

## Surface Mount Resettable PTCs

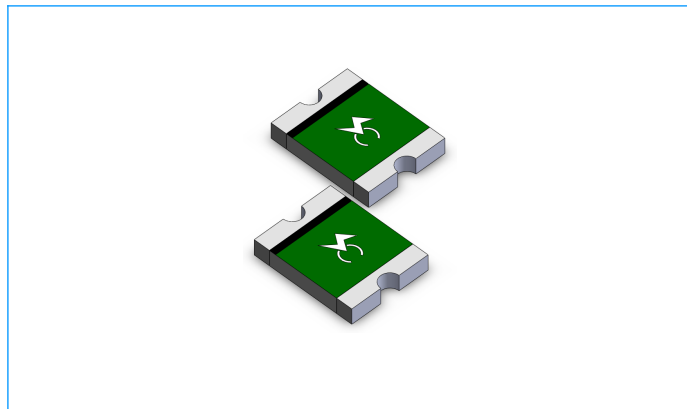
### SCF1210 Series

#### Description

The SCF1210 Series PTC provides surface mount over-current protection for applications where space is at a premium and resettable protection is desired.

#### Features

- u RoHS compliant, Lead-Free and Halogen-Free
- u Fast time-to-trip
- u Compact design saves board space
- u Low resistance
- u Low-profile



#### Applications

- u PC motherboard - plug and play protection
- u Mobile phones - battery and port protection
- u Game console port protection
- u USB peripherals
- u Disk drive
- u PDAS / digital cameras
- u Power ports
- u General electronics

#### 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.)	$R_{min}$ ( $\Omega$ )	$R_{1max}$ ( $\Omega$ )
SCF005-1210R	0.05	0.15	60	100	0.60	0.25	3.00	3.600	50.000
SCF010-1210R	0.10	0.25	60	100	0.60	0.50	1.50	1.600	15.000
SCF020-1210R	0.20	0.40	30	100	0.60	8.00	0.02	0.800	5.000
SCF035-1210R	0.35	0.70	16	100	0.60	8.00	0.20	0.320	1.3000
SCF050-1210R	0.50	1.00	16	100	0.60	8.00	0.10	0.250	0.900
SCF075-1210R	0.75	1.50	8	100	0.60	8.00	0.10	0.130	0.400
SCF075-24-1210R	0.75	1.50	24	100	0.60	8.00	0.10	0.130	0.400
SCF110-1210R	1.10	2.20	6	100	0.80	8.00	0.30	0.060	0.210
SCF150-1210R	1.50	3.00	6	100	0.80	8.00	0.50	0.040	0.110
SCF175-1210R	1.75	4.00	6	100	0.80	8.00	0.60	0.020	0.080
SCF200-1210R	2.00	4.00	6	100	0.80	8.00	1.00	0.015	0.070

$I_{hold}$  = Hold current: maximum current device will pass without tripping in 23°C still air.

$I_{trip}$  = Trip current: minimum current at which the device will trip in 23°C still air.

$V_{max}$  = Maximum voltage device can withstand without damage at rated current ( $I_{max}$ )

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

$P_{dtyp.}$  = Power dissipated from device when in the tripped state at 23°C still air.

$R_{min}$  = Minimum resistance of device in initial (un-soldered) state.

$R_{1max}$  = Maximum resistance of device at 23°C measured one hour after tripping.

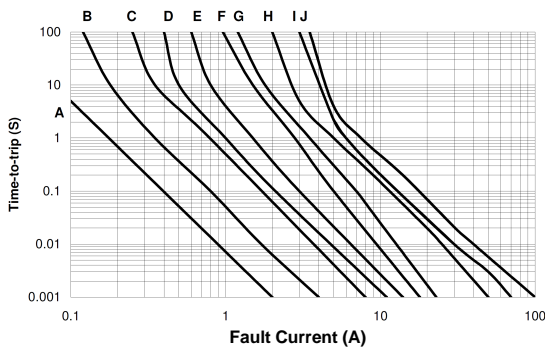
Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

