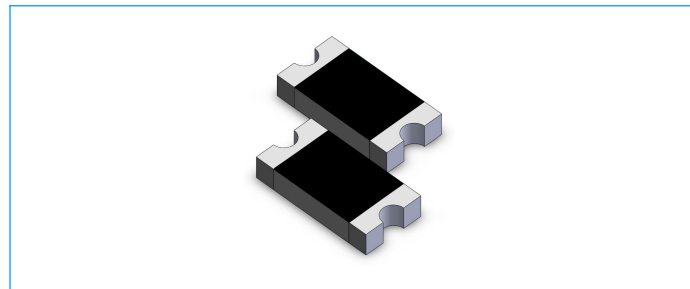


## Surface Mount Resettable PTCs

### SCF1812RZB Series

#### Features

- ◆ RoHS Compliant & Halogen Free
- ◆ Faster tripping, 1812 Dimension, Surface mountable, Solid state
- ◆ Operation Current: 1.9A ~ 9.0A, @25°C
- ◆ Maximum Voltage: 6V / 12V
- ◆ Operating Temperature: -40°C ~ + 85°C



#### 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.)	$R_{min}$ ( $\Omega$ )	$R_{1max}$ ( $\Omega$ )
SCF190-1812RZB	1.9	3.8	6.0	50.0	1.5	8.0	5.0	0.003	0.025
SCF190-12-1812RZB	1.9	3.8	12.0	50.0	1.5	8.0	5.0	0.003	0.025
SCF260-1812RZB	2.6	5.2	6.0	50.0	1.5	8.0	5.0	0.003	0.024
SCF260-12-1812RZB	2.6	5.2	12.0	50.0	1.5	8.0	5.0	0.003	0.024
SCF300-1812RZB	3.0	6.0	6.0	50.0	1.5	15.0	2.0	0.003	0.022
SCF300-12-1812RZB	3.0	6.0	12.0	50.0	1.5	15.0	2.0	0.003	0.022
SCF350-1812RZB	3.5	7.0	6.0	50.0	1.5	17.5	2.0	0.003	0.02
SCF350-12-1812RZB	3.5	7.0	12.0	50.0	1.5	17.5	2.0	0.003	0.02
SCF400-1812RZB	4.0	8.0	6.0	50.0	1.8	20.0	2.0	0.003	0.018
SCF400-12-1812RZB	4.0	8.0	12.0	50.0	1.8	20.0	2.0	0.003	0.018
SCF450-1812RZB	4.5	9.0	6.0	50.0	1.8	22.5	2.0	0.003	0.016
SCF450-12-1812RZB	4.5	9.0	12.0	50.0	1.8	22.5	2.0	0.003	0.016
SCF500-1812RZB	5.0	10.0	6.0	50.0	1.8	25.0	2.0	0.003	0.014
SCF500-12-1812RZB	5.0	10.0	12.0	50.0	1.8	25.0	2.0	0.003	0.014
SCF550-1812RZB	5.5	11.0	6.0	50.0	1.8	27.5	2.0	0.002	0.012
SCF550-12-1812RZB	5.5	11.0	12.0	50.0	1.8	27.5	2.0	0.002	0.012
SCF600-1812RZB	6.0	12.0	6.0	50.0	1.8	30.0	2.0	0.002	0.010
SCF600-12-1812RZB	6.0	12.0	12.0	50.0	1.8	30.0	2.0	0.002	0.010
SCF650-1812RZB	6.5	13.0	6.0	50.0	1.8	32.5	2.0	0.002	0.008
SCF650-12-1812RZB	6.5	13.0	12.0	50.0	1.8	32.5	2.0	0.002	0.008
SCF700-1812RZB	7.0	14.0	6.0	50.0	2.0	35.0	2.0	0.001	0.007
SCF700-12-1812RZB	7.0	14.0	12.0	50.0	2.0	35.0	2.0	0.001	0.007
SCF750-1812RZB	7.5	15.0	6.0	50.0	2.0	37.5	2.0	0.001	0.006
SCF750-12-1812RZB	7.5	15.0	12.0	50.0	2.0	37.5	2.0	0.001	0.006

