SOCAY

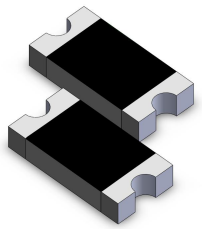
HF RoHS

Surface Mount Resettable PTCs

SCF1206RZB Series

Features

- RoHS Compliant & Halogen Free
- Faster tripping, 1206 Dimension, Surface mountable, Solid state
- Operation Current: 1.5A ~ 7.5A, @25℃
- Maximum Voltage: 6V / 12V
- Operating Temperature: -40℃ ~ + 85℃



Electrical Characteristics

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)
SCF150-1206RZB	1.5	3.0	6.0	50.0	0.8	8.0	5.0	0.010	0.065
SCF150-12-1206RZB	1.5	3.0	12.0	50.0	0.8	8.0	5.0	0.010	0.065
SCF175-1206RZB	1.75	3.5	6.0	50.0	0.8	8.0	5.0	0.010	0.060
SCF175-12-1206RZB	1.75	3.5	12.0	50.0	0.8	8.0	5.0	0.010	0.060
SCF200-1206RZB	2.0	4.0	6.0	50.0	0.8	8.0	5.0	0.008	0.040
SCF200-12-1206RZB	2.0	4.0	12.0	50.0	0.8	8.0	5.0	0.008	0.040
SCF260-1206RZB	2.6	5.2	6.0	50.0	0.8	8.0	5.0	0.004	0.026
SCF260-12-1206RZB	2.6	5.2	12.0	50.0	0.8	8.0	5.0	0.004	0.026
SCF300-1206RZB	3.0	6.0	6.0	50.0	0.8	15.0	2.0	0.004	0.020
SCF300-12-1206RZB	3.0	6.0	12.0	50.0	0.8	15.0	2.0	0.004	0.020
SCF350-1206RZB	3.5	7.0	6.0	50.0	1.0	17.5	2.0	0.004	0.018
SCF350-12-1206RZB	3.5	7.0	12.0	50.0	1.0	17.5	2.0	0.004	0.018
SCF380-1206RZB	3.8	7.6	6.0	50.0	1.0	19.0	2.0	0.004	0.016
SCF380-12-1206RZB	3.8	7.6	12.0	50.0	1.0	19.0	2.0	0.004	0.016
SCF400-1206RZB	4.0	8.0	6.0	50.0	1.0	20.0	2.0	0.004	0.014
SCF400-12-1206RZB	4.0	8.0	12.0	50.0	1.0	20.0	2.0	0.004	0.014
SCF450-1206RZB	4.5	9.0	6.0	50.0	1.0	22.5	2.0	0.002	0.012
SCF450-12-1206RZB	4.5	9.0	12.0	50.0	1.0	22.5	2.0	0.002	0.012
SCF500-1206RZB	5.0	10.0	6.0	50.0	1.0	25.0	2.0	0.002	0.011
SCF500-12-1206RZB	5.0	10.0	12.0	50.0	1.0	25.0	2.0	0.002	0.011
SCF550-1206RZB	5.5	11.0	6.0	50.0	1.2	27.5	2.0	0.002	0.010
SCF550-12-1206RZB	5.5	11.0	12.0	50.0	1.2	27.5	2.0	0.002	0.010
SCF600-1206RZB	6.0	12.0	6.0	50.0	1.2	30.0	2.0	0.002	0.009
SCF600-12-1206RZB	6.0	12.0	12.0	50.0	1.2	30.0	2.0	0.002	0.009

Surface Mount Resettable PTCs

SCF1206RZB Series

Electrical Characteristics (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)
SCF650-1206RZB	6.5	13.0	6.0	50.0	1.2	32.5	2.0	0.001	0.009
SCF650-12-1206RZB	6.5	13.0	12.0	50.0	1.2	32.5	2.0	0.001	0.009
SCF700-1206RZB	7.0	14.0	6.0	50.0	1.2	35.0	2.0	0.001	0.008
SCF700-12-1206RZB	7.0	14.0	12.0	50.0	1.2	35.0	2.0	0.001	0.008
SCF750-1206RZB	7.5	15.0	6.0	50.0	1.2	37.5	2.0	0.001	0.007
SCF750-12-1206RZB	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℃ still air.