# Surface Mount Resettable PTCs

## SCF1210 Series

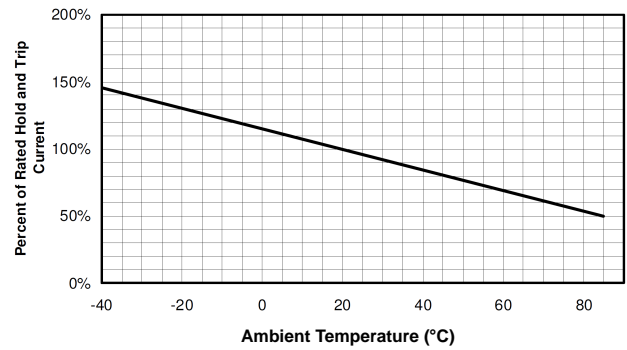
### Temperature Derating Chart – $I_{hold}$ (A)

#### Average Time Current Curves



A= SCF005-1210R	F= SCF075-1210R
B= SCF010-1210R	/SCF075-24-1210R
C= SCF020-1210R	G= SCF110-1210R
D= SCF035-1210R	H= SCF150-1210R
E= SCF050-1210R	I= SCF175-1210R
	J= SCF200-1210R

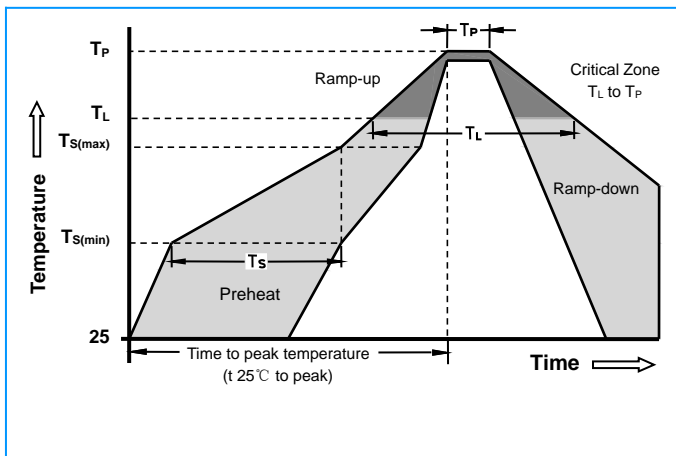
#### Temperature Derating Curve



### Material Specifications

Terminal pad material	Pure Tin
Soldering Characteristics	Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

### Soldering Parameters



#### Solder reflow

Due to "Lead Free" nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

1. Recommended max past thickness > 0.25mm.
2. Devices can be cleaned using standard methods and aqueous solvent.
3. Rework use standard industry practices.
4. Storage Environment : < 30°C/ 60%RH

<b>Profile Feature</b>	Pb-Free Assembly
<b>Average Ramp-Up Rate (<math>T_S</math> max to <math>T_P</math>)</b>	3°C/second max.
<b>Preheat :</b> Temperature Min ( $T_{Smin}$ ) Temperature Max ( $T_{Smax}$ ) Time ( $T_{Smin}$ to $T_{Smax}$ )	150°C 200°C 60-180 seconds
<b>Time maintained above:</b> Temperature( $T_L$ ) Time ( $T_L$ )	217°C 60-150 seconds
<b>Peak/Classification Temperature(<math>T_P</math>):</b>	260°C
<b>Time within 5°C of actual peak:</b> Temperature	20-40 seconds
<b>Ramp-down Rate:</b>	6°C/ second max.
<b>Time 25°C to Peak Temperature</b>	8 minutes max.

Note: All temperatures refer to of the package, measured on the package body surface.

#### Caution:

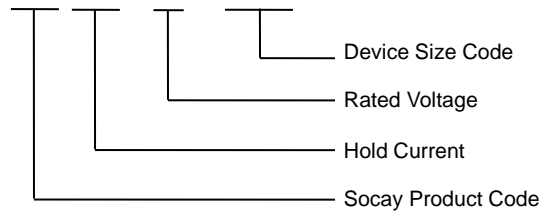
1. If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
2. Devices are not designed to be wave soldered to the bottom side of the board.

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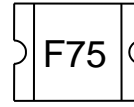
## SCF1210 Series

### Part Numbering

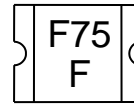
SCF XXX – XX – 1210R



### Part Marking



F XX  
Hold Current  
Logo

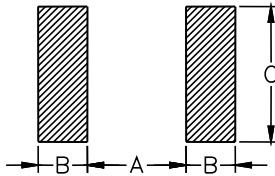


F XX  
X  
Hold Current  
Logo

Example

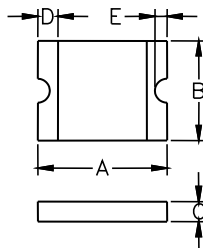
### Pad Layouts Unit: mm

The dimension in the table below provide the recommended pad layout for each SCF1210 device



