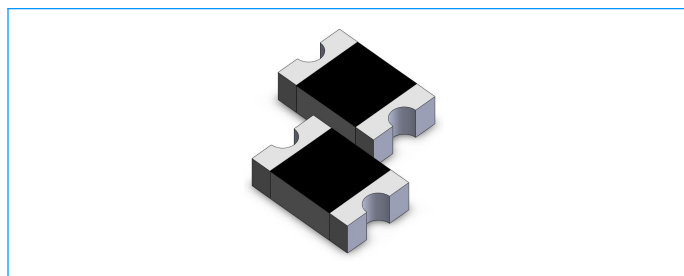


Surface Mount Resettable PTCs

SCF0805RB Series

Features

- ◆ RoHS Compliant & Halogen Free
- ◆ Faster tripping, 0805 Dimension, Surface mountable, Solid state
- ◆ Operation Current: 0.05A ~ 1.10A
- ◆ Maximum Voltage: 6V ~ 24Vdc
- ◆ 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)
SCF005-0805RB	0.05	0.15	15.0	100	0.50	0.50	1.50	1.500	25.00
SCF010-0805RB	0.10	0.30	15.0	100	0.50	0.50	1.50	1.000	8.000
SCF010-24-0805RB	0.10	0.30	24.0	100	0.50	0.50	1.50	1.000	8.000
SCF020-0805RB	0.20	0.50	9.0	100	0.50	8.00	0.02	0.500	3.500
SCF025-0805RB	0.25	0.50	6.0	100	0.50	8.00	0.02	0.450	3.200
SCF030-0805RB	0.30	0.70	6.0	100	0.50	8.00	0.10	0.250	2.000
SCF035-0805RB	0.35	0.75	6.0	100	0.50	8.00	0.10	0.250	1.200
SCF050-0805RB	0.50	1.00	6.0	100	0.60	8.00	0.10	0.150	0.850
SCF050-9-0805RB	0.50	1.00	9.0	40	0.50	8.00	0.10	0.150	0.900
SCF075-0805RB	0.75	1.50	6.0	100	0.60	8.00	0.20	0.090	0.385
SCF100-0805RB	1.00	1.95	6.0	100	0.60	8.00	0.30	0.060	0.230
SCF110-0805RB	1.10	2.20	6.0	100	0.60	8.00	0.30	0.060	0.210

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.

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

Surface Mount Resettable PTCs

SCF0805RB Series

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.100 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

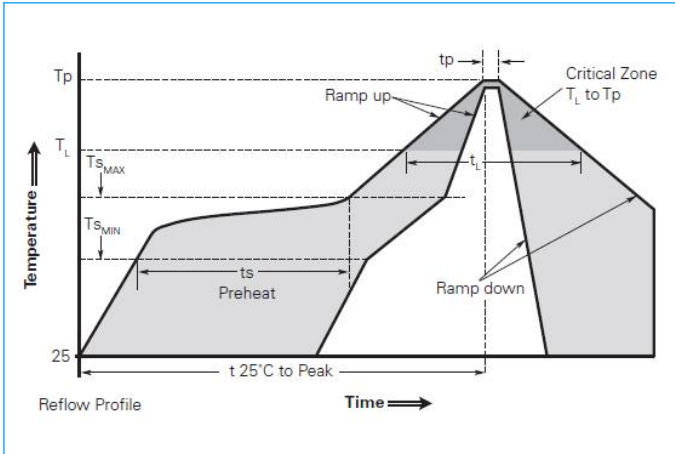
Thermal Derating Chart - I_H (A)