I_{trip} = Trip Current. Minimum current at which the device from low resistance to high resistance in 25℃ 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℃ still air environment.

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

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

Test Procedures and Requirements

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

Environmental Specifications

Test Item	Test Conditions	Accept / Reject Criteria
Passive Aging	85℃,1000 hours	±10% typical
Humidity Aging	85℃/85%RH.100 hours	±5% typical
Thermal Shock	MIL-STD-202,Method 107G +85℃/-40℃,20 times	-30% typical
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 - I_H (A)

Model	Maximum ambient operating temperature (℃)								
	-40	-20	0	25	40	50	60	70	85
SCF150-1206RZB	2.01	1.77	1.62	1.50	1.22	1.12	1.04	0.87	0.61
SCF150-12-1206RZB	2.01	1.77	1.62	1.50	1.22	1.12	1.04	0.87	0.61
SCF175-1206RZB	2.34	2.05	1.89	1.75	1.44	1.31	1.20	1.00	0.72
SCF175-12-1206RZB	2.34	2.05	1.89	1.75	1.44	1.31	1.20	1.00	0.72
SCF200-1206RZB	2.68	2.33	2.15	2.00	1.66	1.49	1.37	1.15	0.80
SCF200-12-1206RZB	2.68	2.33	2.15	2.00	1.66	1.49	1.37	1.15	0.80
SCF260-1206RZB	3.49	3.05	2.82	2.60	2.15	1.93	1.78	1.49	1.04
SCF260-12-1206RZB	3.49	3.05	2.82	2.60	2.15	1.93	1.78	1.49	1.04
SCF300-1206RZB	4.03	3.51	3.26	3.00	2.49	2.23	2.06	1.71	1.20
SCF300-12-1206RZB	4.03	3.51	3.26	3.00	2.49	2.23	2.06	1.71	1.20
SCF350-1206RZB	4.70	4.10	3.80	3.50	2.90	2.60	2.40	2.00	1.40
SCF350-12-1206RZB	4.70	4.10	3.80	3.50	2.90	2.60	2.40	2.00	1.40
SCF380-1206RZB	6.40	4.85	4.25	3.80	3.20	2.80	2.49	2.05	1.43
SCF380-12-1206RZB	6.40	4.85	4.25	3.80	3.20	2.80	2.49	2.05	1.43
SCF400-1206RZB	6.74	5.11	4.47	4.00	3.37	2.95	2.62	2.16	1.51
SCF400-12-1206RZB	6.74	5.11	4.47	4.00	3.37	2.95	2.62	2.16	1.51
SCF450-1206RZB	6.85	5.92	5.47	4.50	3.73	3.34	3.00	2.35	1.55
SCF450-12-1206RZB	6.85	5.92	5.47	4.50	3.73	3.34	3.00	2.35	1.55
SCF500-1206RZB	7.30	6.34	5.66	5.00	4.42	3.85	3.47	3.12	2.38
SCF500-12-1206RZB	7.30	6.34	5.66	5.00	4.42	3.85	3.47	3.12	2.38
SCF550-1206RZB	8.03	6.97	6.32	5.50	4.86	4.24	3.82	3.43	2.62
SCF550-12-1206RZB	8.03	6.97	6.32	5.50	4.86	4.24	3.82	3.43	2.62
SCF600-1206RZB	8.46	7.60	6.75	6.00	5.15	4.35	4.00	3.55	2.86
SCF600-12-1206RZB	8.46	7.60	6.75	6.00	5.15	4.35	4.00	3.55	2.86
SCF650-1206RZB	9.17	8.23	7.31	6.50	5.58	4.60	4.33	3.73	3.10
SCF650-12-1206RZB	9.17	8.23	7.31	6.50	5.58	4.60	4.33	3.73	3.10
SCF700-1206RZB	9.87	8.87	7.88	7.00	6.01	4.96	4.67	4.01	3.34
SCF700-12-1206RZB	9.87	8.87	7.88	7.00	6.01	4.96	4.67	4.01	3.34
SCF750-1206RZB	10.58	9.50	8.44	7.50	6.44	5.31	5.00	4.30	3.58
SCF750-12-1206RZB	10.58	9.50	8.44	7.50	6.44	5.31	5.00	4.30	3.58

