SOCAY

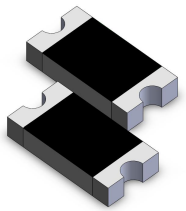
HF RoHS

Surface Mount Resettable PTCs

SCF1206RB Series

Features

- RoHS Compliant & Halogen Free
- Faster tripping, 1206 Dimension, Surface mountable, Solid state
- Operation Current: 0.05A ~ 2.00A
- Maximum Voltage: 6V ~ 60Vdc
- Operating Temperature: -40℃ ~ + 85℃



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)
SCF005-1206RB	0.05	0.15	60.0	100	0.4	0.25	1.50	3.600	50.00
SCF010-1206RB	0.10	0.25	60.0	100	0.4	0.50	1.00	1.600	15.00
SCF012-1206RB	0.12	0.29	30.0	100	0.4	1.00	0.20	1.350	12.00
SCF016-1206RB	0.16	0.37	30.0	100	0.4	1.00	0.30	1.000	6.000
SCF020-1206RB	0.20	0.46	24.0	100	0.6	8.00	0.08	0.350	3.500
SCF020-30-1206RB	0.20	0.46	30.0	100	0.6	8.00	0.08	0.350	3.500
SCF025-24-1206RB	0.25	0.50	24.0	100	0.6	8.00	0.08	0.350	2.700
SCF025-1206RB	0.25	0.50	16.0	100	0.6	8.00	0.08	0.350	2.700
SCF030-1206RB	0.30	0.65	16.0	100	0.6	8.00	0.10	0.250	2.000
SCF035-1206RB	0.35	0.75	16.0	100	0.6	8.00	0.10	0.250	1.300
SCF035-24-1206RB	0.35	0.75	24.0	100	0.6	8.00	0.10	0.250	1.400
SCF035-30-1206RB	0.35	0.75	30.0	100	0.6	8.00	0.10	0.250	1.400
SCF050-1206RB	0.50	1.00	6.0	100	0.6	8.00	0.10	0.150	0.700
SCF050-13.2-1206RB	0.50	1.00	13.2	100	0.6	8.00	0.10	0.150	0.700
SCF050-16-1206RB	0.50	1.00	16.0	100	0.6	8.00	0.10	0.150	1.000
SCF050-24-1206RB	0.50	1.00	24.0	100	0.6	8.00	0.10	0.150	0.750
SCF075-1206RB	0.75	1.50	6.0	100	0.6	8.00	0.20	0.090	0.500
SCF075-13.2-1206RB	0.75	1.50	13.2	100	0.6	8.00	0.20	0.090	0.500
SCF075-16-1206RB	0.75	1.50	16.0	100	0.6	8.00	0.20	0.090	0.500
SCF100-1206RB	1.00	1.80	6.0	100	0.6	8.00	0.30	0.055	0.270
SCF100-13.2-1206RB	1.00	1.80	13.2	100	0.6	8.00	0.30	0.055	0.270
SCF110-1206RB	1.10	1.80	8.0	100	0.6	8.00	0.30	0.050	0.230
SCF110-16-1206RB	1.10	1.80	16	100	0.6	8.00	0.30	0.050	0.260

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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)
SCF150-1206RB	1.50	3.00	6.0	100	0.8	8.00	1.00	0.040	0.130
SCF150-12-1206RB	1.50	3.00	12.0	40	0.6	8.00	1.00	0.040	0.130
SCF200-1206RB	2.00	3.50	6.0	100	0.8	8.00	1.00	0.018	0.080

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

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

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

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

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

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

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℃	$R_{min} \leq R \leq R_{1max}$
Time to Trip	Specified current, V_{max}, 25℃	T≤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℃,1000 hours	±10%
Humidity Aging	85℃/85%RH.100 hours	±5%
Thermal Shock	MIL-STD-202, Method 107G +85℃/-40℃, 20 times	±33% typical resistance change
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	ML-STD-883C, Test Condition A	No change

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Thermal Derating Chart - IH (A)

Model	Maximum ambient operating temperature (℃)								
	-40	-20	0	25	40	50	60	70	85
SCF005-1206RB	0.09	0.08	0.06	0.05	0.04	0.036	0.033	0.029	0.02
SCF010-1206RB	0.18	0.16	0.12	0.10	0.08	0.072	0.066	0.058	0.04
SCF012-1206RB	0.216	0.192	0.144	0.120	0.096	0.086	0.079	0.070	0.048
SCF016-1206RB	0.288	0.256	0.192	0.160	0.128	0.115	0.106	0.093	0.064
SCF020-1206RB	0.31	0.26	0.22	0.20	0.18	0.16	0.15	0.13	0.07
SCF020-30-1206RB	0.31	0.26	0.22	0.20	0.18	0.16	0.15	0.13	0.07
SCF025-24-1206RB	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
SCF025-1206RB	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
SCF030-1206RB	0.444	0.396	0.348	0.30	0.264	0.24	0.204	0.18	0.144
SCF035-1206RB	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
SCF035-24-1206RB	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
SCF035-30-1206RB	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
SCF050-1206RB	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SCF050-13.2-1206RB	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SCF050-16-1206RB	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SCF050-24-1206RB	0.639	0.576	0.513	0.50	0.378	0.351	0.315	0.279	0.225
SCF075-1206RB	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
SCF075-13.2-1206RB	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
SCF075-16-1206RB	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
SCF100-1206RB	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
SCF100-13.2-1206RB	1.305	1.179	1.035	1.00	0.756	0.693	0.621	0.549	0.432
SCF110-1206RB	1.595	1.441	1.265	1.10	0.924	0.847	0.759	0.671	0.528
SCF110-16-1206RB	1.595	1.441	1.265	1.10	0.924	0.847	0.759	0.671	0.528
SCF150-1206RB	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
SCF150-12-1206RB	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
SCF200-1206RB	2.60	2.44	2.35	2.00	1.78	1.67	1.50	1.45	1.10

