

PD series

- Endurance: +105°C 2,000 hours
- Low ESR, Small Size
- Recommended Applications: High order main board, Industrial computer
- RoHS Compliant and lead-free

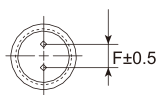
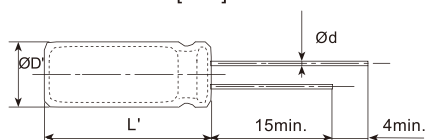


Conductive Polymer
Radial Type

SPECIFICATIONS

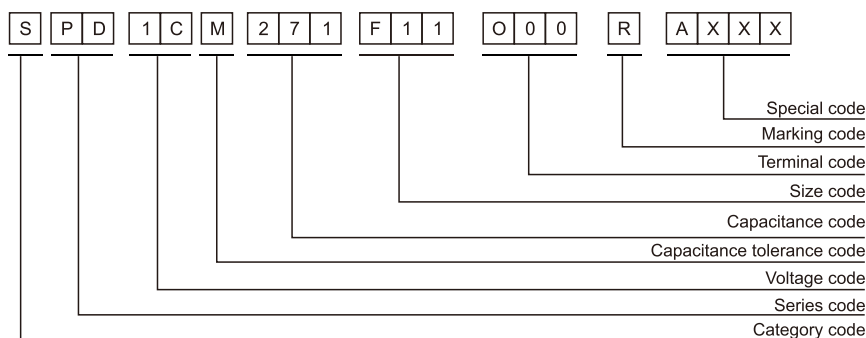
Items	Characteristics	
Category Temperature Range	-55~+105°C	
Rated Working Voltage Range	6.3~35 V _{dc}	
Nominal Capacitance Range	47~4700μF	
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)	
DC Leakage Current	I ≤ 0.2CV or 500μA, whichever is greater. Where, I: Max. leakage current (μA), C: Nominal capacitance (μF), V: Rated voltage (V) (at 20°C after 2 minutes)	
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	6.3 6.8 7.5 10 16 20 35
	tanδ (max.)	0.08 0.12 (at 20°C, 120Hz)
ESR(100kHz, 20°C)	Value in characteristics table	
Temperature Characteristic (Impedance Ratio at 100kHz)	Z(+105°C)/Z(+20°C) ≤ 1.25 Z(-55°C)/Z(+20°C) ≤ 1.25	
Endurance	After applying rated voltage for 2,000 hours at 105°C, the capacitors shall meet the following requirements.	
	Appearance	No significant damage
	Capacitance Change	≤ ±20% of the initial value
	D.F. (tanδ)	≤ 150% of the initial specified value
	ESR	≤ 150% of the initial specified value
	Leakage Current	≤ The initial specified value
Humidity Test	After subjecting to 90%~95% RH for 2,000 hours at 60°C without voltage applied, the capacitors shall meet the specified values for the endurance characteristics listed above.	
Surge Test	After subjecting to 1,000 cycles each consisting of charge with the surge voltage specified at normal temperature for 30 seconds through a protective resistor and discharge for 5 minutes 30 seconds, the capacitors shall meet the following requirements.	
	Appearance	No significant damage
	Capacitance Change	≤ ±20% of the initial value
	D.F. (tanδ)	≤ 150% of the initial specified value
	ESR	≤ 150% of the initial specified value
	Leakage Current	≤ The initial specified value

DIMENSIONS[mm]



ØD	5	5.5	6.3	8	10
Ød	0.5	0.5	0.5	0.6	0.6
F	2.0	2.5	2.5	3.5	5.0
ØD'	ØD-0.1~+0.5				
L'	L+1.0max.		L-0.5~+1		

