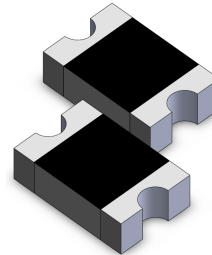


Surface Mount Resettable PTCs

SCF1210RZB Series

Features

- ◆ RoHS Compliant and Halogen Free
- ◆ Faster tripping, 1210 Dimension, Surface mountable, Solid state
- ◆ Operating Current: 1.5A~7.5A, @25°C
- ◆ Maximum Voltage: 6V/12V
- ◆ Operating Temperature: -40°C~ +85°C



Electrical Parameters

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Maximum Time To Trip		Resistance	
	I_{hold} (A)	I_{trip} (A)	V_{max} (Vdc)	I_{max} (A)	$P_{dtyp.}$ (W)	Current (A)	Time (Sec.)	R_{min} (Ω)	R_{1max} (Ω)
SCF150-1210RZB	1.5	3.0	6.0	50.0	0.8	8.0	2.0	0.010	0.060
SCF150-12-1210RZB	1.5	3.0	12.0	50.0	0.8	8.0	2.0	0.010	0.060
SCF175-1210RZB	1.75	3.5	6.0	50.0	0.8	8.0	2.0	0.010	0.040
SCF175-12-1210RZB	1.75	3.5	12.0	50.0	0.8	8.0	2.0	0.010	0.040
SCF190-1210RZB	1.9	3.8	6.0	50.0	0.8	8.0	3.0	0.006	0.037
SCF190-12-1210RZB	1.9	3.8	12.0	50.0	0.8	8.0	3.0	0.006	0.037
SCF200-1210RZB	2.0	4.0	6.0	50.0	0.8	8.0	3.0	0.006	0.035
SCF200-12-1210RZB	2.0	4.0	12.0	50.0	0.8	8.0	3.0	0.006	0.035
SCF260-1210RZB	2.6	5.2	6.0	50.0	0.8	13.0	2.0	0.003	0.025
SCF260-12-1210RZB	2.6	5.2	12.0	50.0	0.8	13.0	2.0	0.003	0.025
SCF300-1210RZB	3.0	6.0	6.0	50.0	0.8	15.0	2.0	0.003	0.02
SCF300-12-1210RZB	3.0	6.0	12.0	50.0	0.8	15.0	2.0	0.003	0.02
SCF350-1210RZB	3.5	7.0	6.0	50.0	0.8	17.5	2.0	0.002	0.018
SCF350-12-1210RZB	3.5	7.0	12.0	50.0	0.8	17.5	2.0	0.002	0.018
SCF380-1210RZB	3.8	7.6	6.0	50.0	0.8	19.0	2.0	0.002	0.016
SCF380-12-1210RZB	3.8	7.6	12.0	50.0	0.8	19.0	2.0	0.002	0.016
SCF400-1210RZB	4.0	8.0	6.0	50.0	0.8	20.0	2.0	0.002	0.014
SCF400-12-1210RZB	4.0	8.0	12.0	50.0	0.8	20.0	2.0	0.002	0.014
SCF450-1210RZB	4.5	9.0	6.0	50.0	1.0	22.5	2.0	0.001	0.013
SCF450-12-1210RZB	4.5	9.0	12.0	50.0	1.0	22.5	2.0	0.001	0.013
SCF500-1210RZB	5.0	10.0	6.0	50.0	1.0	25.0	2.0	0.001	0.012
SCF500-12-1210RZB	5.0	10.0	12.0	50.0	1.0	25.0	2.0	0.001	0.012
SCF550-1210RZB	5.5	11.0	6.0	50.0	1.0	27.5	2.0	0.001	0.011

Surface Mount Resettable PTCs

SCF1210RZB Series

Electrical Parameters (Continue)