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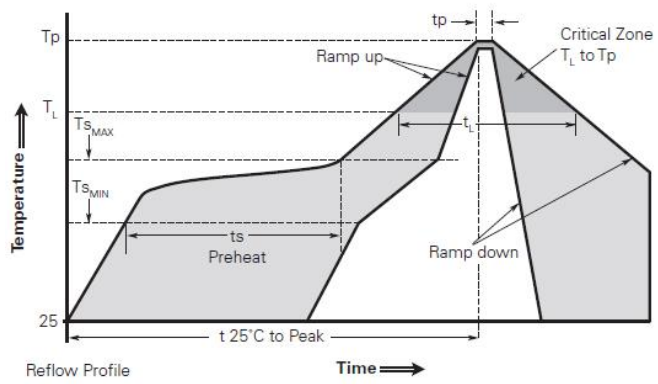
Soldering Parameters

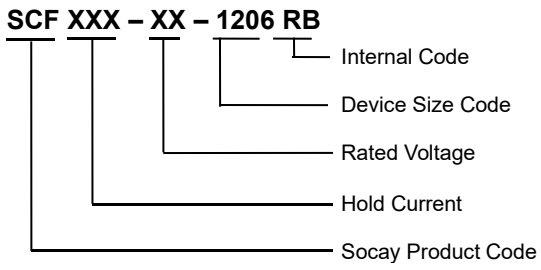


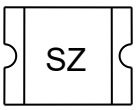
Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_S max to T_P)	3℃/second max.
Preheat : Temperature Min ($T_S$min) Temperature Max ($T_S$max) Time ($T_S$min to $T_S$max)	 150℃ 200℃ 60-120 seconds
Time maintained above: Temperature(T_L) Time (T_L)	 217℃ 60-150 seconds
Peak/Classification Temperature(T_P)	260℃
Time within 5 ℃ of actual peak temperature: Time (T_P)	30 seconds max.
Ramp-down Rate	3℃/ second max.
Time 25℃ 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





Example

SZ= SCF005-1206RB
SN= SCF010-1206RB
SN=SCF012-1206RB
SF= SCF016-1206RB
SF= SCF020-1206RB
SF= SCF020-30-1206RB
SF= SCF025-1206RB
SF= SCF025-24-1206RB
SB= SCF030-1206RB
SB= SCF035-1206RB
SB= SCF035-24-1206RB
SB= SCF035-30-1206RB
SG= SCF050-1206RB
SG= SCF050-13.2-1206RB
SG= SCF050-16-1206RB
SG= SCF050-24-1206RB
SA= SCF075-1206RB
SA= SCF075-13.2-1206RB
SA= SCF075-16-1206RB
SH= SCF100-1206RB
SH= SCF100-13.2-1206RB
SH= SCF110-1206RB
SH= SCF110-16-1206RB
SI= SCF150-1206RB
SI= SCF150-12-1206RB
SK= SCF200-1206RB

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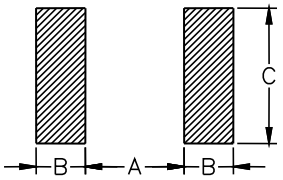
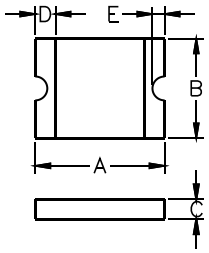
Recommended Solder Pad Layout Dimensions (Unit: mm)

The dimension in the table below provide the recommended pad layout for each SCF1206RB Series device



Device	A	B	C
1206 Series	2.0±0.1	1.0±0.1	1.9±0.1

Product Dimensions (Unit: mm)



Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF005-1206RB	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SCF010-1206RB	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SCF012-1206RB	3.00	3.50	1.50	1.80	0.60	1.10	0.15	0.10
SCF016-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF020-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF020-30-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF025-24-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF025-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF030-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF035-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF035-24-1206RB	3.00	3.50	1.50	1.80	0.40	0.90	0.15	0.10
SCF035-30-1206RB	3.00	3.50	1.50	1.80	0.50	1.20	0.15	0.10
SCF050-1206RB	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SCF050-13.2-1206RB	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SCF050-16-1206RB	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SCF050-24-1206RB	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SCF075-1206RB	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10
SCF075-13.2-1206RB	3.00	3.50	1.50	1.80	0.35	0.85	0.15	0.10

