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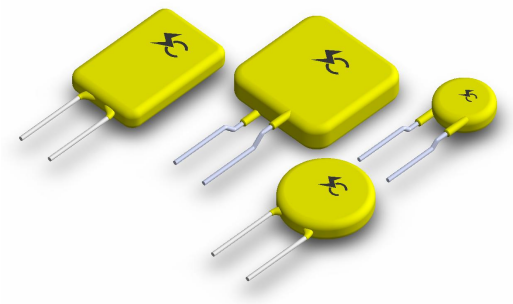
HF RoHS

Radial Lead Resettable Polymer PTCs

SC250 Series

Description

SC250 Series is designed to protect against short duration high voltage fault currents (power cross or power induction surge) typically used in AC220V.



Features

- 0.02-2.0A hold current rating
- 250VAC operating voltage
- Fast time-to- trip
- RoHS compliant, Lead-Free and Halogen-Free

Applicable

- AC220V over-current protection
- Power ports
- Customer Premises Equipment(CPE)

Electrical Parameters

Part Number	I_{hold} (A)	I_{trip} (A)	V_{max} (Vac)	I_{max} (A)	$P_{dtyp.}$ (W)	Maximum Time To Trip		Resistance		
						Current (A)	Time (Sec.)	R_{min} (Ω)	R_{max} (Ω)	R_{1max} (Ω)
SC250-020	0.02	0.04	250	1.0	0.6	0.10	8.0	65.0	165.0	225.0
SC250-030	0.03	0.06	250	1.0	0.6	0.15	5.0	35.0	90.0	120.0
SC250-040	0.04	0.08	250	1.0	0.7	0.20	6.0	27.0	65.0	90.0
SC250-050	0.05	0.10	250	1.0	0.7	0.25	5.0	22.0	55.0	75.0
SC250-060	0.06	0.12	250	1.2	0.8	0.30	5.0	18.0	45.0	60.0
SC250-080	0.08	0.16	250	1.2	0.8	0.40	5.0	11.0	22.0	33.0
SC250-120S	0.12	0.24	250	1.2	1.0	0.60	5.0	6.0	12.0	16.0
SC250-160	0.16	0.32	250	2.0	1.4	0.80	15.0	3.5	7.8	10.4
SC250-200C	0.20	0.40	250	3.0	1.5	1.00	9.0	3.0	6.5	8.0
SC250-250	0.25	0.50	250	3.5	1.5	1.25	7.0	2.2	5.0	6.0
SC250-300	0.30	0.60	250	4.5	1.7	1.50	8.0	1.8	4.0	4.8
SC250-330	0.33	0.66	250	4.5	1.7	1.65	8.0	1.6	3.6	4.3
SC250-400	0.40	0.80	250	5.5	2.0	2.00	9.0	1.35	3.00	3.6
SC250-500	0.50	1.0	250	6.5	2.5	2.50	10.0	0.90	2.00	2.4
SC250-550	0.55	1.1	250	7.0	2.5	2.75	9.0	0.85	1.80	2.2
SC250-600	0.60	1.2	250	6.0	2.5	3.00	8.0	0.80	1.65	2.0
SC250-650	0.65	1.3	250	6.5	2.6	3.25	12.0	0.65	1.30	1.6
SC250-750	0.75	1.5	250	7.5	2.6	3.75	18.0	0.55	1.10	1.3
SC250-800	0.80	1.6	250	8.0	2.7	4.00	18.0	0.50	1.00	1.2
SC250-900	0.90	1.8	250	9.0	2.8	4.50	18.0	0.45	0.90	1.1
SC250-1000C	1.00	2.0	250	10.0	2.9	5.00	21.0	0.37	0.75	0.90
SC250-1100	1.10	2.2	250	10.0	3.1	5.50	21.0	0.33	0.66	0.80
SC250-1250C	1.25	2.5	250	10.0	3.3	6.25	23.0	0.27	0.55	0.66
SC250-1350	1.35	2.7	250	10.0	3.5	6.75	23.0	0.25	0.50	0.60
SC250-1600	1.60	3.2	250	10.0	3.9	8.00	23.0	0.20	0.40	0.48
SC250-1850	1.85	3.7	250	10.0	4.3	9.25	23.0	0.165	0.33	0.40
SC250-2000	2.00	4.0	250	10.0	4.5	10.0	28.0	0.135	0.27	0.33

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Radial Lead Resettable Polymer PTCs

SC250 Series

I_{hold}= Hold current: maximum current device will pass without tripping in 25°C still air.

