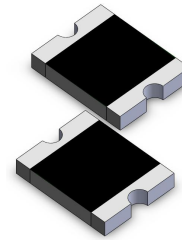


Surface Mount Resettable PTCs

SCF1210RB Series

Features

- ◆ RoHS Compliant & Halogen Free
- ◆ Faster tripping, 1210 Dimension, Surface mountable, Solid state
- ◆ Operation Current: 0.05A ~ 2.00A
- ◆ Maximum Voltage: 6V ~ 60Vdc
- ◆ 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)
SCF005-1210RB	0.05	0.15	60.0	100	0.6	0.25	1.50	2.800	50.00
SCF010-1210RB	0.10	0.30	60.0	100	0.6	0.50	0.60	0.800	15.00
SCF020-1210RB	0.20	0.40	30.0	100	0.6	8.0	0.02	0.400	5.000
SCF035-1210RB	0.35	0.75	16.0	100	0.6	8.0	0.20	0.200	1.300
SCF035-30-1210RB	0.35	0.75	30.0	100	0.6	8.0	0.20	0.200	1.300
SCF050-1210RB	0.50	1.00	16.0	100	0.6	8.0	0.10	0.180	0.900
SCF075-1210RB	0.75	1.50	6.0	100	0.6	8.0	0.10	0.070	0.400
SCF075-24-1210RB	0.75	1.50	24.0	100	0.6	8.0	0.10	0.070	0.450
SCF110-1210RB	1.10	2.20	6.0	100	0.6	8.0	0.30	0.050	0.210
SCF110-16-1210RB	1.10	2.20	16.0	100	0.8	8.0	0.30	0.050	0.250
SCF150-1210RB	1.50	3.00	6.0	100	0.8	8.0	0.50	0.030	0.110
SCF150-16-1210RB	1.50	3.00	16.0	100	0.6	8.0	0.50	0.030	0.160
SCF175-1210RB	1.75	3.50	6.0	100	0.8	8.0	0.60	0.020	0.080
SCF200-1210RB	2.00	4.00	6.0	100	0.8	8.0	1.00	0.015	0.070

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

V_{max} = Maximum operating 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}).

$P_{dtyp.}$ = Maximum power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

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

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

Surface Mount Resettable PTCs

SCF1210RB Series

Test Procedures and Requirements

Test Item	Test Conditions	Accept / Reject Criteria
Resistance	In still air @ 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	No trip
Trip Cycle Life	V_{max} , I_{max} , 100cycles	No arcing or burning
Trip Endurance	V_{max} , 1 hour	No arcing or burning

Physical Characteristics

Terminal Materials	Tin-Plated Nickle-copper
Soldering Zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.

Environmental Specifications

Test Item	Test Conditions	Resistance Change
Passive Aging	85°C, 1000 hours	±10%
Humidity Aging	85°C/85%RH. 168 hours	±5%
Thermal Shock	MIL-STD-202, Method 107G +85°C/-40°C, 20 times	±33% typical resistance change
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	ML-STD-883C, Test Condition A	No change

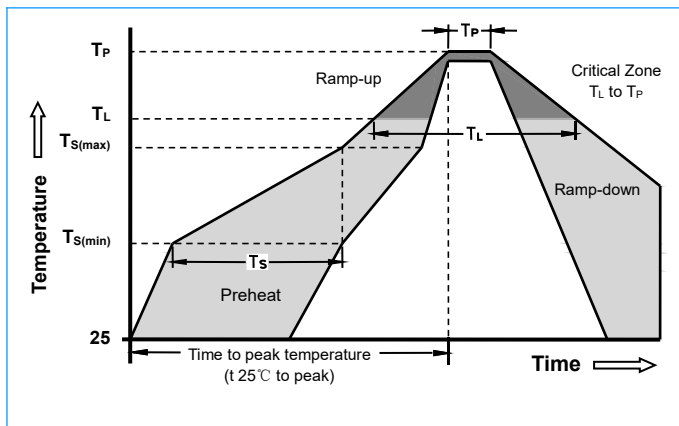
Thermal Derating Chart - I_H (A)

