

SP Series

The usage as same as SP series.
 Used in video, OA equipment, power supply as a filter which have a higher ripple current and temperature(105°C).

SPECIFICATION

ITEM	SPECIFICATION															
Capacitance Tolerance (120Hz 20°C)	±20%(M)															
Rated Working Voltage	10~100VV								160~400VV							
Operation Temperature Range	-40 ~ +105°C															
Surge voltage(V) (20°C)	WV	10	16	25	35	50	63	80	100	160	180	200	250	315	350	400
	SV	13	20	32	44	63	79	100	125	200	225	250	300	365	400	450
Leakage Current (20°C)	1 ≤ 0.02CV or 3mA															
	Whichever is greater, after 5 minutes rated voltage applied I: Leakage Current(μA) C: Rated Capacitance(μF) V: Working Voltage(V)															
Dissipation Factor(tan δ) (120Hz 20°C)	Dissipation factor at 20°C, 120Hz shall not exceed the values showed in the table of standard rating. Add 2% per 1000 μF for more than 1000 μF															
	After 2000 hours application of W.V. at 105°C. The capacitor shall meet the following limits.															
Load Life	Capacitance Change								≤ ±20% of initial Value							
	Dissipation Factor								≤ 200% of initial Specified Value							
	Leakage Current								≤ Initial Specified Value							
Shelf Life	After 500 hours to place at 105°C without rated voltage applied. The capacitor shall meet the limits as same as load life.															
Others	Satisfied JIS C-5141															

RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

Freq.(Hz)	50	60	120	400	1K	2.4K	5K	10K~
Coefficient	0.80	0.85	1.00	1.14	1.23	1.30	1.36	1.40

Temperature Multipliers

Temp.(°C)	40	45	50	55	60	65	70	75	80	85
Coefficient	2.32	2.21	2.10	1.98	1.85	1.72	1.57	1.40	1.22	1.00

at 120Hz

10 VDC					16 VDC					25 VDC				
CAP. (μF)	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL		
3900									0.136	1.40	40	22×25		
4700									0.112	1.55	40	22×30		
5600									0.094	1.75	40	22×30 25×25		
6800					0.097	1.60	50	22×25	0.078	1.95	40	22×35 25×30		
8200					0.080	1.80	50	22×30 25×25	0.064	2.20	40	22×40 25×35 30×25		
10000	0.066	1.60	50	22×25	0.066	2.05	50	22×35 25×30	0.053	2.50	40	22×45 25×40 30×30		
12000	0.055	1.80	50	22×30 25×25	0.055	2.30	50	22×40 25×30 30×25	0.044	2.80	40	22×50 25×45 30×35 35×25		
15000	0.044	2.05	50	22×35 25×30	0.044	2.65	50	22×45 25×35 30×30	0.035	3.20	40	25×50 30×40 35×30		
18000	0.044	2.30	50	22×40 25×30 30×25	0.036	3.00	50	22×50 25×40 30×30 35×25	0.036	3.60	40	30×45 35×35		
22000	0.036	2.65	50	22×45 25×35 30×30	0.030	3.40	50	25×45 30×35 35×30	0.030	4.05	40	30×50 35×40		
27000	0.029	3.00	50	25×40 30×30 35×25	0.029	3.85	50	30×40 35×35	0.029	4.65	40	35×45		
33000	0.024	3.40	50	25×45 30×35 35×30	0.024	4.35	50	30×50 35×40						
39000	0.023	3.75	50	25×50 30×40 35×30	0.023	4.85	50	35×45						
47000	0.019	4.20	60	30×45 35×35	0.019	5.45	50	35×50						
56000	0.018	4.70	60	35×40										
68000	0.015	5.30	60	35×50										

at 120Hz

35 VDC					50 VDC					63 VDC				
CAP. (μF)	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL		
1200									0.276	1.15	25	22×25		
1500					0.265	1.20	30	22×25	0.221	1.35	25	22×30 25×25		
1800					0.221	1.35	30	22×30	0.184	1.50	25	22×35 25×30		
2200					0.180	1.50	30	22×30 25×25	0.150	1.70	25	22×40 25×30 30×25		
2700	0.172	1.25	35	22×25	0.147	1.75	30	22×35 25×30	0.122	1.95	25	22×45 25×35 30×30		
3300	0.140	1.40	35	22×30	0.120	1.95	30	22×40 25×30 30×25	0.100	2.20	25	25×40 30×30 35×25		
3900	0.119	1.60	35	22×30	0.102	2.20	30	22×45 25×35 30×30	0.085	2.45	25	25×45 30×35 35×30		
4700	0.098	1.80	35	22×35 25×25	0.084	2.45	30	22×50 25×40 30×30 35×25	0.070	2.75	25	25×50 30×40 35×30		
5600	0.082	2.00	35	22×40 25×30 30×25	0.071	2.75	30	25×45 30×35 35×30	0.059	3.10	25	30×45 35×35		
6800	0.068	2.30	35	22×45 25×35 30×30	0.058	3.10	30	30×40 35×30	0.048	3.45	25	30×50 35×40		
8200	0.056	2.60	35	22×50 25×40 30×30 35×25	0.048	3.50	30	30×45 35×35	0.040	3.85	25	35×45		
10000	0.053	2.95	35	25×45 30×35 35×30	0.046	4.00	30	35×40						
12000	0.044	3.30	35	25×50 30×40 35×30	0.038	4.45	30	35×50						
15000	0.035	3.75	35	30×45 35×35										
18000	0.029	4.20	35	35×40										
22000	0.024	4.80	35	35×50										