Device	A	B	C
	Nominal	Nominal	Nominal
1210 Series	2.00	1.00	2.80

### Dimensions Unit: mm



Part Number	A		B		C		D		E	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SCF005-1210R	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
SCF010-1210R	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
SCF020-1210R	3.00	3.43	2.35	2.80	0.40	0.85	0.25	0.75	0.10	0.45
SCF035-1210R	3.00	3.43	2.35	2.80	0.40	0.80	0.25	0.75	0.10	0.45
SCF050-1210R	3.00	3.43	2.35	2.80	0.30	0.75	0.25	0.75	0.10	0.45
SCF075-1210R	3.00	3.43	2.35	2.80	0.30	0.70	0.25	0.75	0.10	0.45
SCF075-24-1210R	3.00	3.43	2.35	2.80	0.80	1.20	0.25	0.75	0.10	0.45
SCF110-1210R	3.00	3.43	2.35	2.80	0.60	1.00	0.25	0.75	0.10	0.45
SCF150-1210R	3.00	3.43	2.35	2.80	0.50	0.90	0.25	0.75	0.10	0.45
SCF175-1210R	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45
SCF200-1210R	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45

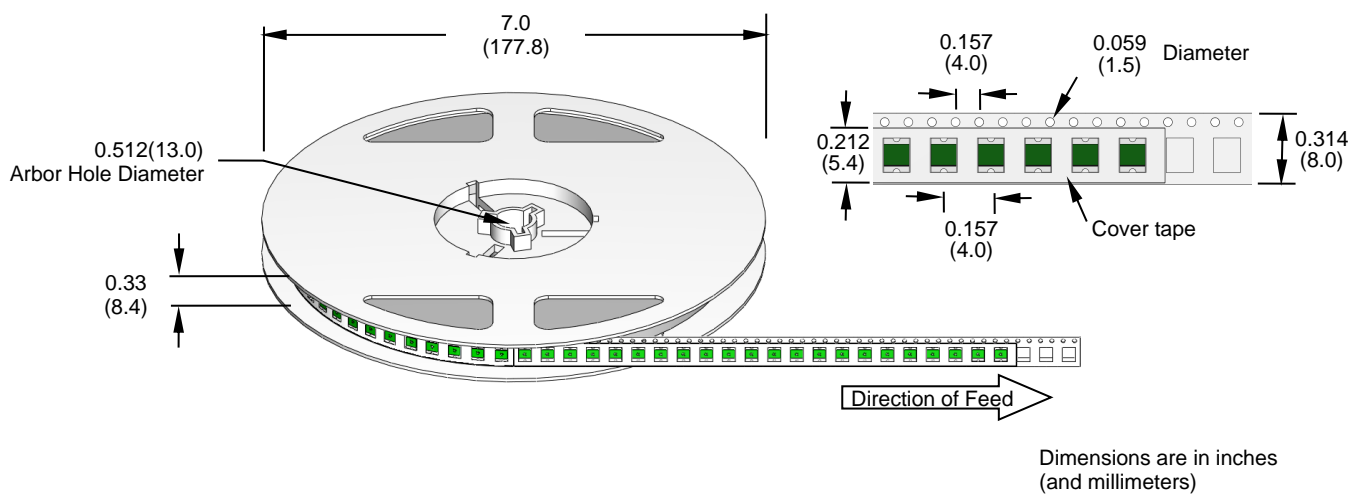
## Surface Mount Resettable PTCs

### SCF1210 Series

#### Packaging

Part Number	Packaging Option	Quantity
SCF005-1210R	Tape & Reel -8mm/7"tape	3000
SCF010-1210R	Tape & Reel -8mm/7"tape	3000
SCF020-1210R	Tape & Reel -8mm/7"tape	3000
SCF035-1210R	Tape & Reel -8mm/7"tape	4000
SCF050-1210R	Tape & Reel -8mm/7"tape	4000
SCF075-1210R	Tape & Reel -8mm/7"tape	4000
SCF075-24-1210R	Tape & Reel -8mm/7"tape	3000
SCF110-1210R	Tape & Reel -8mm/7"tape	3000
SCF150-1210R	Tape & Reel -8mm/7"tape	3000
SCF175-1210R	Tape & Reel -8mm/7"tape	3000
SCF200-1210R	Tape & Reel -8mm/7"tape	3000

#### Tape and Reel Specifications



#### 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.