

# SPC

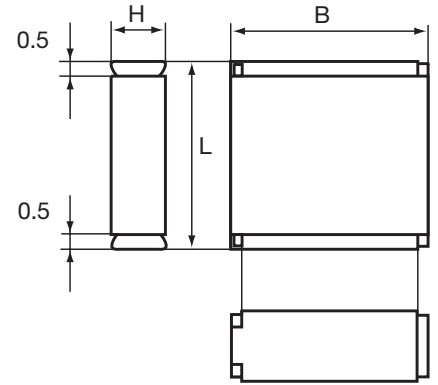
- Double sided metallized film as electrode
- Plain polyphenylene sulphide (PPS) as dielectric

## TYPICAL APPLICATIONS

High frequency coupling and decoupling and in general high speed applications requiring high  $dU/dt$ , such as pulse operation in SMPS and snubber.

## CONSTRUCTION

Film capacitor for surface mounting. Double sided metallized film as electrode. Plain PPS as dielectric. Rugged box encapsulation in self-extinguishing material meeting the requirements of UL 94V-0.

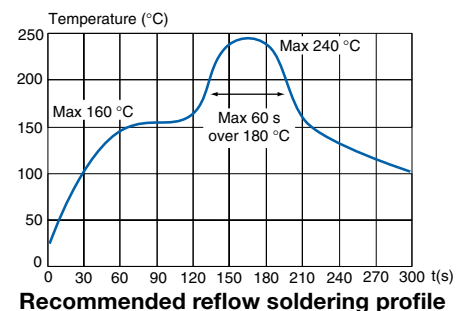
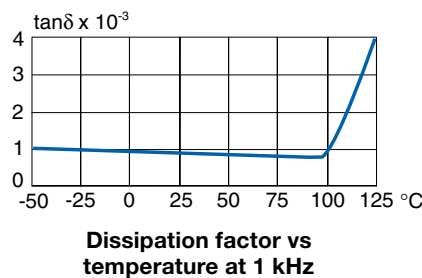
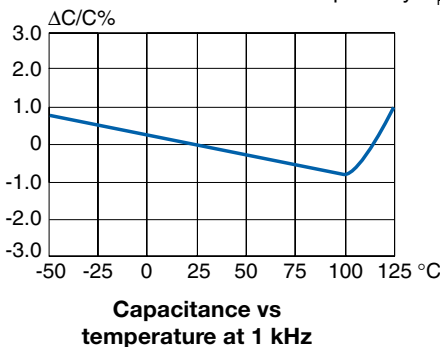


Components may be vertically mounted for decreased footprint. See page 69.

## TECHNICAL DATA

<b>Rated voltage <math>U_R</math>, VDC</b>	100	250	400	630
<b>Rated voltage <math>U_R</math>, VAC</b>	63	160	250	350
<b>Capacitance range, nF</b>	0.47-680	0.47-330	0.47-150	0.47-100
<b>Capacitance values</b>	In accordance with IEC E6 series. IEC E12 and other values on request.			
<b>Capacitance tolerance</b>	$\pm 5\%$ , $\pm 2.5\%$ , $\pm 2\%$ , other tolerances on request.			
<b>Category temperature range</b>	-55°C to +125°C From +125°C to +150°C, the voltage derating is 2%/°C.			
<b>Rated temperature</b>	+125°C			
<b>Voltage derating</b>	The rated voltage is decreased with 1.25%/°C from +125°C.			
<b>Climatic category</b>	55/125/56			
<b>Voltage proof</b>	1.6 x $U_R$ , 60s			
<b>Insulation resistance</b>	Minimum values between terminals Measured at +20°C			
	$U_R \leq 100$ V	$C \leq 0.33$ $\mu$ F 50 000 M $\Omega$	$C > 0.33$ $\mu$ F 16 500 s	
	$U_R > 100$ V	100 000 M $\Omega$		
<b>Dissipation factor</b>	Max values at +23°C			
		$C \leq 100$ nF	$100$ nF < $C \leq 680$ nF	
	1 kHz	0.10%	0.10%	
	10 kHz	0.15%	0.15%	
	100 kHz	0.20%	0.40%	

**Pulse rise time** The capacitors can withstand an unlimited number of pulses with a  $dU/dt$  according to article table. For voltages (U) lower than the rated voltage ( $U_R$ ), the specified  $dU/dt$  can be multiplied by  $U_R/U$ .



## RECOMMENDED SOLDERING CONDITIONS

### Electrode temperature, Reflow soldering

Preheating temperature should be less than 160°C. The time above 180°C should be less than 1 minute. The peak temperature must not exceed 240°C.

