SPC

- **Double sided metallized film as electrode**
- **Plain polyphenylene sulphide (PPS) as dielectric**
- **According to IEC 60384-20**

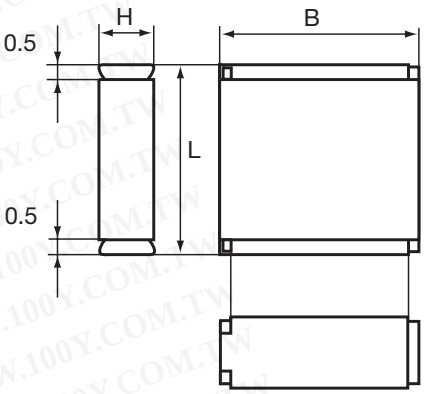
RoHS Compliant

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 20.

TECHNICAL DATA

Rated voltage U_R, VDC **Rated voltage U_R, VAC**	100 63	250 160	400 250	630 350
Capacitance range, nF	0.47-680	0.47-330	0.47-150	0.47-100

Capacitance values
In accordance with IEC E6 series. IEC E12 and other values on request.

Capacitance tolerance
±10%, ±5%, ±2.5%, ±2%, other tolerances on request.

Category temperature range
-55°C to +125°C

Rated temperature
+100°C

Voltage derating
The rated voltage should be decreased with 1.5%/°C from +125°C to 175°C. No derating from +100°C to +125°C.

Climatic category
55/125/56

Voltage proof
1.6 x U_R, 60s

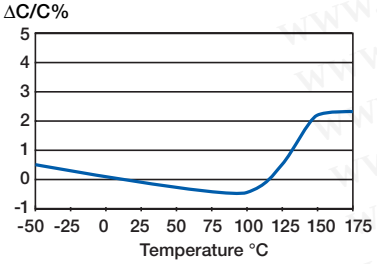
Insulation resistance
Minimum values between terminals
Measured at +20°C

	C ≤ 0.33 µF	C > 0.33 µF
U_R ≤ 100 V	50 000 MΩ	16 500 s
U_R > 100 V	100 000 MΩ	

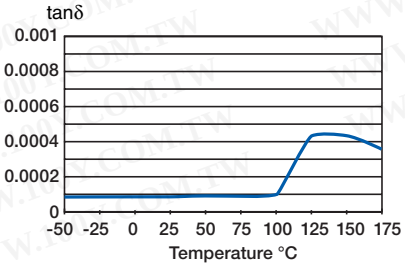
Dissipation factor
Max values at +23°C

	C ≤ 100 nF	100 nF < C ≤ 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.



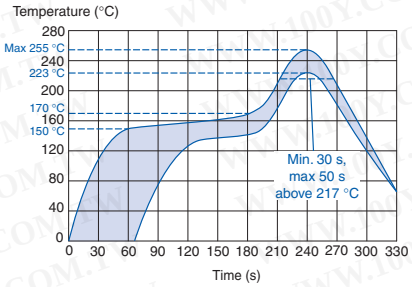
Typical capacitance vs temperature at 1 kHz



Typical dissipation factor vs temperature at 1 kHz

RECOMMENDED SOLDERING CONDITIONS

Reflow soldering temperature measured on the top body surface of the component
Preheating temperature should be less than 170°C. The time above 217°C should be less than 50 s. The peak temperature must not exceed 255°C.



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 18.

ORDERING INFORMATION

See article table and page 10 for options and article code construction.

ARTICLE TABLE

100 VDC/ 63 VAC

CHIP LENGTH 7.3 MM CODE 2824

Capacitance µF	Size code	Dimensions in mm ±0.2 B	H	Max dU/dt V/µs	Article code
0.00047	K31	6.0	2.5	800	SPC7.3 471K100K31 TR12
0.00068	K31	6.0	2.5	800	SPC7.3 681K100K31 TR12
0.0010	K31	6.0	2.5	800	SPC7.3 102K100K31 TR12
0.0015	K31	6.0	2.5	800	SPC7.3 152K100K31 TR12
0.0022	K31	6.0	2.5	800	SPC7.3 222K100K31 TR12
0.0033	K31	6.0	2.5	800	SPC7.3 332K100K31 TR12
0.0047	K31	6.0	2.5	800	SPC7.3 472K100K31 TR12
0.0068	K31	6.0	2.5	800	SPC7.3 682K100K31 TR12
0.010	K31	6.0	2.5	800	SPC7.3 103K100K31 TR12
0.015	K33	6.0	3.0	800	SPC7.3 153K100K33 TR12
0.022	K35	6.0	3.5	800	SPC7.3 223K100K35 TR12
0.033	K37	6.0	4.5	800	SPC7.3 333K100K37 TR12

CHIP LENGTH 10.2 MM CODE 4036

0.0068	A31	9.1	5.5	600	SPC10.2 682K100A31 TR16
0.010	A31	9.1	5.5	600	SPC10.2 103K100A31 TR16
0.015	A31	9.1	5.5	600	SPC10.2 153K100A31 TR16
0.022	A31	9.1	5.5	600	SPC10.2 223K100A31 TR16
0.033	A31	9.1	5.5	600	SPC10.2 333K100A31 TR16
0.047	A31	9.1	5.5	600	SPC10.2 473K100A31 TR16
0.068	A31	9.1	5.5	600	SPC10.2 683K100A31 TR16
0.10	A31	9.1	5.5	600	SPC10.2 104K100A31 TR16

CHIP LENGTH 12.7 MM CODE 5045

0.15	B31	11.5	6.5	400	SPC12.7 154K100B31 TR24
0.22	B31	11.5	6.5	400	SPC12.7 224K100B31 TR24

CHIP LENGTH 16.5 MM CODE 6560

0.33	C31	15.0	7.0	150	SPC16.5 334K100C31 TR24
0.47	C31	15.0	7.0	150	SPC16.5 474K100C31 TR24
0.68	C31	15.0	7.0	150	SPC16.5 684K100C31 TR24