Model	Maximum ambient operating temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
SCF005-1210RB	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02
SCF010-1210RB	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.05
SCF020-1210RB	0.29	0.26	0.22	0.20	0.16	0.14	0.13	0.11	0.08
SCF035-1210RB	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SCF035-30-1210RB	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SCF050-1210RB	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SCF075-1210RB	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SCF075-24-1210RB	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SCF110-1210RB	1.60	1.42	1.26	1.10	0.94	0.86	0.80	0.70	0.58
SCF110-16-1210RB	1.60	1.42	1.26	1.10	0.94	0.86	0.80	0.70	0.58
SCF150-1210RB	2.30	2.02	1.76	1.50	1.24	1.11	1.00	0.85	0.65
SCF150-16-1210RB	2.30	2.02	1.76	1.50	1.24	1.11	1.00	0.85	0.65
SCF175-1210RB	2.45	2.22	2.01	1.75	1.45	1.26	1.10	0.98	0.80
SCF200-1210RB	2.60	2.44	2.35	2.00	1.78	1.67	1.50	1.45	1.10

Surface Mount Resettable PTCs

SCF1210RB Series

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})	150°C
Temperature Max (T_{Smax})	200°C
Time (T_{Smin} to T_{Smax})	60-120 seconds
Time maintained above:	
Temperature(T_L)	217°C
Time (T_L)	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.

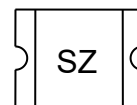
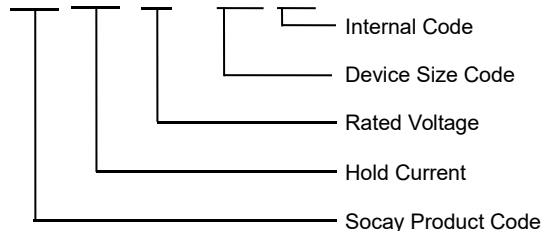
- Recommended reflow methods: I_R , vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.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

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.

Part Numbering

SCF XXX – XX – 1210 RB



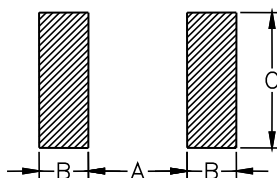
Example

SZ= SCF005-1210RB
 SN=SCF010-1210RB
 SF= SCF020-1210RB
 SB= SCF035-1210RB
 SB= SCF035-30-1210RB
 SG= SCF050-1210RB
 SA= SCF075-1210RB

SA = SCF075-24-1210RB
 SK= SCF110-1210RB
 SK= SCF110-16-1210RB
 SK= SCF150-1210RB
 SK= SCF150-16-1210RB
 SK= SCF175-1210RB
 SK= SCF200-1210RB

Recommended Solder Pad Layout Dimensions (Unit: mm)

The dimension in the table below provide the recommended pad layout for each SCF1210RB Series device

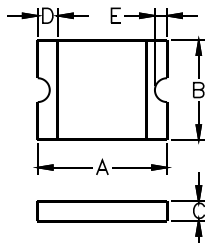


Device	A	B	C
1210 Series	2.0±0.1	1.0±0.1	2.5±0.1

Surface Mount Resettable PTCs

SCF1210RB Series

Product Dimensions (Unit: mm)



Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF005-1210RB	3.00	3.43	2.35	2.80	0.60	1.25	0.15	0.10
SCF010-1210RB	3.00	3.43	2.35	2.80	0.60	1.25	0.15	0.10
SCF020-1210RB	3.00	3.43	2.35	2.80	0.50	1.00	0.15	0.10
SCF035-1210RB	3.00	3.43	2.35	2.80	0.35	0.90	0.15	0.10
SCF035-30-1210RB	3.00	3.43	2.35	2.80	0.35	1.00	0.15	0.10
SCF050-1210RB	3.00	3.43	2.35	2.80	0.35	0.90	0.15	0.10
SCF075-1210RB	3.00	3.43	2.35	2.80	0.35	0.85	0.15	0.10
SCF075-24-1210RB	3.00	3.43	2.35	2.80	0.50	1.10	0.15	0.10
SCF110-1210RB	3.00	3.43	2.35	2.80	0.40	1.00	0.15	0.10
SCF110-16-1210RB	3.00	3.43	2.35	2.80	0.50	1.10	0.15	0.10
SCF150-1210RB	3.00	3.43	2.35	2.80	0.60	1.40	0.15	0.10
SCF150-16-1210RB	3.00	3.43	2.35	2.80	0.70	1.50	0.25	0.10
SCF175-1210RB	3.00	3.43	2.35	2.80	0.60	1.40	0.15	0.10
SCF200-1210RB	3.00	3.43	2.35	2.80	0.60	1.50	0.15	0.10