PART NUMBERING SYSTEM



PD series

■ STANDARD RATINGS

VDC (SV)	Cap (μF)	Size ΦDxL(mm)	ESR (mΩ, 20°C, 100kHz) (max.)	Rated ripple current (mA rms/105°C, 100kHz)	Leakage Current (μA)(max.)	Part Number
6.3 (7.2)	220	5×7	18	3600	500	SPD0JM221D07000RAXXX
	270	5×7	18	3900	500	SPD0JM271D07000RAXXX
	330	5×8	18	4200	500	SPD0JM331D08000RAXXX
	390	5×9	18	4300	500	SPD0JM391D09000RAXXX
	470	5×10	18	4500	592	SPD0JM471D10000RAXXX
		5.5×9	18	4300	592	SPD0JM471B09000RAXXX
		6.3×7	18	4000	592	SPD0JM471E07000RAXXX
	500	5×9	18	4300	630	SPD0JM501D09000RAXXX
		6.3×7	18	4400	706	SPD0JM561E07000RAXXX
		5.5×9	18	4500	706	SPD0JM561B09000RAXXX
	680	6.3×9	18	5300	857	SPD0JM681E09000RAXXX
		5.5×9	18	5000	857	SPD0JM681B09000RAXXX
		5.5×11	18	5000	1033	SPD0JM821B11000RAXXX
	820	6.3×9	18	5300	1033	SPD0JM821E09000RAXXX
		6.3×10	9	5400	1260	SPD0JM102E10000RAXXX
	1000	8×9	10	5000	1260	SPD0JM102F09000RAXXX
	1500	8×11	9	5600	1890	SPD0JM152F11000RAXXX
	1800	10×10	9	5800	2268	SPD0JM182G10000RAXXX
	2200	8×14	9	5900	2772	SPD0JM222F14000RAXXX
		10×12	9	6000	2772	SPD0JM222G12000RAXXX
	3300	10×14	9	6100	4158	SPD0JM332G14000RAXXX
6.8 (7.8)	47	6.3×5	40	1100	500	SPD0CM470E05000RAXXX
	82	6.3×5	40	1100	500	SPD0CM820E05000RAXXX
	100	4×7	30	1500	500	SPD0CM101C07000RAXXX
		5×7	30	1800	500	SPD0CM101D07000RAXXX
		6.3×6	40	1900	500	SPD0CM101E06000RAXXX
	150	4×7	30	2100	500	SPD0CM151C07000RAXXX
		5×7	30	2600	500	SPD0CM151D07000RAXXX
		5×7	20	3500	500	SPD0CM221D07000RAXXX
	220	6.3×7	20	3550	500	SPD0CM221E07000RAXXX
		6.3×8	15	3600	500	SPD0CM221E08000RAXXX
		5×7	20	3800	500	SPD0CM271D07000RAXXX
	270	5×6	20	3200	500	SPD0CM271D06000RAXXX
		5×8	20	4000	500	SPD0CM331D08000RAXXX
		6.3×5	25	3160	500	SPD0CM331E05000RAXXX
	330	6.3×8	15	4000	500	SPD0CM331E08000RAXXX
		5×9	20	4100	530	SPD0CM391D09000RAXXX
		5×10	20	4300	639	SPD0CM471D10000RAXXX
	470	5.5×9	20	4100	639	SPD0CM471B09000RAXXX
		6.3×7	20	3900	639	SPD0CM471E07000RAXXX
		6.3×8	15	4400	639	SPD0CM471E08000RAXXX
	500	5×9	20	4100	680	SPD0CM501D09000RAXXX
		6.3×7	20	4200	762	SPD0CM561E07000RAXXX
		6.3×8	20	4800	762	SPD0CM561E08000RAXXX
	560	5.5×9	20	4300	762	SPD0CM561B09000RAXXX
		6.3×9	20	5080	925	SPD0CM681E09000RAXXX
		5.5×9	20	4800	925	SPD0CM681B09000RAXXX
	680	8×9	20	4600	925	SPD0CM681F09000RAXXX
		5.5×10	20	4800	1115	SPD0CM821B10000RAXXX
		6.3×9	20	5080	1115	SPD0CM821E09000RAXXX
	820	8×9	15	4700	1115	SPD0CM821F09000RAXXX
		6.3×10	10	5150	1360	SPD0CM102E10000RAXXX
		8×9	12	4800	1360	SPD0CM102F09000RAXXX
	1000	8×11	10	5200	1360	SPD0CM102F11000RAXXX
		6.3×11	10	5200	1632	SPD0CM122E11000RAXXX
		8×11	10	5300	1632	SPD0CM122F11000RAXXX
	1200	8×11	10	5400	2040	SPD0CM152F11000RAXXX
		10×12	10	5500	2040	SPD0CM152G12000RAXXX
		10×10	10	5560	2448	SPD0CM182G10000RAXXX
	2200	8×14	10	5700	2992	SPD0CM222F14000RAXXX
		10×12	10	5800	2992	SPD0CM222G12000RAXXX
		10×14	10	5900	4488	SPD0CM332G14000RAXXX
	3300	10×14	10	6100	5000	SPD0CM472G17000RAXXX
	4700	10×17	10	6100	5000	SPD0CM472G17000RAXXX
7 (8.1)	150	5×6	30	1500	500	SPD0QM151D06000RAXXX
	220	5×7	20	3200	500	SPD0QM221D07000RAXXX
	270	5×8	20	3400	500	SPD0QM271D08000RAXXX
	330	5×9	20	3600	500	SPD0QM331D09000RAXXX
	470	6.3×8	20	3800	658	SPD0QM471E08000RAXXX
		5.5×9	20	3600	658	SPD0QM471B09000RAXXX
	560	6.3×8	20	4000	784	SPD0QM561E08000RAXXX
	680	6.3×8	12	4200	952	SPD0QM681E08000RAXXX
7.5 (8.6)	470	6.3×10	12	4500	1148	SPD0QM821E10000RAXXX
		8×9	12	4600	1148	SPD0QM821F09000RAXXX
		5×8	25	3100	500	SPD0AM221D07000RAXXX
	270	5×8	20	3300	500	SPD0AM271D08000RAXXX
		5×9	20	3500	500	SPD0AM331D09000RAXXX
		5×9	20	3500	585	SPD0AM391D09000RAXXX
	390	6.3×7	25	3200	705	SPD0AM471E07000RAXXX
		5.5×9	20	3550	705	SPD0AM471B09000RAXXX
		5×9	20	3550	705	SPD0AM471D09000RAXXX
	470	5.5×8	25	3100	705	SPD0AM471B08000RAXXX