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Maximum Time To Trip		Resistance	
	I_{hold} (A)	I_{trip} (A)	V_{max} (Vdc)	I_{max} (A)	$P_{dtyp.}$ (W)	Current (A)	Time (Sec.)	R_{min} (Ω)	R_{1max} (Ω)
SCF550-12-1210RZB	5.5	11.0	12.0	50.0	1.0	27.5	2.0	0.001	0.011
SCF600-1210RZB	6.0	12.0	6.0	50.0	1.2	30.0	2.0	0.001	0.010
SCF600-12-1210RZB	6.0	12.0	12.0	50.0	1.2	30.0	2.0	0.001	0.010
SCF650-1210RZB	6.5	13.0	6.0	50.0	1.2	32.5	2.0	0.001	0.009
SCF650-12-1210RZB	6.5	13.0	12.0	50.0	1.2	32.5	2.0	0.001	0.009
SCF700-1210RZB	7.0	14.0	6.0	50.0	1.2	35.0	2.0	0.001	0.008
SCF700-12-1210RZB	7.0	14.0	12.0	50.0	1.2	35.0	2.0	0.001	0.008
SCF750-1210RZB	7.5	15.0	6.0	50.0	1.2	37.5	2.0	0.001	0.007
SCF750-12-1210RZB	7.5	15.0	12.0	50.0	1.2	37.5	2.0	0.001	0.007

I_{hold} = Hold current: Maximum current at which the device will not interrupt in 25 °C still air.

I_{trip} = Trip current: Minimum current at which the device from low resistance to high resistance in 25 °C still air.

V_{max} = Maximum continuous voltage device can withstand without damage at rated current.

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

Maximum Time-to-trip: Maximum time to trip at assigned current.

$P_{dtyp.}$ = Typical power dissipation: Typical amount of power dissipated from the device when in 25 °C still air environment.

R_{min} = Minimum resistance of device at 25 °C prior to tripping.

R_{1max} = Maximum device resistance is measured one hour post reflow.

Thermal Derating Chart - I_H (A)

Model	Maximum Ambient Operating Temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
SCF150-1210RZB	2.25	2.00	1.75	1.50	1.33	1.15	1.05	0.93	0.70
SCF150-12-1210RZB	2.25	2.00	1.75	1.50	1.33	1.15	1.05	0.93	0.70
SCF175-1210RZB	2.55	2.33	2.02	1.75	1.53	1.35	1.23	1.07	0.85
SCF175-12-1210RZB	2.55	2.33	2.02	1.75	1.53	1.35	1.23	1.07	0.85
SCF190-1210RZB	2.81	2.53	2.20	1.90	1.67	1.47	1.34	1.17	0.91
SCF190-12-1210RZB	2.81	2.53	2.20	1.90	1.67	1.47	1.34	1.17	0.91
SCF200-1210RZB	2.96	2.67	2.32	2.00	1.76	1.55	1.41	1.23	0.96
SCF200-12-1210RZB	2.96	2.67	2.32	2.00	1.76	1.55	1.41	1.23	0.96
SCF260-1210RZB	3.85	3.47	3.02	2.60	2.29	2.01	1.84	1.59	1.25
SCF260-12-1210RZB	3.85	3.47	3.02	2.60	2.29	2.01	1.84	1.59	1.25
SCF300-1210RZB	4.44	4.00	3.48	3.00	2.64	2.32	2.12	1.84	1.44

Surface Mount Resettable PTCs

SCF1210RZB Series

Thermal Derating Chart - I_H (A) (Continue)