## ARTICLE TABLE

Capacitance $\mu\text{F}$	Dimensions in mm $\pm 0.2$			Quantity per package		Weight g	Max dU/dt V/ $\mu\text{s}$	Article code
	B	H	L	Bulk	Reel			
<b>100 VDC/ 63 VAC</b>								
<b>CHIP LENGTH 7.3 MM CODE 2824</b>								
0.00047	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 471K100K31 TR12
0.00068	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 681K100K31 TR12
0.0010	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 102K100K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 152K100K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 222K100K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 332K100K31 TR12
0.0047	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 472K100K31 TR12
0.0068	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 682K100K31 TR12
0.010	6.0	2.5	7.3	2000	3100	0.18	800	SPC7.3 103K100K31 TR12
0.015	6.0	3.0	7.3	2000	2500	0.22	800	SPC7.3 153K100K33 TR12
0.022	6.0	3.5	7.3	2000	2300	0.25	800	SPC7.3 223K100K35 TR12
0.033	6.0	4.5	7.3	1000	1700	0.36	800	SPC7.3 333K100K37 TR12
<b>CHIP LENGTHS 10.2, 12.7 AND 16.5 CODES 4036, 5045 AND 6560</b>								
0.0068	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 682K100A31 TR16
0.010	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 103K100A31 TR16
0.015	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 153K100A31 TR16
0.022	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 223K100A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 333K100A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 473K100A31 TR16
0.068	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 683K100A31 TR16
0.10	9.1	5.5	10.2	1000	800	0.88	600	SPC10.2 104K100A31 TR16
0.15	11.5	6.5	12.7	1000	600	1.57	400	SPC12.7 154K100B31 TR24
0.22	11.5	6.5	12.7	1000	600	1.57	400	SPC12.7 224K100B31 TR24
0.33	15.0	7.0	16.5	800	500	2.76	150	SPC16.5 334K100C31 TR24
0.47	15.0	7.0	16.5	800	500	2.76	150	SPC16.5 474K100C31 TR24
0.68	15.0	7.0	16.5	800	500	2.76	150	SPC16.5 684K100C31 TR24
<b>250 VDC/ 160 VAC</b>								
<b>CHIP LENGTH 7.3 MM CODE 2824</b>								
0.00047	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 471K250K31 TR12
0.00068	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 681K250K31 TR12
0.0010	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 102K250K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 152K250K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 222K250K31 TR12
0.0033	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 332K250K31 TR12
0.0047	6.0	2.5	7.3	2000	3100	0.18	1200	SPC7.3 472K250K31 TR12
0.0068	6.0	3.0	7.3	2000	2500	0.22	1200	SPC7.3 682K250K33 TR12
0.010	6.0	3.5	7.3	2000	2300	0.25	1200	SPC7.3 103K250K35 TR12
0.015	6.0	4.5	7.3	1000	1700	0.36	1200	SPC7.3 153K250K37 TR12
<b>CHIP LENGTHS 10.2, 12.7 AND 16.5 CODES 4036, 5045 AND 6560</b>								
0.0068	9.1	5.5	10.2	1000	800	0.88	1000	SPC10.2 682K250A31 TR16
0.010	9.1	5.5	10.2	1000	800	0.88	1000	SPC10.2 103K250A31 TR16
0.015	9.1	5.5	10.2	1000	800	0.88	1000	SPC10.2 153K250A31 TR16
0.022	9.1	5.5	10.2	1000	800	0.88	1000	SPC10.2 223K250A31 TR16
0.033	9.1	5.5	10.2	1000	800	0.88	1000	SPC10.2 333K250A31 TR16
0.047	9.1	5.5	10.2	1000	800	0.88	1000	SPC10.2 473K250A31 TR16
0.068	11.5	6.5	12.7	1000	600	1.57	700	SPC12.7 683K250B31 TR24
0.10	11.5	6.5	12.7	1000	600	1.57	700	SPC12.7 104K250B31 TR24
0.15	15.0	7.0	16.5	800	500	2.76	350	SPC16.5 154K250C31 TR24
0.22	15.0	7.0	16.5	800	500	2.76	350	SPC16.5 224K250C31 TR24
0.33	15.0	7.0	16.5	800	500	2.76	350	SPC16.5 334K250C31 TR24