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VDC (SV)	Cap (μF)	Size ΦDxL(mm)	ESR (mΩ, 20°C, 100kHz) (max.)	Rated ripple current (mA rms/105°C, 100kHz)	Leakage Current (μA)(max.)	Part Number
7.5 (8.6)	500	5.5×9	20	3600	750	SPD0AM501B09O00RAXXX
	560	6.3×8	20	3900	840	SPD0AM561E08O00RAXXX
	680	6.3×9	12	4100	1020	SPD0AM681E09O00RAXXX
	820	6.3×10	12	4400	1230	SPD0AM821E10O00RAXXX
		8×9	12	4550	1230	SPD0AM821F09O00RAXXX
	1000	8×11	12	4700	1500	SPD0AM102F11O00RAXXX
		6.3×11	12	4500	1500	SPD0AM102E11O00RAXXX
	1200	8×11	12	4800	1800	SPD0AM122F11O00RAXXX
	1500	8×11	12	4900	2250	SPD0AM152F11O00RAXXX
	1800	8×14	12	5100	2700	SPD0AM182F14O00RAXXX
10 (11.5)	100	5×7	31	2500	500	SPD1AM101D07O00RAXXX
		6.3×5	27	2400	500	SPD1AM101E05O00RAXXX
	120	5×7	18	2500	500	SPD1AM121D07O00RAXXX
	150	5×7	18	2600	500	SPD1AM151D07O00RAXXX
	180	6.3×7	18	2900	500	SPD1AM181E07O00RAXXX
		5×8	18	2800	500	SPD1AM181D08O00RAXXX
	220	5×9	18	2900	500	SPD1AM221D09O00RAXXX
		6.3×5	22	2900	500	SPD1AM221E05O00RAXXX
	270	6.3×8	18	3200	540	SPD1AM271E08O00RAXXX
	330	6.3×8	18	3400	660	SPD1AM331E08O00RAXXX
	390	6.3×8	18	3500	780	SPD1AM391E08O00RAXXX
		5.5×9	18	3500	940	SPD1AM471B09O00RAXXX
	470	6.3×8	18	3600	940	SPD1AM471E08O00RAXXX
		8×9	13	3700	940	SPD1AM471F09O00RAXXX
	560	6.3×10	11	3700	1120	SPD1AM561E10O00RAXXX
		8×9	13	3700	1120	SPD1AM561F09O00RAXXX
	680	8×8	18	3400	1360	SPD1AM681F08O00RAXXX
	820	8×11	10	4200	1640	SPD1AM821F11O00RAXXX
	1000	8×11	10	4400	2000	SPD1AM102F11O00RAXXX
	1200	8×12	9	4700	2400	SPD1AM122F12O00RAXXX
	1500	8×14	9	5000	3000	SPD1AM152F14O00RAXXX
	1800	10×13	9	6000	3600	SPD1AM182G13O00RAXXX
12 (13.8)	47	5×7	35	2200	500	SPD1TM470D07O00RAXXX
	56	5×7	35	2250	500	SPD1TM560D07O00RAXXX
	68	5×7	35	2300	500	SPD1TM680D07O00RAXXX
	82	5×7	35	2350	500	SPD1TM820D07O00RAXXX
		5×7	35	2400	500	SPD1TM101D07O00RAXXX
	100	6.3×5	30	2300	500	SPD1TM101E05O00RAXXX