Model	Maximum Ambient Operating Temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
SCF300-12-1210RZB	4.44	4.00	3.48	3.00	2.64	2.32	2.12	1.84	1.44
SCF350-1210RZB	5.18	4.67	4.06	3.50	3.08	2.71	2.47	2.15	1.68
SCF350-12-1210RZB	5.18	4.67	4.06	3.50	3.08	2.71	2.47	2.15	1.68
SCF380-1210RZB	5.62	5.07	4.41	3.80	3.34	2.94	2.68	2.33	1.82
SCF380-12-1210RZB	5.62	5.07	4.41	3.80	3.34	2.94	2.68	2.33	1.82
SCF400-1210RZB	5.92	5.33	4.64	4.00	3.52	3.09	2.83	2.45	1.92
SCF400-12-1210RZB	5.92	5.33	4.64	4.00	3.52	3.09	2.83	2.45	1.92
SCF450-1210RZB	6.66	6.00	5.22	4.50	3.96	3.48	3.17	2.76	2.16
SCF450-12-1210RZB	6.66	6.00	5.22	4.50	3.96	3.48	3.17	2.76	2.16
SCF500-1210RZB	7.40	6.67	5.80	5.00	4.40	3.87	3.53	3.07	2.40
SCF500-12-1210RZB	7.40	6.67	5.80	5.00	4.40	3.87	3.53	3.07	2.40
SCF550-1210RZB	8.14	7.34	6.38	5.50	4.84	4.26	3.88	3.38	2.64
SCF550-12-1210RZB	8.14	7.34	6.38	5.50	4.84	4.26	3.88	3.38	2.64
SCF600-1210RZB	8.65	7.91	6.93	6.00	5.23	4.45	4.00	3.63	2.85
SCF600-12-1210RZB	8.65	7.91	6.93	6.00	5.23	4.45	4.00	3.63	2.85
SCF650-1210RZB	9.20	8.45	7.45	6.50	5.60	4.65	4.30	3.89	3.00
SCF650-12-1210RZB	9.20	8.45	7.45	6.50	5.60	4.65	4.30	3.89	3.00
SCF700-1210RZB	9.84	9.00	7.95	7.00	5.96	4.95	4.50	4.16	3.20
SCF700-12-1210RZB	9.84	9.00	7.95	7.00	5.96	4.95	4.50	4.16	3.20
SCF750-1210RZB	10.5	9.65	8.50	7.50	6.40	5.30	4.80	4.45	4.42
SCF750-12-1210RZB	10.5	9.65	8.50	7.50	6.40	5.30	4.80	4.45	4.42

Test Procedures and Requirements

Test Item	Test Conditions	Accept/Reject Criteria
Initial Resistance	In still air at 25°C	$R_{min} \leq R \leq R_{1max}$
Time to Trip	Specified current, V_{max} , 25°C	$T \leq$ Maximum Time to Trip
Holding Current	30min, at I_H , 25°C	No trip
Trip Endurance	V_{max} , I_{max} , 1 hour	No arcing or burning

Surface Mount Resettable PTCs

SCF1210RZB Series

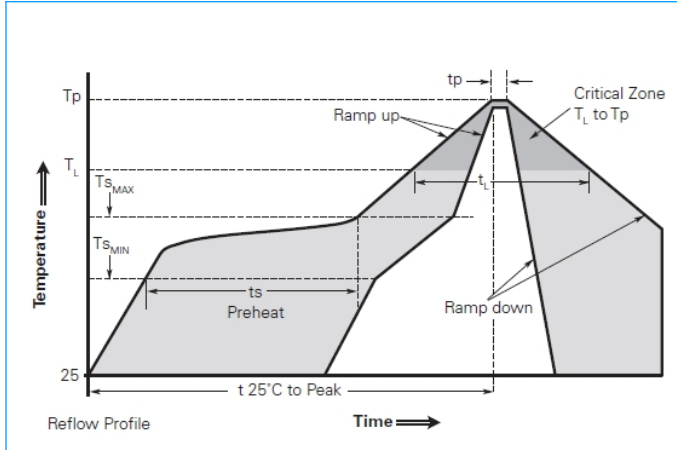
Physical Characteristics

Terminal Materials	Tin-Plated Nickle-copper
Soldering Zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.
Moisture Sensitivity	Level 1, per IPC/JEDEC J-STD 020C

Environmental Specifications

Test Item	Test Conditions	Resistance Change
Passive Aging	85°C, 1000 hours	±10% typical
Humidity Aging	85°C/85%RH. 100 hours	±5% typical
Thermal Shock	MIL-STD-202, Method 107G +85°C/-40°C, 20 times	-30% typical
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	ML-STD-883C, Method Test Condition A	No change

Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_s max to T_p)	3°C/second max.
Preheat : Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (T_{smin} to T_{smax})	150°C 200°C 60-120 seconds
Time maintained above: Temperature (T_L) Time (T_L)	217°C 60-150 seconds
Peak/Classification Temperature (T_p)	260°C
Time within 5°C of actual peak temperature: Time (T_p)	30 seconds max.
Ramp-down Rate	3°C/ second max.
Time 25°C to Peak Temperature	8 minutes max.

- Recommended reflow methods: I_R , vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.