Packaging Quantity

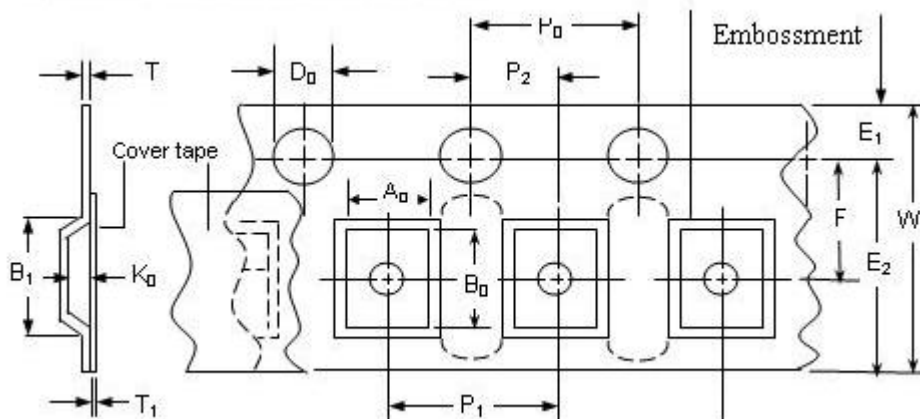
Part Number	Quantity	Part Number	Quantity
SCF005-1210RB	4000 PCS	SCF075-24-1210RB	4000 PCS
SCF010-1210RB	4000 PCS	SCF110-1210RB	4000 PCS
SCF020-1210RB	4000 PCS	SCF110-16-1210RB	4000 PCS
SCF035-1210RB	4000 PCS	SCF150-1210RB	4000 PCS
SCF035-30-1210RB	4000 PCS	SCF150-16-1210RB	3000 PCS
SCF050-1210RB	4000 PCS	SCF175-1210RB	4000 PCS
SCF075-1210RB	4000 PCS	SCF200-1210RB	4000 PCS

Surface Mount Resettable PTCs

SCF1210RB Series

Tape Specifications (Unit: mm)

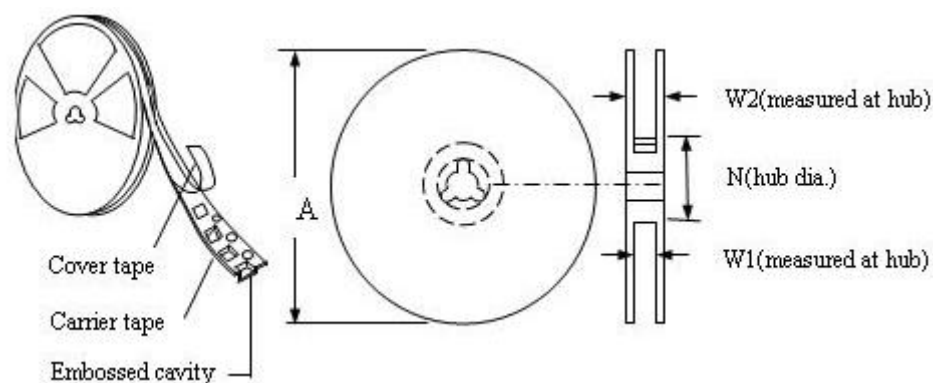
Tape Component Dimensions



Symbol	Dimensions
W	8.00±0.30
P₀	4.00±0.10
P₁	4.00±0.10
P₂	2.00±0.05
A₀	2.87±0.10
B₀	3.56±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

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.
- ◆ PPTC device are intended for occasional over-current protection. Application for repeated over-current condition and/or prolonged trip are not anticipated.
- ◆ Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.