Model	Maximum ambient operating temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
SCF005-0805RB	0.070	0.063	0.058	0.050	0.043	0.035	0.030	0.025	0.018
SCF010-0805RB	0.140	0.125	0.115	0.100	0.085	0.070	0.060	0.050	0.035
SCF010-24-0805RB	0.140	0.125	0.115	0.100	0.085	0.070	0.060	0.050	0.035
SCF020-0805RB	0.280	0.250	0.230	0.200	0.170	0.140	0.120	0.100	0.070
SCF025-0805RB	0.350	0.310	0.290	0.250	0.210	0.180	0.150	0.013	0.090
SCF030-0805RB	0.420	0.380	0.350	0.300	0.255	0.210	0.180	0.150	0.110
SCF035-0805RB	0.470	0.440	0.390	0.350	0.300	0.270	0.240	0.200	0.140
SCF050-0805RB	0.680	0.620	0.550	0.500	0.400	0.370	0.330	0.290	0.230
SCF050-0805RB	0.680	0.620	0.550	0.500	0.400	0.370	0.330	0.290	0.230
SCF050-9-0805RB	0.680	0.620	0.550	0.500	0.400	0.370	0.330	0.290	0.230
SCF075-0805RB	1.000	0.900	0.790	0.750	0.630	0.570	0.530	0.410	0.340
SCF100-0805RB	1.350	1.250	1.100	1.000	0.820	0.740	0.650	0.550	0.420
SCF110-0805RB	1.450	1.350	1.200	1.100	0.920	0.840	0.750	0.650	0.520

Surface Mount Resettable PTCs

SCF0805RB 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}) 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.

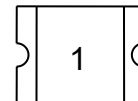
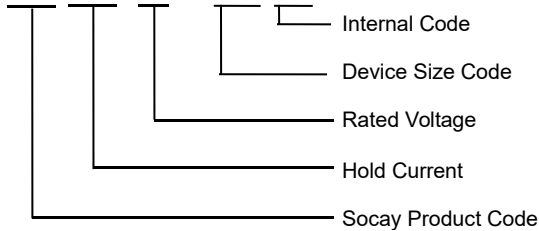
- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.
- 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 – 0805 RB

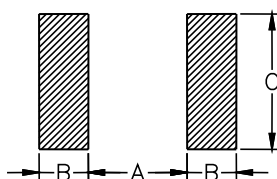


Example

- | | |
|---------------------|--------------------|
| 1= SCF005-0805RB | 3= SCF035-0805RB |
| 1= SCF010-0805RB | 5= SCF050-0805RB |
| 1= SCF010-24-0805RB | 5= SCF050-9-0805RB |
| 2= SCF020-0805RB | 7= SCF075-0805RB |
| 2= SCF025-0805RB | 0= SCF100-0805RB |
| 3= SCF030-0805RB | 0= SCF110-0805RB |

Recommended Solder Pad Layout Dimensions (Unit: mm)

The dimension in the table below provide the recommended pad layout for each SCF0805RB Series device

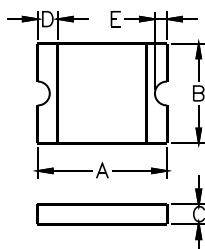


Device	A	B	C
0805 Series	1.2±0.1	1.0±0.1	1.5±0.1

Surface Mount Resettable PTCs

SCF0805RB Series

Product Dimensions (Unit: mm)



Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF005-0805RB	2.00	2.20	1.20	1.50	0.45	1.00	0.20	0.10
SCF010-0805RB	2.00	2.20	1.20	1.50	0.40	1.00	0.20	0.10
SCF010-24-0805RB	2.00	2.20	1.20	1.50	0.45	1.00	0.20	0.10
SCF020-0805RB	2.00	2.20	1.20	1.50	0.40	1.00	0.20	0.10
SCF025-0805RB	2.00	2.20	1.20	1.50	0.40	1.00	0.20	0.10
SCF030-0805RB	2.00	2.20	1.20	1.50	0.30	1.00	0.20	0.10
SCF035-0805RB	2.00	2.20	1.20	1.50	0.30	1.00	0.20	0.10
SCF050-0805RB	2.00	2.20	1.20	1.50	0.40	0.80	0.20	0.10
SCF050-9-0805RB	2.00	2.20	1.20	1.50	0.40	1.30	0.20	0.10
SCF075-0805RB	2.00	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SCF100-0805RB	2.00	2.20	1.20	1.50	0.50	1.20	0.20	0.10
SCF110-0805RB	2.00	2.20	1.20	1.50	0.50	1.20	0.20	0.10