		5×5	30	2000	500	SPD1TM101D05O00RAXXX
	120	5×7	20	2450	500	SPD1TM121D07O00RAXXX
		5×7	20	2500	500	SPD1TM151D07O00RAXXX
	150	6.3×7	20	2800	500	SPD1TM181E07O00RAXXX
		5×8	20	2700	500	SPD1TM181D08O00RAXXX
	220	5×9	20	2820	528	SPD1TM221D09O00RAXXX
		6.3×5	25	2800	528	SPD1TM221E05O00RAXXX
	270	6.3×8	15	3160	528	SPD1TM221E08O00RAXXX
		6.3×8	20	3100	648	SPD1TM271E08O00RAXXX
	330	6.3×8	20	3300	792	SPD1TM331E08O00RAXXX
		8×9	15	3400	792	SPD1TM331F09O00RAXXX
	390	6.3×10	12	3500	792	SPD1TM331E10O00RAXXX
		6.3×8	20	3400	936	SPD1TM391E08O00RAXXX
	470	5.5×9	20	3400	1128	SPD1TM471B09O00RAXXX
		6.3×8	20	3500	1128	SPD1TM471E08O00RAXXX
	560	8×9	15	3550	1128	SPD1TM471F09O00RAXXX
		8×11	12	5650	1128	SPD1TM471F11O00RAXXX
	680	6.3×10	13	3600	1344	SPD1TM561E10O00RAXXX
		8×9	15	3600	1344	SPD1TM561F09O00RAXXX
	820	6.3×11	15	3800	1632	SPD1TM681E11O00RAXXX
		8×11	12	3900	1632	SPD1TM681F11O00RAXXX
	1000	8×8	20	3300	1632	SPD1TM681F08O00RAXXX
		8×11	12	4000	1968	SPD1TM821F11O00RAXXX
	1200	8×11	12	4200	2400	SPD1TM102F11O00RAXXX
	1500	10×12	10	5300	2400	SPD1TM102G12O00RAXXX
		10×12	10	5450	2880	SPD1TM122G12O00RAXXX
	1800	10×12	10	5500	3600	SPD1TM152G12O00RAXXX
		8×14	10	4800	3600	SPD1TM152F14O00RAXXX
	2200	10×13	10	5800	4320	SPD1TM182G13O00RAXXX
	3300	10×15	10	6100	5000	SPD1TM222G15O00RAXXX
		10×18	10	6200	5000	SPD1TM332G18O00RAXXX
16 (18.4)	57	5×7	18	2300	500	SPD1CM101D07O00RAXXX
	100	6.3×5	22	2200	500	SPD1CM101E05O00RAXXX
		5×8	18	2400	500	SPD1CM121D08O00RAXXX
	150	5×8	18	2500	500	SPD1CM151D08O00RAXXX
		6.3×5	27	2300	576	SPD1CM181E05O00RAXXX
	180	5×8	18	2500	576	SPD1CM181D08O00RAXXX
		5×10	18	2700	704	SPD1CM221D10O00RAXXX
	220	6.3×5	25	2800	704	SPD1CM221E05O00RAXXX
		6.3×8	18	2800	704	SPD1CM221E08O00RAXXX
	270	6.3×8	18	2900	864	SPD1CM271E08O00RAXXX
		6.3×7	18	3000	1056	SPD1CM331E07O00RAXXX
	330	6.3×7	18	3000	1056	SPD1CM331E07O00RAXXX