250 VDC/ 160 VAC

CHIP LENGTH 7.3 MM CODE 2824

0.00047	K31	6.0	2.5	1200	SPC7.3 471K250K31 TR12
0.00068	K31	6.0	2.5	1200	SPC7.3 681K250K31 TR12
0.0010	K31	6.0	2.5	1200	SPC7.3 102K250K31 TR12
0.0015	K31	6.0	2.5	1200	SPC7.3 152K250K31 TR12
0.0022	K31	6.0	2.5	1200	SPC7.3 222K250K31 TR12
0.0033	K31	6.0	2.5	1200	SPC7.3 332K250K31 TR12
0.0047	K31	6.0	2.5	1200	SPC7.3 472K250K31 TR12
0.0068	K33	6.0	3.0	1200	SPC7.3 682K250K33 TR12
0.010	K35	6.0	3.5	1200	SPC7.3 103K250K35 TR12
0.015	K37	6.0	4.5	1200	SPC7.3 153K250K37 TR12

CHIP LENGTH 10.2 MM CODE 4036

0.0068	A31	9.1	5.5	1000	SPC10.2 682K250A31 TR16
0.010	A31	9.1	5.5	1000	SPC10.2 103K250A31 TR16
0.015	A31	9.1	5.5	1000	SPC10.2 153K250A31 TR16
0.022	A31	9.1	5.5	1000	SPC10.2 223K250A31 TR16
0.033	A31	9.1	5.5	1000	SPC10.2 333K250A31 TR16
0.047	A31	9.1	5.5	1000	SPC10.2 473K250A31 TR16

CHIP LENGTH 12.7 MM CODE 5045

0.068	B31	11.5	6.5	700	SPC12.7 683K250B31 TR24
0.10	B31	11.5	6.5	700	SPC12.7 104K250B31 TR24

250 VDC/ 160 VAC

CHIP LENGTH 16.5 MM CODE 6560

0.15	C31	15.0	7.0	350	SPC16.5 154K250C31 TR24
0.22	C31	15.0	7.0	350	SPC16.5 224K250C31 TR24
0.33	C31	15.0	7.0	350	SPC16.5 334K250C31 TR24

400 VDC/ 250 VAC

CHIP LENGTH 7.3 MM CODE 2824

0.00047	K31	6.0	2.5	1600	SPC7.3 471K400K31 TR12
0.00068	K31	6.0	2.5	1600	SPC7.3 681K400K31 TR12
0.0010	K31	6.0	2.5	1600	SPC7.3 102K400K31 TR12
0.0015	K31	6.0	2.5	1600	SPC7.3 152K400K31 TR12
0.0022	K31	6.0	2.5	1600	SPC7.3 222K400K31 TR12
0.0033	K33	6.0	3.0	1600	SPC7.3 332K400K33 TR12
0.0047	K35	6.0	3.5	1600	SPC7.3 472K400K35 TR12
0.0068	K37	6.0	4.5	1600	SPC7.3 682K400K37 TR12

CHIP LENGTH 10.2 MM CODE 4036

0.0068	A31	9.1	5.5	1300	SPC10.2 682K400A31 TR16
0.010	A31	9.1	5.5	1300	SPC10.2 103K400A31 TR16
0.015	A31	9.1	5.5	1300	SPC10.2 153K400A31 TR16
0.022	A31	9.1	5.5	1300	SPC10.2 223K400A31 TR16

CHIP LENGTH 12.7 MM CODE 5045

0.033	B31	11.5	6.5	900	SPC12.7 333K400B31 TR24
0.047	B31	11.5	6.5	900	SPC12.7 473K400B31 TR24

CHIP LENGTH 16.5 MM CODE 6560

0.068	C31	15.0	7.0	450	SPC16.5 683K400C31 TR24
0.10	C31	15.0	7.0	450	SPC16.5 104K400C31 TR24
0.15	C31	15.0	7.0	450	SPC16.5 154K400C31 TR24

630 VDC/ 350 VAC

CHIP LENGTH 7.3 MM CODE 2824

0.00047	K31	6.0	2.5	2000	SPC7.3 471K630K31 TR12
0.00068	K31	6.0	2.5	2000	SPC7.3 681K630K31 TR12
0.0010	K31	6.0	2.5	2000	SPC7.3 102K630K31 TR12
0.0015	K31	6.0	2.5	2000	SPC7.3 152K630K31 TR12
0.0022	K33	6.0	3.0	2000	SPC7.3 222K630K33 TR12
0.0033	K35	6.0	3.5	2000	SPC7.3 332K630K35 TR12
0.0047	K37	6.0	4.5	2000	SPC7.3 472K630K37 TR12

CHIP LENGTH 10.2 MM CODE 4036

0.0068	A31	9.1	5.5	1600	SPC10.2 682K630A31 TR16
0.010	A31	9.1	5.5	1600	SPC10.2 103K630A31 TR16
0.015	A31	9.1	5.5	1600	SPC10.2 153K630A31 TR16

CHIP LENGTH 12.7 MM CODE 5045

0.022	B31	11.5	6.5	1100	SPC12.7 223K630B31 TR24
0.033	B31	11.5	6.5	1100	SPC12.7 333K630B31 TR24

CHIP LENGTH 16.5 MM CODE 6560

0.047	C31	15.0	7.0	550	SPC16.5 473K630C31 TR24
0.068	C31	15.0	7.0	550	SPC16.5 683K630C31 TR24
0.10	C31	15.0	7.0	550	SPC16.5 104K630C31 TR24