Packaging Quantity

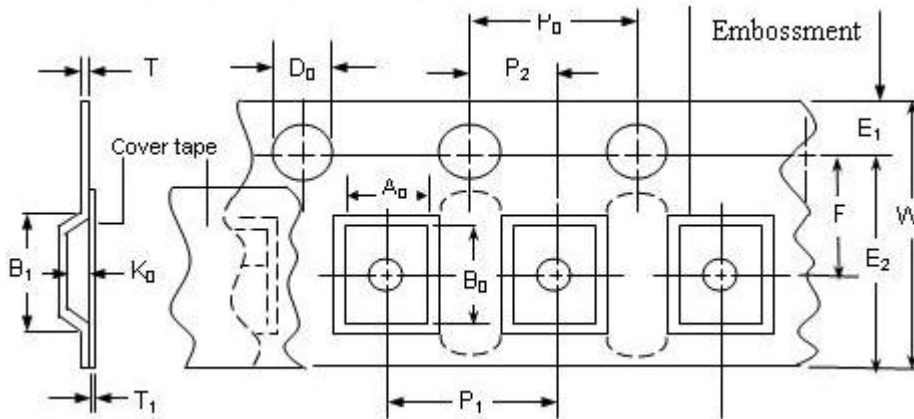
Part Number	Quantity	Part Number	Quantity
SCF005-0805RB	5000 PCS	SCF035-0805RB	5000 PCS
SCF010-0805RB/SCF010-24-0805RB	5000 PCS	SCF050-0805RB	5000 PCS
SCF020-0805RB	5000 PCS	SCF050-9-0805RB	4000 PCS
SCF025-0805RB	5000 PCS	SCF075-0805RB	4000 PCS
SCF030-0805RB	5000 PCS	SCF100-0805RB	4000 PCS
SCF110-0805RB	4000 PCS		

Surface Mount Resettable PTCs

SCF0805RB Series

Tape Specifications (Unit: mm)

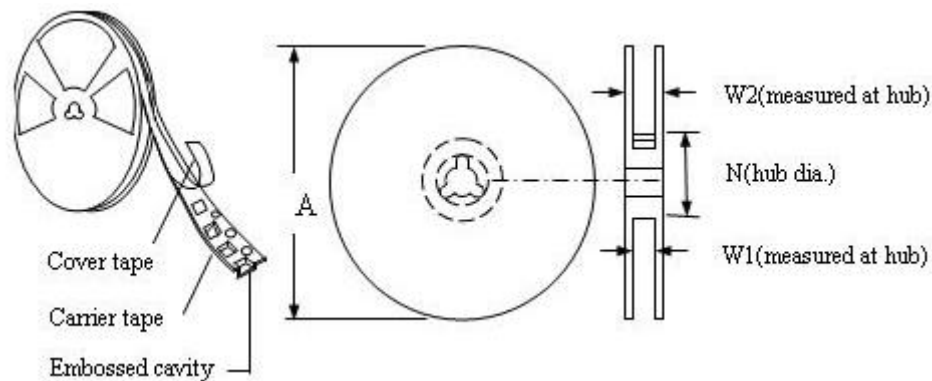
Tape Component Dimensions



Symbol	Dimensions
W	8.00±0.30
P₀	4.00±0.10
P₁	4.00±0.10
P₂	2.00±0.05
A₀	1.65±0.10
B₀	2.35±0.10
D₀	1.55±0.05
F	3.50±0.05
E₁	1.75±0.10
T	0.20±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.