I_{trip}= Trip current: minimum current at which the device will trip in 25°C still air.

V_{max}= Maximum voltage device can withstand without damage at rated current (I_{max})

I_{max}= Maximum fault current device can withstand without damage at rated voltage (V_{max})

$P_{dtyp.}$= Power dissipated from device when in the tripped state at 25°C still air.

R_{min}= Minimum resistance of device in initial (un-soldered) state.

R_{max}= Maximum resistance of device in initial (un-soldered) state.

R_{1max}= Maximum resistance of device at 25°C measured one hour after tripping.

Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

Temperature Rerating Chart – I_{hold} (A)

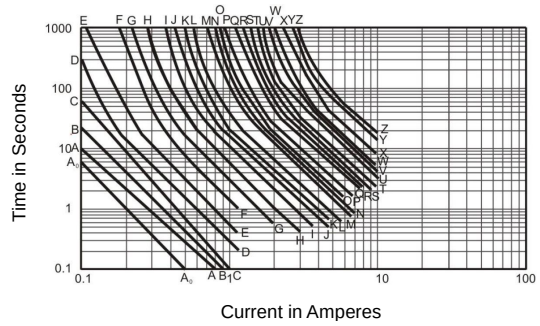
Part Number	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
	Hold Current (A)								
SC250-020	0.031	0.027	0.024	0.02	0.016	0.015	0.013	0.011	0.008
SC250-030	0.047	0.041	0.036	0.03	0.025	0.022	0.019	0.017	0.012
SC250-040	0.062	0.055	0.048	0.04	0.033	0.029	0.026	0.022	0.016
SC250-050	0.078	0.069	0.060	0.05	0.041	0.037	0.032	0.028	0.021
SC250-060	0.093	0.082	0.070	0.06	0.049	0.044	0.038	0.033	0.025
SC250-080	0.124	0.110	0.095	0.08	0.066	0.058	0.051	0.044	0.033
SC250-120S	0.186	0.164	0.143	0.12	0.098	0.088	0.077	0.066	0.049
SC250-160	0.248	0.219	0.190	0.16	0.131	0.117	0.102	0.088	0.064
SC250-200C	0.310	0.274	0.238	0.20	0.164	0.146	0.128	0.110	0.082
SC250-250	0.39	0.34	0.30	0.25	0.21	0.18	0.16	0.14	0.10
SC250-300	0.47	0.41	0.36	0.30	0.25	0.22	0.19	0.17	0.12
SC250-330	0.51	0.45	0.39	0.33	0.27	0.24	0.21	0.18	0.14
SC250-400	0.62	0.55	0.48	0.40	0.33	0.29	0.26	0.22	0.16
SC250-500	0.78	0.69	0.60	0.50	0.41	0.37	0.32	0.28	0.21
SC250-550	0.85	0.75	0.66	0.55	0.45	0.40	0.35	0.30	0.23
SC250-600	0.93	0.82	0.71	0.60	0.49	0.44	0.38	0.33	0.25
SC250-650	1.01	0.89	0.77	0.65	0.53	0.47	0.42	0.36	0.27
SC250-750	1.16	1.03	0.89	0.75	0.62	0.55	0.48	0.41	0.31
SC250-800	1.24	1.10	0.95	0.80	0.66	0.58	0.51	0.44	0.33
SC250-900	1.40	1.23	1.07	0.90	0.74	0.66	0.58	0.50	0.37
SC250-1000C	1.55	1.37	1.19	1.00	0.82	0.73	0.64	0.55	0.41
SC250-1100	1.71	1.51	1.31	1.10	0.90	0.80	0.70	0.61	0.45
SC250-1250C	1.94	1.71	1.49	1.25	1.03	0.91	0.80	0.69	0.51
SC250-1350	2.09	1.85	1.61	1.35	1.11	0.99	0.86	0.74	0.55
SC250-1600	2.48	2.19	1.90	1.60	1.31	1.17	1.02	0.88	0.66
SC250-1850	2.87	2.53	2.20	1.85	1.52	1.35	1.18	1.02	0.76
SC250-2000	3.10	2.74	2.38	2.00	1.64	1.46	1.28	1.10	0.82

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Radial Lead Resettable Polymer PTCs