## ARTICLE TABLE

Capacitance $\mu\text{F}$	Dimensions in mm $\pm 0.2$			Quantity per package		Weight g	Max dU/dt V/ $\mu\text{s}$	Article code
	B	H	L	Bulk	Reel			
<b>400 VDC/ 250 VAC</b>								
<b>CHIP LENGTH 7.3 MM CODE 2824</b>								
0.00047	6.0	2.5	7.3	2000	3100	0.18	1600	SPC7.3 471K400K31 TR12
0.00068	6.0	2.5	7.3	2000	3100	0.18	1600	SPC7.3 681K400K31 TR12
0.0010	6.0	2.5	7.3	2000	3100	0.18	1600	SPC7.3 102K400K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	1600	SPC7.3 152K400K31 TR12
0.0022	6.0	2.5	7.3	2000	3100	0.18	1600	SPC7.3 222K400K31 TR12
0.0033	6.0	3.0	7.3	2000	2500	0.22	1600	SPC7.3 332K400K33 TR12
0.0047	6.0	3.5	7.3	2000	2300	0.25	1600	SPC7.3 472K400K35 TR12
0.0068	6.0	4.5	7.3	1000	1700	0.36	1600	SPC7.3 682K400K37 TR12
<b>CHIP LENGTHS 10.2, 12.7 AND 16.5 CODES 4036, 5045 AND 6560</b>								
0.0068	9.1	5.5	10.2	1000	800	0.88	1300	SPC10.2 682K400A31 TR16
0.010	9.1	5.5	10.2	1000	800	0.88	1300	SPC10.2 103K400A31 TR16
0.015	9.1	5.5	10.2	1000	800	0.88	1300	SPC10.2 153K400A31 TR16
0.022	9.1	5.5	10.2	1000	800	0.88	1300	SPC10.2 223K400A31 TR16
0.033	11.5	6.5	12.7	1000	600	1.57	900	SPC12.7 333K400B31 TR24
0.047	11.5	6.5	12.7	1000	600	1.57	900	SPC12.7 473K400B31 TR24
0.068	15.0	7.0	16.5	800	500	2.76	450	SPC16.5 683K400C31 TR24
0.10	15.0	7.0	16.5	800	500	2.76	450	SPC16.5 104K400C31 TR24
0.15	15.0	7.0	16.5	800	500	2.76	450	SPC16.5 154K400C31 TR24
<b>630 VDC/ 350 VAC</b>								
<b>CHIP LENGTH 7.3 MM CODE 2824</b>								
0.00047	6.0	2.5	7.3	2000	3100	0.18	2000	SPC7.3 471K630K31 TR12
0.00068	6.0	2.5	7.3	2000	3100	0.18	2000	SPC7.3 681K630K31 TR12
0.0010	6.0	2.5	7.3	2000	3100	0.18	2000	SPC7.3 102K630K31 TR12
0.0015	6.0	2.5	7.3	2000	3100	0.18	2000	SPC7.3 152K630K31 TR12
0.0022	6.0	3.0	7.3	2000	2500	0.22	2000	SPC7.3 222K630K33 TR12
0.0033	6.0	3.5	7.3	2000	2300	0.25	2000	SPC7.3 332K630K35 TR12
0.0047	6.0	4.5	7.3	1000	1700	0.36	2000	SPC7.3 472K630K37 TR12
<b>CHIP LENGTHS 10.2, 12.7 AND 16.5 CODES 4036, 5045 AND 6560</b>								
0.0068	9.1	5.5	10.2	1000	800	0.88	1600	SPC10.2 682K630A31 TR16
0.010	9.1	5.5	10.2	1000	800	0.88	1600	SPC10.2 103K630A31 TR16
0.015	9.1	5.5	10.2	1000	800	0.88	1600	SPC10.2 153K630A31 TR16
0.022	11.5	6.5	12.7	1000	600	1.57	1100	SPC12.7 223K630B31 TR24
0.033	11.5	6.5	12.7	1000	600	1.57	1100	SPC12.7 333K630B31 TR24
0.047	15.0	7.0	16.5	800	500	2.76	550	SPC16.5 473K630C31 TR24
0.068	15.0	7.0	16.5	800	500	2.76	550	SPC16.5 683K630C31 TR24
0.10	15.0	7.0	16.5	800	500	2.76	550	SPC16.5 104K630C31 TR24

## ORDERING INFORMATION

See article table and pages 18 to 23 for options and article code construction.

## MARKING

- Rated capacitance
- Capacitance tolerance code
- Rated voltage code
- Capacitor type D for SPC
- Manufacturing date code according to IEC 60062 (year, month)

See also page 68.