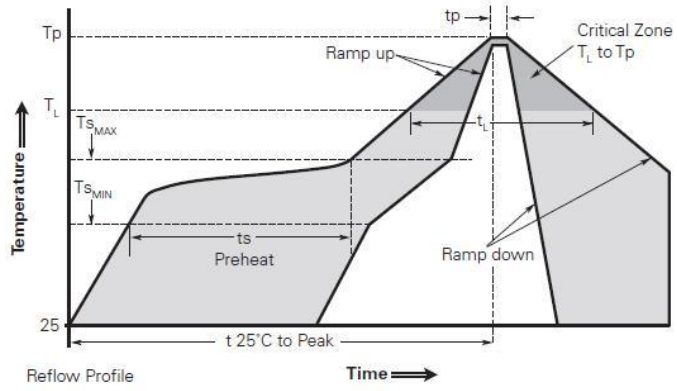
Surface Mount Resettable PTCs

SCF1206RZB Series

Physical Characteristics

Terminal pad materials	Tin-Plated Nickle-copper
Terminal pad solderability	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.
Moisture Sensitivity	Level 2a, per IPC/JEDEC J-STD 020C

Soldering Parameters

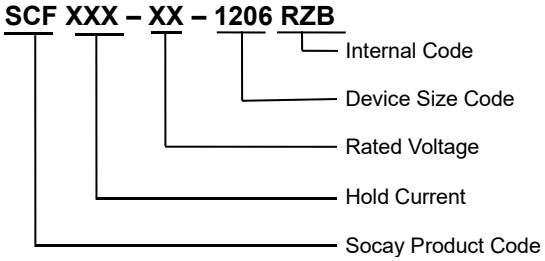


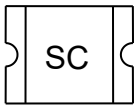
Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_S max to T_P)	3℃/second max.
Preheat : Temperature Min ($T_S$min) Temperature Max ($T_S$max) Time ($T_S$min to $T_S$max)	 150℃ 200℃ 60-120 seconds
Time maintained above: Temperature(T_L) Time (T_L)	 217℃ 60-150 seconds
Peak/Classification Temperature(T_P)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

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

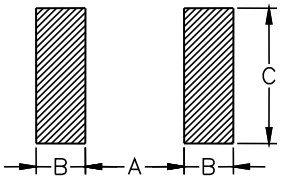
SC= SCF150-1206RZB
SC= SCF150-12-1206RZB
SD= SCF175-1206RZB
SD= SCF175-12-1206RZB
SD= SCF200-1206RZB
SD= SCF200-12-1206RZB
SL= SCF260-1206RZB
SL= SCF260-12-1206RZB
SL= SCF300-1206RZB
SL= SCF300-12-1206RZB
SL= SCF350-1206RZB
SL= SCF350-12-1206RZB
SR= SCF380-1206RZB
SR= SCF380-12-1206RZB
SR= SCF400-1206RZB
SR= SCF400-12-1206RZB
SR= SCF450-1206RZB
SR= SCF450-12-1206RZB
SP= SCF500-1206RZB
SP= SCF500-12-1206RZB
SP= SCF550-1206RZB
SP= SCF550-12-1206RZB
SS= SCF600-1206RZB
SS= SCF600-12-1206RZB
SS= SCF650-1206RZB
SS= SCF650-12-1206RZB
ST= SCF700-1206RZB
ST= SCF700-12-1206RZB
ST= SCF750-1206RZB
ST= SCF750-12-1206RZB