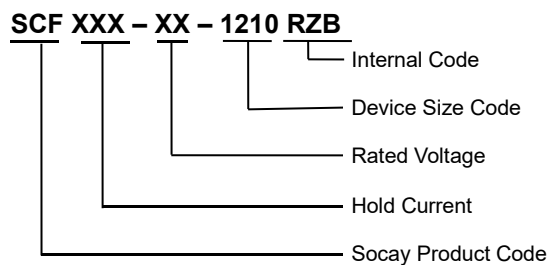
Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperature exceed the recommended profile, devices may not meet the performance requirements.

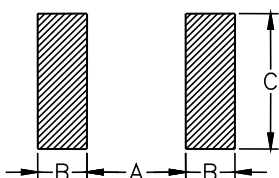
Surface Mount Resettable PTCs

SCF1210RZB Series

Part Numbering

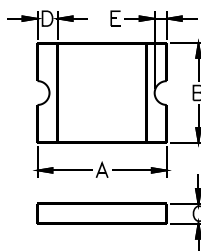


Recommended Solder Pad Layout Dimensions (Unit: mm)



Device	A	B	C
	Nominal	Nominal	Nominal
1210RZB Series	2.00	1.00	2.50

Product Dimensions (Unit: mm)



Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF150-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF150-12-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF175-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF175-12-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF190-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF190-12-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1

Surface Mount Resettable PTCs

SCF1210RZB Series

Product Dimensions (Unit: mm) (Continue)

Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF200-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF200-12-1210RZB	3.0	3.43	2.35	2.8	0.3	0.7	0.25	0.1
SCF260-1210RZB	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SCF260-12-1210RZB	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SCF300-1210RZB	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SCF300-12-1210RZB	3.0	3.43	2.35	2.8	0.4	1.0	0.25	0.1
SCF350-1210RZB	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SCF350-12-1210RZB	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SCF380-1210RZB	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SCF380-12-1210RZB	3.0	3.43	2.35	2.8	0.4	1.2	0.25	0.1
SCF400-1210RZB	3.0	3.43	2.35	2.8	0.5	1.2	0.25	0.1
SCF400-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.2	0.25	0.1
SCF450-1210RZB	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SCF450-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SCF500-1210RZB	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SCF500-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SCF550-1210RZB	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SCF550-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.4	0.25	0.1
SCF600-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF600-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF650-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF650-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF700-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF700-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF750-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1
SCF750-12-1210RZB	3.0	3.43	2.35	2.8	0.5	1.6	0.25	0.1