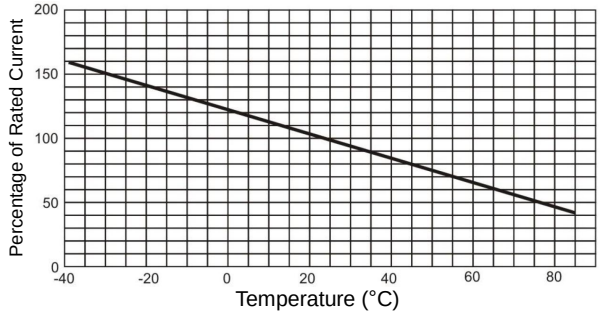
SC250 Series

Average Time Current Curves



A_0=SC250-020	G=SC250-160	N=SC250-550	U=SC250-1100
A=SC250-030	H=SC250-200C	O=SC250-600	V=SC250-1250C
B=SC250-040	I=SC250-250	P=SC250-650	W=SC250-1350
C=SC250-050	J=SC250-300	Q=SC250-750	X=SC250-1600
D=SC250-060	K=SC250-330	R=SC250-800	Y=SC250-1850
E=SC250-080	L=SC250-400	S=SC250-900	Z=SC250-2000
F=SC250-120S	M=SC250-500	T=SC250-1000C	

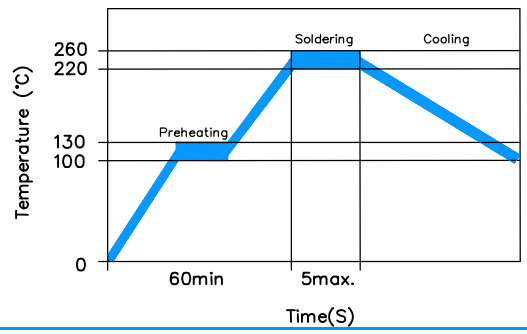
Temperature Rerating Curve



Test Procedures and Requirement

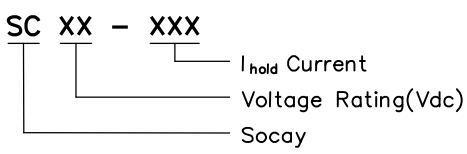
Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @25±2°C	$R_{min} \le R \le R_{max}$
Hold Current	60 min, at I_{hold}, In still air @25±2°C	No trip
Time to Trip	Specified current, V_{max}, @25±2°C	T≤Maximum Time To Trip
Trip Cycle Life	V_{max}, I_{max},100 cycles	No arcing or burning
Trip Endurance	Vmax,24hours	No arcing or burning

Soldering Parameters

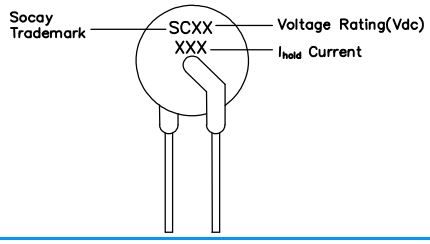


Pre-Heating Zone	Refer to the condition recommended by the manufacturer. Max. ramping rate should not exceed 4°C/Sec
Soldering Zone	Max. solder temperature should not exceed 260°C
Cooling Zone	Cooling by natural convection in air

Part Numbering



Part Marking



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Radial Lead Resettable Polymer PTCs

SC250 Series

Physical Specifications

Lead Material	0.02-0.04A Tin-plated Copper clad steel 0.05-2.00A Tin-plated Copper
Soldering Characteristics	Solder ability per MIL-STD-202, Method 208E
Insulating Material	Cured, flame retardant epoxy polymer meets UL 94V-0 requirements.
Device Labeling	Marked with 'SC', voltage, current rating