Surface Mount Resettable PTCs

SCF1206RZB Series

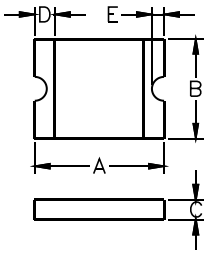
Recommended Solder Pad Layout Dimensions (Unit: mm)

The dimension in the table below provide the recommended pad layout for each SCF1206RZB device



Device	A	B	C
1206RZB Series	1.8±0.1	1.0±0.1	1.8±0.1

Product Dimensions (Unit: mm)



Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF150-1206RZB	3.00	3.50	1.50	1.80	0.30	0.70	0.15	0.10
SCF150-12-1206RZB	3.00	3.50	1.50	1.80	0.30	0.70	0.15	0.10
SCF175-1206RZB	3.00	3.50	1.50	1.80	0.30	0.70	0.15	0.10
SCF175-12-1206RZB	3.00	3.50	1.50	1.80	0.30	0.70	0.15	0.10
SCF200-1206RZB	3.00	3.50	1.50	1.80	0.30	0.70	0.15	0.10
SCF200-12-1206RZB	3.00	3.50	1.50	1.80	0.30	0.70	0.15	0.10
SCF260-1206RZB	3.00	3.50	1.50	1.80	0.40	1.00	0.15	0.10
SCF260-12-1206RZB	3.00	3.50	1.50	1.80	0.40	1.00	0.15	0.10
SCF300-1206RZB	3.00	3.50	1.50	1.80	0.40	1.20	0.15	0.10
SCF300-12-1206RZB	3.00	3.50	1.50	1.80	0.40	1.20	0.15	0.10
SCF350-1206RZB	3.00	3.50	1.50	1.80	0.40	1.20	0.15	0.10
SCF350-12-1206RZB	3.00	3.50	1.50	1.80	0.40	1.20	0.15	0.10
SCF380-1206RZB	3.00	3.50	1.50	1.80	0.40	1.20	0.15	0.10
SCF380-12-1206RZB	3.00	3.50	1.50	1.80	0.40	1.20	0.15	0.10
SCF400-1206RZB	3.00	3.50	1.50	1.80	0.50	1.20	0.15	0.10
SCF400-12-1206RZB	3.00	3.50	1.50	1.80	0.50	1.20	0.15	0.10

Surface Mount Resettable PTCs

SCF1206RZB Series

Product Dimensions (Unit: mm) (Continue)

Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF450-1206RZB	3.00	3.50	1.50	1.80	0.50	1.40	0.15	0.10
SCF450-12-1206RZB	3.00	3.50	1.50	1.80	0.50	1.40	0.15	0.10
SCF500-1206RZB	3.00	3.50	1.50	1.80	0.50	1.40	0.15	0.10
SCF500-12-1206RZB	3.00	3.50	1.50	1.80	0.50	1.40	0.15	0.10
SCF550-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF550-12-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF600-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF600-12-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF650-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF650-12-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF700-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF700-12-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF750-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10
SCF750-12-1206RZB	3.00	3.50	1.50	1.80	0.60	1.60	0.15	0.10