at 120Hz

80 VDC					100 VDC					160 VDC				
CAP. (μF)	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL		
270									0.737	0.95	15	22×25		
330									0.63	1.10	15	22×30		
390									0.510	1.20	15	22×30 25×25		
470									0.423	1.35	15	22×35 25×30		
560					0.473	1.05	20	22×25	0.355	1.50	15	22×40 25×30 30×25		
680					0.390	1.15	20	22×30	0.292	1.65	15	25×45 25×35 30×30		
820	0.323	1.05	20	22×25	0.323	1.30	20	22×30 25×25	0.242	1.90	15	25×50 25×40 30×30 35×25		
1000	0.265	1.20	20	22×30	0.265	1.50	20	22×35 25×30	0.199	2.10	15	25×45 30×35 35×30		
1200	0.221	1.30	20	22×35 25×25	0.221	1.70	20	22×40 25×35 30×25	0.165	2.40	15	30×40 35×35		
1500	0.176	1.50	20	22×40 25×30 30×25	0.176	1.90	20	22×45 25×40 30×30 35×25	0.132	2.75	15	30×50 35×40		
1800	0.147	1.70	20	22×45 25×35 30×30	0.147	2.15	20	25×45 30×35 35×30	0.110	3.05	15	35×45		
2200	0.120	1.95	20	25×40 30×30 35×25	0.120	2.45	20	25×50 30×40 35×30	0.090	3.50	15	35×50		
2700	0.098	2.20	20	25×45 30×35 35×30	0.098	2.80	20	30×45 35×35						
3300	0.080	2.50	20	30×40 35×35	0.080	3.15	20	30×50 35×40						
3900	0.068	2.75	20	30×45 35×35	0.068	3.50	20	35×45						
4700	0.056	3.10	20	35×40	0.056	3.80	20	35×50						
5600	0.047	3.45	20	35×50										

at 120Hz

180 VDC					200 VDC					250 VDC				
CAP. (μF)	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL		
150									1.326	0.70	15	22×25		
180									1.105	0.80	15	22×30		
220					0.904	0.85	15	22×25	0.904	0.90	15	22×30 25×25		
270	0.737	0.95	15	22×25	0.737	0.95	15	22×30	0.737	1.00	15	22×35 25×30 30×25		
330	0.603	1.10	15	22×30	0.603	1.10	15	22×30 25×25	0.603	1.15	15	22×40 25×30 30×25		
390	0.510	1.20	15	22×35 25×25	0.520	1.20	15	22×35 25×30	0.510	1.25	15	22×45 25×35 30×30		
470	0.423	1.35	15	22×40 25×30	0.423	1.35	15	22×40 25×30 30×25	0.423	1.40	15	22×50 25×40 30×30 35×25		
560	0.355	1.50	15	22×45 25×35 30×25	0.355	1.50	15	22×45 25×35 30×30	0.355	1.60	15	25×45 30×35 35×30		
680	0.292	1.65	15	22×50 25×40 30×30 35×25	0.292	1.65	15	25×40 30×30 35×25	0.292	1.80	15	25×50 30×40 30×30 35×35		
820	0.242	1.90	15	25×45 30×35 35×30	0.242	1.90	15	25×50 30×35 35×30	0.242	2.00	15	30×45 35×35		
1000	0.199	2.10	15	25×50 30×40 35×30	0.199	2.10	15	30×45 35×35	0.199	2.30	15	35×40		
1200	0.165	2.40	15	30×45 35×35	0.165	2.40	15	30×50 35×40	0.165	2.55	15	35×50		
1500	0.132	2.75	15	35×40	0.132	2.75	15	35×45						
1800	0.110	3.05	15	35×50										

at 120Hz

315 VDC					350 VDC					400 VDC				
CAP. (μF)	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL	ESR 20°C (Ω)	R.C. 85°C (A)	D.F. 20°C (%)	DIMENSIONS(mm) Ø DXL		
68									4.878	0.50	25	22×25		
82	3.236	0.05	20	22×25	3.236	0.55	20	22×25	4.045	0.55	25	22×30 25×25		
100	2.653	0.60	20	22×30	2.653	0.60	20	22×30 25×25	3.317	0.60	25	22×35 25×25		
120	2.211	0.65	20	22×30 25×25	2.211	0.70	20	22×35 25×30	2.784	0.70	25	22×40 25×30 30×25		
150	1.769	0.75	20	22×35 25×30	1.769	0.80	20	22×40 25×30 30×25	2.211	0.80	25	22×45 25×35 30×30 35×25		
180	1.474	0.85	20	22×40 25×30 30×25	1.474	0.90	20	22×45 25×35 30×30	1.843	0.90	25	25×50 25×40 30×30 35×25		
220	1.206	0.95	20	22×45 25×35 30×30	1.206	1.00	20	22×50 25×40 30×30 35×25	1.507	1.00	25	25×45 30×35 35×30		
270	0.982	1.05	20	25×45 30×35 35×25	0.982	1.15	20	25×45 30×35 35×30	1.228	1.15	25	25×50 30×40 35×30		
330	0.804	1.20	20	25×50 30×40 35×30	0.804	1.30	20	30×40 35×35	1.005	1.30	25	30×45 35×35		
390	0.680	1.35	20	30×45 35×35	0.680	1.45	20	30×45 35×40	0.850	1.45	25	30×50 35×40		
470	0.564	1.												