Dimensions

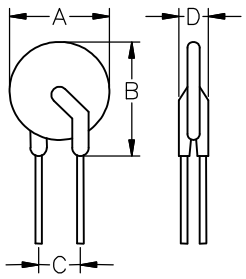


Figure1

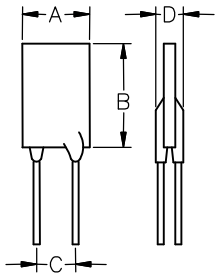


Figure2

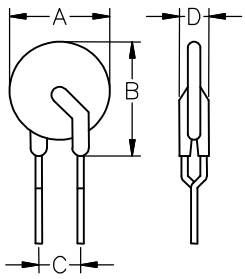


Figure3

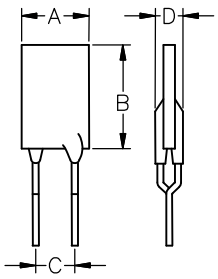


Figure4

Part Number	Figure	A		B		C		D		Lead (dia)		Packaging (Bulk Pack)
		Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
		Max.	Max.	Max.	Max.	Typ.	Typ.	Max.	Max.			
SC250-020	Figure3	0.236	6.0	0.342	8.7	0.200	5.1	0.181	4.6	0.020	0.5	1000
SC250-030	Figure3	0.236	6.0	0.342	8.7	0.200	5.1	0.181	4.6	0.020	0.5	1000
SC250-040	Figure3	0.236	6.0	0.366	9.3	0.200	5.1	0.181	4.6	0.020	0.5	1000
SC250-050	Figure3	0.236	6.0	0.366	9.3	0.200	5.1	0.181	4.6	0.020	0.5	1000
SC250-060	Figure1	0.236	6.0	0.394	10.0	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-080	Figure3	0.236	6.0	0.394	10.0	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-120C	Figure3	0.283	7.2	0.441	11.2	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-120S	Figure4	0.256	6.5	0.413	10.5	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-160	Figure3	0.366	9.3	0.504	12.8	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-200C	Figure3	0.394	10.0	0.531	13.5	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-200S	Figure4	0.366	9.3	0.504	12.8	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-250	Figure4	0.366	9.3	0.504	12.8	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-300	Figure4	0.366	9.3	0.571	14.5	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-330	Figure4	0.366	9.3	0.571	14.5	0.200	5.1	0.181	4.6	0.024	0.6	1000
SC250-400	Figure2	0.413	10.5	0.650	16.5	0.200	5.1	0.181	4.6	0.031	0.8	1000
SC250-500	Figure2	0.465	11.8	0.689	17.5	0.200	5.1	0.181	4.6	0.031	0.8	500
SC250-550	Figure2	0.465	11.8	0.689	17.5	0.200	5.1	0.181	4.6	0.031	0.8	500
SC250-600	Figure2	0.465	11.8	0.689	17.5	0.200	5.1	0.181	4.6	0.031	0.8	500
SC250-650	Figure2	0.551	14.0	0.720	18.3	0.200	5.1	0.181	4.6	0.031	0.8	500

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Radial Lead Resettable Polymer PTCs

SC250 Series

Dimensions (Continue)

Part Number	Figure	A		B		C		D		Lead (dia)		Packaging (Bulk Pack)
		Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
		Max.	Max.	Max.	Max.	Typ.	Typ.	Max.	Max.			
SC250-750	Figure2	0.570	14.5	0.854	21.7	0.200	5.1	0.181	4.6	0.031	0.8	500
SC250-800	Figure2	0.570	14.5	0.854	21.7	0.200	5.1	0.181	4.6	0.031	0.8	500
SC250-900	Figure2	0.650	16.5	0.965	24.5	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1000C	Figure1	0.831	21.1	0.988	25.1	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1000S	Figure2	0.748	19.0	1.004	25.5	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1100	Figure2	0.748	19.0	1.004	25.5	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1250C	Figure1	0.953	24.2	1.110	28.2	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1250S	Figure2	0.748	19.0	1.142	29.0	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1350	Figure2	0.748	19.0	1.142	29.0	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1600	Figure2	0.846	21.5	1.142	29.0	0.400	10.2	0.181	4.6	0.031	0.8	200
SC250-1850	Figure2	0.984	25.0	1.142	29.0	0.400	10.2	0.181	4.6	0.031	0.8	100
SC250-2000	Figure2	0.984	25.0	1.319	33.5	0.400	10.2	0.181	4.6	0.031	0.8	100

Warning



- This product should not be used in an application where the maximum interrupt voltage or maximum interrupt current in a fault condition, Operation beyond the maximum rating or improper use may result in device damage and possible electrical arcing and flame.
- A PPTC device is not a fuse, It is a nonlinear thermistor that limits current, Because under a fault condition all PPTC devices go into a high resistance state but not open circuit hazardous voltage may be present at PPTC.
- The devices are intended for protection against occasional over-current or over-temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events.
- In most application, power must be removed and the fault condition cleared in order to reset a PPTC device.
- PPTC devices are not recommended to be installed in applications where the device is constrained such that its PPTC properties are inhibited, for example in rigid potting materials or Add devices surface coating, Bundled devices ontology, which lack adequate clearance to accommodate device expansion.
- Contamination on of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices. For example, Organic solvents to cleaning.

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