Packaging Quantity

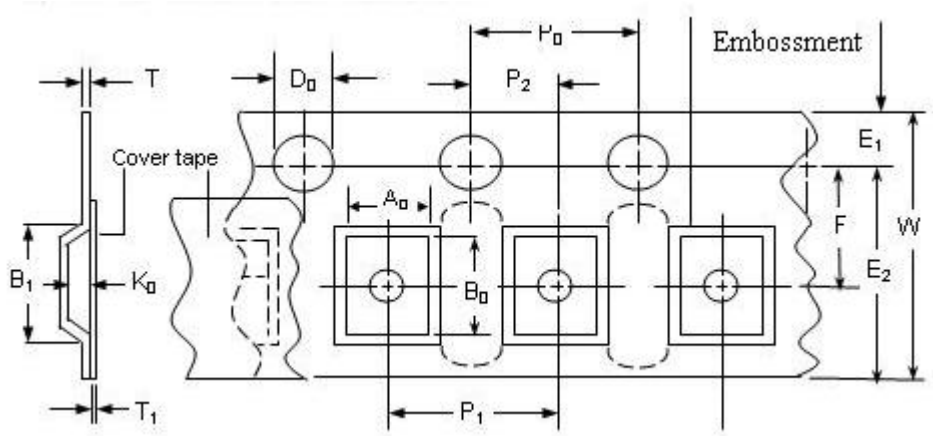
Part Number	Quantity	Part Number	Quantity
SCF150-1206RZB	5000 PCS	SCF400-12-1206RZB	3500 PCS
SCF150-12-1206RZB	5000 PCS	SCF450-1206RZB	3500 PCS
SCF175-1206RZB	5000 PCS	SCF450-12-1206RZB	3500 PCS
SCF175-12-1206RZB	5000 PCS	SCF500-1206RZB	3000 PCS
SCF200-1206RZB	5000 PCS	SCF500-12-1206RZB	3000 PCS
SCF200-12-1206RZB	5000 PCS	SCF550-1206RZB	3000 PCS
SCF260-1206RZB	5000 PCS	SCF550-12-1206RZB	3000 PCS
SCF260-12-1206RZB	5000 PCS	SCF600-1206RZB	3000 PCS
SCF300-1206RZB	5000 PCS	SCF600-12-1206RZB	3000 PCS
SCF300-12-1206RZB	5000 PCS	SCF650-1206RZB	3000 PCS
SCF350-1206RZB	5000 PCS	SCF650-12-1206RZB	3000 PCS
SCF350-12-1206RZB	5000 PCS	SCF700-1206RZB	3000 PCS
SCF380-1206RZB	3500 PCS	SCF700-12-1206RZB	3000 PCS
SCF380-12-1206RZB	3500 PCS	SCF750-1206RZB	3000 PCS
SCF400-1206RZB	3500 PCS	SCF750-12-1206RZB	3000 PCS

Surface Mount Resettable PTCs

SCF1206RZB Series

Tape Specifications and Reel Specifications (Unit: mm)

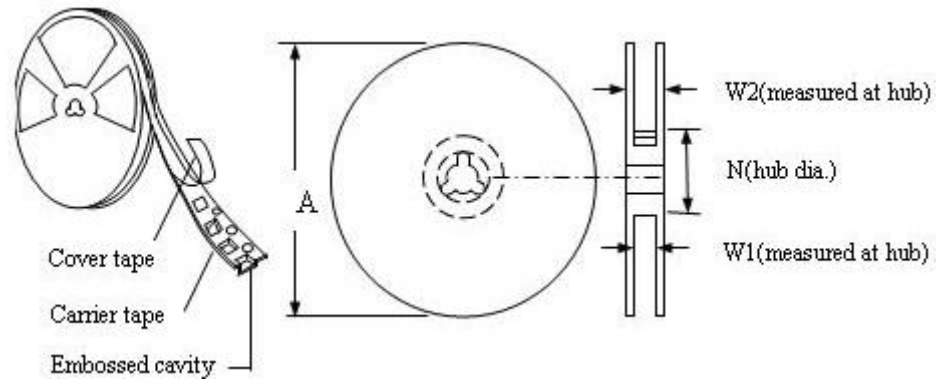
Tape Component Dimensions



Symbol	Dimensions
W	8.15+0.15/-0.3
P_0	4.0±0.10
P_1	4.0±0.10
P_2	2.0±0.05
A_0	1.95±0.10
B_0	3.65±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

Tape Specifications and Reel Specifications (Unit: mm) (Continue)

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.