	0.100	10x16	850	0.075
680	8x11.5	550	0.200		10x12.5	760	0.100	10x16	850	0.075	10x20	1200	0.058
1000	10x12.5	780	0.100		10x16	875	0.075	10x20	1200	0.058	12.5x20	1450	0.055
1500	10x16	950	0.075		10x20	1250	0.058	12.5x20	1450	0.055	12.5x25	1850	0.040
2200	10x25	1420	0.055		12.5x20	1450	0.055	12.5x25	1850	0.043	16x25	2250	0.030
3300	12.5x20	1550	0.055		12.5x25	1850	0.043	16x25	2250	0.030	16x31.5	2850	0.027
4700	12.5x25	1950	0.035		16x25	22250	0.030	16x31.5	2850	0.027	18x35.5	3120	0.025
6800	16x25	2460	0.030		16x31.5	2850	0.027	18x35.5	3120	0.025	18x40	3650	0.023
10000	16x31.5	2890	0.027		18x35.5	3120	0.025	18x40	3650	0.023			
15000	16x35.5	2950	0.025		18x40	3650	0.023						

Cap (μF)	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	8x11.5	280	1.360
33	5x11	210	0.430		6.3x11	240	0.480	6.3x11	250	0.900	10x12.5	450	0.460
47	6.3x11	270	0.300		6.3x11	240	0.480	8x11.5	420	0.800	10x16	650	0.390
68	8x11.5	525	0.300		8x11.5	525	0.300	10x12.5	525	0.760	10x20	750	0.288
100	8x11.5	550	0.200		8x11.5	550	0.250	10x12.5	550	0.580	12.5x20	950	0.208
220	10x12.5	720	0.100		10x16	720	0.170	10x20	850	0.170	16x25	1250	0.104
330	10x16	850	0.075		10x20	800	0.150	12.5x20	1250	0.142	16x31.5	1510	0.088
470	10x20	1200	0.058		12.5x20	1450	0.090	12.5x25	1500	0.070	16x36	1720	0.072
680	12.5x20	1450	0.055		12.5x25	1850	0.700	16x25	1780	0.055	18x35.5	1950	0.064
1000	12.5x25	1850	0.043		16x25	2250	0.048	16x31.5	2120	0.043	18x40	2320	0.047
1500	16x25	2250	0.030		16x31.5	2850	0.043	18x35.5	2310	0.033			
2200	16x31.5	2850	0.027		18x35.5	3120	0.040	18x40	2540	0.032			
3300	18x35.5	3120	0.025										
4700	18x40	3650	0.023										

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DxL(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								8x11.5	105	13
3.3		8x11.5	104	11	8x11.5	113	11	8x11.5	122	11
4.7		8x11.5	112	6.5	8x11.5	126	6.1	10x12.5	140	4.3
10		10x12.5	180	4.3	10x12.5	210	3.8	10x16	300	3.5
22		10x16	250	3.0	10x20	465	2.7	12.5x20	485	2.80
33		10x20	570	1.9	10x25	600	1.4	12.5x20	620	2.13
47		12.5x20	730	1.2	12.5x20	730	1.2	12.5x25	810	1.60
68		12.5x20	850	0.86	12.5x25	985	0.7	16x25	1010	1.07
100		16x25	1285	0.50	16x25	1285	0.5	16x31.5	1405	0.62
220		16x36	1450	0.29	18x31.5	1510	0.36	18x40	1490	0.38
330		18x35.5	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	27.0	8x11.5	60	28.0
		8x11.5	80	13.0	10x12.5	90	23.0
3.3		8x11.5	90	16.5	8x11.5	80	23.0
		10x12.5	110	8.20	10x16	126	20.0
4.7		8x11.5	90	9.50	8x14	95	12.5
		10x16	160	4.80	10x20	170	6.20
10		10x16	170	6.10	10x16	160	7.50
		10x20	195	3.00	12.5x20	280	3.70
22		12.5x20	290	4.00	12.5x20	280	7.00
		12.5x25	350	1.95	16x25	580	3.50
33		12.5x20	400	3.00	12.5x25	420	3.60
		12.5x25	480	1.50	16x25	610	1.60
47		12.5x25	530	1.25	16x25	650	1.90
		16x25	720	1.10	16x31.5	850	0.85
68		16x25	750	1.10	18x31.5	940	0.71
		16x31.5	820	0.55			
100		18x26	850	1.00	18x35.5	1000	1.00
		18x35.5	950	0.48	18x40	1100	0.43

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