Surface Mount Resettable PTCs

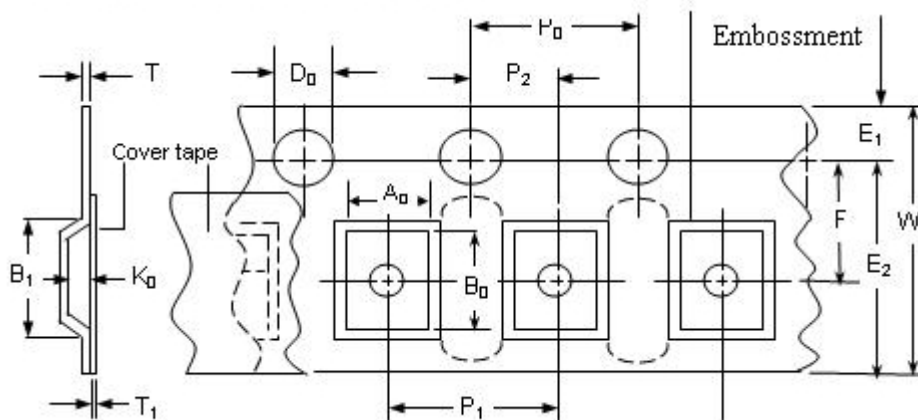
SCF1210RZB Series

Packaging Quantity

Part Number	Quantity	Part Number	Quantity
SCF150-1210RZB	4000 PCS	SCF400-1210RZB	4000 PCS
SCF150-12-1210RZB	4000 PCS	SCF400-12-1210RZB	4000 PCS
SCF175-1210RZB	4000 PCS	SCF450-1210RZB	4000 PCS
SCF175-12-1210RZB	4000 PCS	SCF450-12-1210RZB	4000 PCS
SCF190-1210RZB	4000 PCS	SCF500-1210RZB	3000 PCS
SCF190-12-1210RZB	4000 PCS	SCF500-12-1210RZB	3000 PCS
SCF200-1210RZB	4000 PCS	SCF550-1210RZB	3000 PCS
SCF200-12-1210RZB	4000 PCS	SCF550-12-1210RZB	3000 PCS
SCF260-1210RZB	4000 PCS	SCF600-1210RZB	3000 PCS
SCF260-12-1210RZB	4000 PCS	SCF600-12-1210RZB	3000 PCS
SCF300-1210RZB	4000 PCS	SCF650-1210RZB	3000 PCS
SCF300-12-1210RZB	4000 PCS	SCF650-12-1210RZB	3000 PCS
SCF350-1210RZB	4000 PCS	SCF700-1210RZB	3000 PCS
SCF350-12-1210RZB	4000 PCS	SCF700-12-1210RZB	3000 PCS
SCF380-1210RZB	4000 PCS	SCF750-1210RZB	3000 PCS
SCF380-12-1210RZB	4000 PCS	SCF750-12-1210RZB	3000 PCS

Tape Specifications (Unit: mm)

Tape Component Dimensions



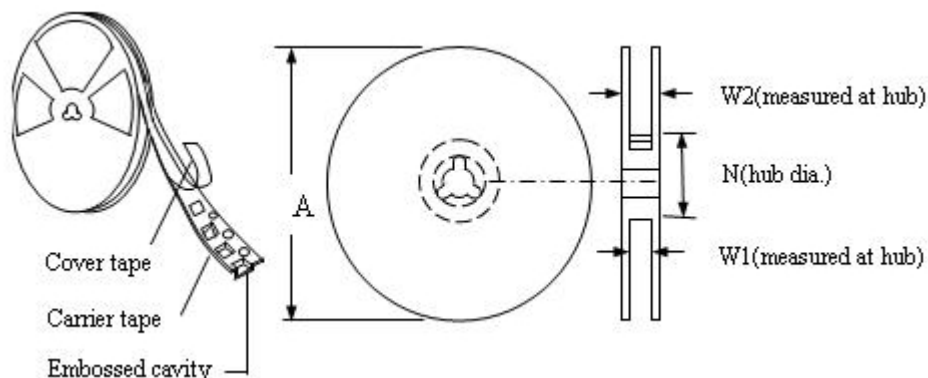
Symbol	Dimensions
W	8.0±0.3
P₀	4.0±0.10
P₁	4.0±0.10
P₂	2.0±0.05
A₀	2.82±0.10
B₀	3.46±0.10
D₀	1.55±0.05
F	3.50±0.05
E₁	1.75±0.10
T	0.25±0.10
Leader min.	390
Trailer min.	160

Surface Mount Resettable PTCs

SCF1210RZB Series

Reel Specifications (Unit: mm)

Reel Dimensions



Symbol	Dimensions
A	178±1.0
N	59±1.0
W1	8.5+1.0/-0.2
W2	12.0±1.0

Warning



- ◆ Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
- ◆ The electrical resistance and electrical performance specified in the specification are all tested on the test board designated after a reflow soldering. If there is a secondary soldering or other thermal processes, the performance may be attenuated.
- ◆ The holding current of PTC varies at different temperatures, please refer to the specifications and the actual ambient temperature for selection.
- ◆ PTC is designed to protect the occasional overcurrent or overheating failure phenomenon. Long-term or frequent failures will reduce the holding current of the product.
- ◆ The PTC soldering process is reflow soldering. The soldering process can refer to the temperature curve recommended in the specification. Manual soldering of PTC is prohibited. The use of hot air gun soldering of adjacent components will also affect the performance of PTC.
- ◆ PTC is a heat-sensitive component, avoid installing heat source components around it, and avoid installing it in an environment that is compressed or affects its thermal expansion.
- ◆ During installation or use, the PTC is forbidden to be mechanically damaged. It is not recommended to use liquid cleaning products containing organic solvents, which may affect the solder ability of PTC.