PD series

■ STANDARD RATINGS

VDC (SV)	Cap (μF)	Size ΦDxL(mm)	ESR (mΩ, 20°C, 100kHz) (max.)	Rated ripple current (mA rms/105°C, 100kHz)	Leakage Current (μA)(max.)	Part Number
16 (18.4)	470	5.5×10	18	3100	1504	SPD1CM471B10O00RAXXX
		8×9	11	3400	1504	SPD1CM471F09O00RAXXX
	560	8×11	13	3300	1792	SPD1CM561F11O00RAXXX
	680	8×11	13	3500	2176	SPD1CM681F11O00RAXXX
	820	8×13	9	3600	2624	SPD1CM821F13O00RAXXX
	1000	8×14	10	3700	3200	SPD1CM102F14O00RAXXX
	1200	10×12	10	4400	3840	SPD1CM122G12O00RAXXX
20 (23.0)	1500	10×12	10	5000	4800	SPD1CM152G12O00RAXXX
	33	5×8	40	1900	500	SPD1DM330D08O00RAXXX
	39	5×8	40	1950	500	SPD1DM390D08O00RAXXX
	47	5×8	40	2200	500	SPD1DM470D08O00RAXXX
	56	5×9	40	2100	500	SPD1DM560D09O00RAXXX
	68	6.3×8	30	2100	500	SPD1DM680E08O00RAXXX
	82	6.3×8	30	2150	500	SPD1DM820E08O00RAXXX
	100	6.3×8	30	2200	500	SPD1DM101E08O00RAXXX
	120	6.3×8	30	2300	500	SPD1DM121E08O00RAXXX
	150	6.3×10	20	2350	600	SPD1DM151E10O00RAXXX
	180	8×9	30	2450	720	SPD1DM181F09O00RAXXX
	220	8×11	20	2550	880	SPD1DM221F11O00RAXXX
	270	8×11	20	2700	1080	SPD1DM271F11O00RAXXX
	330	8×11	20	2800	1320	SPD1DM331F11O00RAXXX
		6.3×11	20	2100	1320	SPD1DM331E11O00RAXXX
		10×12	20	2900	1880	SPD1DM471G12O00RAXXX
	470	8×16	20	3000	1880	SPD1DM471F16O00RAXXX
		8×11	20	2400	1880	SPD1DM471F11O00RAXXX
		10×12	20	3100	1880	SPD1DM471G12O00RAXXX
		8×16	20	3200	1880	SPD1DM471F16O00RAXXX
	680	10×15	20	3300	2720	SPD1DM681G15O00RAXXX
		8×14	20	2700	2720	SPD1DM681F14O00RAXXX
	820	10×18	20	3400	3280	SPD1DM821G18O00RAXXX
	1000	10×18	20	3900	4000	SPD1DM102G18O00RAXXX
25 (28.8)	47	5×9	54	2000	500	SPD1EM470D09O00RAXXX
	56	5×9	54	2100	500	SPD1EM560D09O00RAXXX
	68	6.3×7	27	2200	500	SPD1EM680E07O00RAXXX
	82	6.3×7	27	2200	500	SPD1EM820E07O00RAXXX
	100	6.3×8	27	2600	500	SPD1EM101E08O00RAXXX
	120	6.3×8	27	2600	600	SPD1EM121E08O00RAXXX
	150	6.3×10	18	2900	750	SPD1EM151E10O00RAXXX
	180	6.3×10	18	2900	900	SPD1EM181E10O00RAXXX
	220	5.5×10	18	1900	1100	SPD1EM221B10O00RAXXX
	270	8×11	18	3100	1350	SPD1EM271F11O00RAXXX
	330	8×11	18	3200	1650	SPD1EM331F11O00RAXXX
	470	8×11	18	3100	2350	SPD1EM471F11O00RAXXX
		10×10	25	2300	2350	SPD1EM471G10O00RAXXX
	560	10×12	18	4200	2800	SPD1EM561G12O00RAXXX
	680	10×12	18	4300	3400	SPD1EM681G12O00RAXXX
		8×14	18	3500	3400	SPD1EM681F14O00RAXXX
	820	10×12	18	4300	4100	SPD1EM821G12O00RAXXX
		8×16	18	3700	4100	SPD1EM821F16O00RAXXX
	1000	10×13	18	4400	5000	SPD1EM102G13O00RAXXX
35 (40.3)	47	6.3×7	45	2200	500	SPD1VM470E07O00RAXXX
	56	6.3×7	45	2200	500	SPD1VM560E07O00RAXXX
	68	6.3×7	45	2300	500	SPD1VM680E07O00RAXXX
	82	6.3×7	45	2300	574	SPD1VM820E07O00RAXXX
	100	6.3×8	45	2400	700	SPD1VM101E08O00RAXXX
	120	6.3×9	45	2500	840	SPD1VM121E09O00RAXXX
	150	6.3×10	36	2600	1050	SPD1VM151E10O00RAXXX
	220	8×11	36	2900	1540	SPD1VM221F11O00RAXXX
		6.3×11	36	2700	1540	SPD1VM221E11O00RAXXX
	270	10×12	27	3100	1890	SPD1VM271G12O00RAXXX
	330	10×12	27	3200	2310	SPD1VM331G12O00RAXXX
	470	10×13	18	3300	3290	SPD1VM471G13O00RAXXX
	680	10×16	18	3500	4760	SPD1VM681G16O00RAXXX

※ Specifications subject to change without notice.