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Product Dimensions (Unit: mm) (Continue)

Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF075-16-1206RB	3.00	3.50	1.50	1.80	0.60	1.30	0.15	0.10
SCF100-1206RB	3.00	3.50	1.50	1.80	0.40	0.80	0.15	0.10
SCF100-13.2-1206RB	3.00	3.50	1.50	1.80	0.40	1.30	0.15	0.10
SCF110-1206RB	3.00	3.50	1.50	1.80	0.40	0.80	0.15	0.10
SCF110-16-1206RB	3.00	3.50	1.50	1.80	0.60	1.30	0.15	0.10
SCF150-1206RB	3.00	3.50	1.50	1.80	0.60	1.50	0.15	0.10
SCF150-12-1206RB	3.00	3.50	1.50	1.80	0.80	1.80	0.15	0.10
SCF200-1206RB	3.00	3.50	1.50	1.80	0.70	1.50	0.15	0.10

Packaging Quantity

Part Number	Quantity	Part Number	Quantity
SCF005-1206RB	3500 PCS	SCF050-24-1206RB	3500 PCS
SCF010-1206RB	3500 PCS	SCF075-1206RB	5000 PCS
SCF012-1206RB	3500 PCS	SCF075-13.2-1206RB	5000 PCS
SCF016-1206RB	5000 PCS	SCF075-16-1206RB	3500 PCS
SCF020-1206RB	5000 PCS	SCF100-1206RB	5000 PCS
SCF020-30-1206RB	5000 PCS	SCF100-13.2-1206RB	3500 PCS
SCF025-1206RB	5000 PCS	SCF110-1206RB	5000 PCS
SCF025-24-1206RB	5000 PCS	SCF110-16-1206RB	5000 PCS
SCF030-1206RB	5000 PCS	SCF150-1206RB	3500 PCS
SCF035-1206RB	5000 PCS	SCF150-12-1206RB	3500 PCS
SCF035-24-1206RB	5000 PCS	SCF200-1206RB	3500 PCS
SCF035-30-1206RB	3500 PCS	--	--
SCF050-1206RB	5000 PCS	--	--
SCF050-13.2-1206RB	5000 PCS	--	--
SCF050-16-1206RB	5000 PCS	--	--

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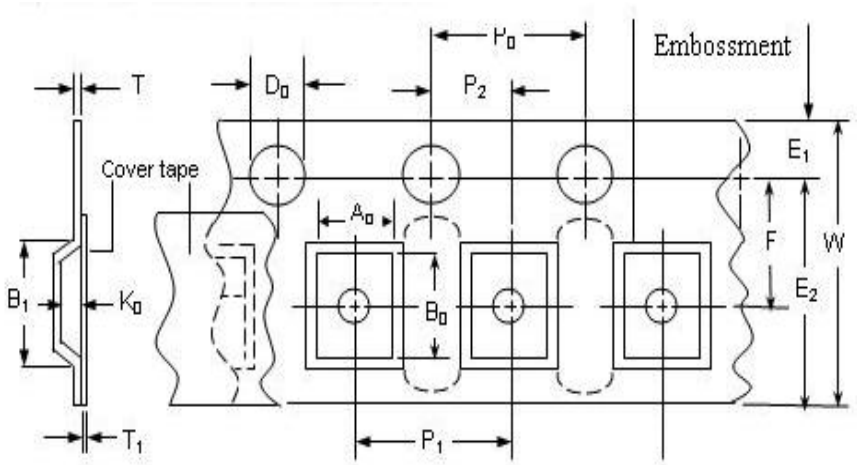
Tape Specifications (Unit: mm)

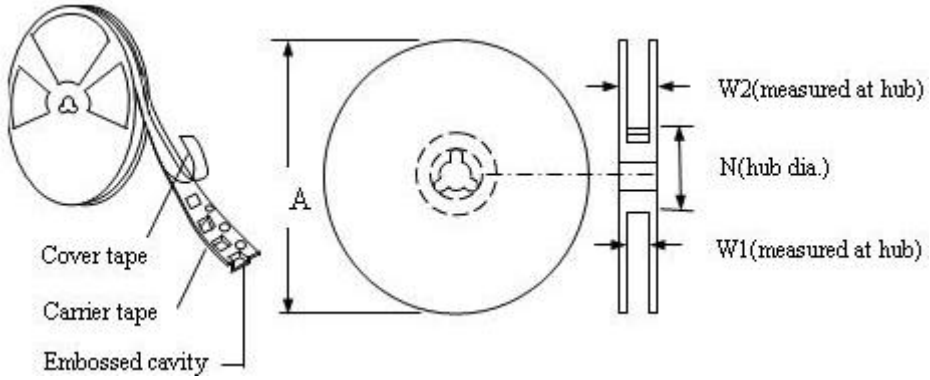
EIA Tape Component Dimensions



Symbol	Dimensions
W	8.15+0.15/-0.30
P_0	4.00±0.10
P_1	4.00±0.10
P_2	2.00±0.05
A_0	1.95±0.10
B_0	3.56±0.10
D_0	1.55±0.05
F	3.50±0.05
E_1	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.