## Surface Mount Resettable PTCs

### SCF1812RZB 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.)	$R_{min}$ ( $\Omega$ )	$R_{1max}$ ( $\Omega$ )
SCF800-1812RZB	8.0	16.0	6.0	50.0	2.0	40.0	2.0	0.0008	0.005
SCF800-12-1812RZB	8.0	16.0	12.0	50.0	2.0	40.0	2.0	0.0008	0.005
SCF850-1812RZB	8.5	17.0	6.0	50.0	2.2	42.5	2.0	0.0008	0.004
SCF850-12-1812RZB	8.5	17.0	12.0	50.0	2.2	42.5	2.0	0.0008	0.004
SCF900-1812RZB	9.0	18.0	6.0	50.0	2.2	45.0	2.0	0.0005	0.005
SCF900-12-1812RZB	9.0	18.0	12.0	50.0	2.2	45.0	2.0	0.0005	0.005

$I_{hold}$  = Hold Current. Maximum current at which the device will not interrupt in 25 °C still air.

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

$R_{min}$  = Minimum resistance of device at 25 °C 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°C	$R_{min} \leq R \leq R_{1max}$
Time to Ttrip	Specified current, $V_{max}$ , 25°C	$T \leq$ Maximum Time to Trip
Hold Current	30min, at $I_H$ , 25°C	No trip
Trip Endurance	$V_{MAX}$ , $I_{MAX}$ , 1 hour	No arcing or burning

#### Environmental Specifications

Test Item	Test Conditions	Resistance Change
Passive Aging	85°C, 1000 hours	±10% typical
Humidity Aging	85°C/85%RH. 100 hours	±5% typical
Thermal Shock	MIL-STD-202, Method 107G +85°C/-40°C, 20 times	-30% typical
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	ML-STD-883C, Test Condition A	No change

## Surface Mount Resettable PTCs

### SCF1812RZB Series

#### Thermal Derating Chart - I<sub>H</sub> (A)

Model	Maximum ambient operating temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
SCF190-1812RZB	2.76	2.47	2.22	1.90	1.63	1.46	1.31	1.18	0.95
SCF190-12-1812RZB	2.76	2.47	2.22	1.90	1.63	1.46	1.31	1.18	0.95
SCF260-1812RZB	3.78	3.38	3.04	2.60	2.23	2.00	1.79	1.61	1.30
SCF260-12-1812RZB	3.78	3.38	3.04	2.60	2.23	2.00	1.79	1.61	1.30
SCF300-1812RZB	4.35	3.90	3.51	3.00	2.58	2.31	2.07	1.86	1.50
SCF300-12-1812RZB	4.35	3.90	3.51	3.00	2.58	2.31	2.07	1.86	1.50
SCF350-1812RZB	5.08	4.55	4.10	3.50	3.01	2.70	2.42	2.17	1.75
SCF350-12-1812RZB	5.08	4.55	4.10	3.50	3.01	2.70	2.42	2.17	1.75
SCF400-1812RZB	5.80	5.20	4.68	4.00	3.44	3.08	2.76	2.48	2.00
SCF400-12-1812RZB	5.80	5.20	4.68	4.00	3.44	3.08	2.76	2.48	2.00
SCF450-1812RZB	6.54	5.85	5.26	4.50	3.86	3.46	3.10	2.79	2.25
SCF450-12-1812RZB	6.54	5.85	5.26	4.50	3.86	3.46	3.10	2.79	2.25
SCF500-1812RZB	7.26	6.50	5.84	5.00	4.29	3.84	3.45	3.11	2.50
SCF500-12-1812RZB	7.26	6.50	5.84	5.00	4.29	3.84	3.45	3.11	2.50
SCF550-1812RZB	7.99	7.15	6.43	5.50	4.72	4.23	3.79	3.42	2.75
SCF550-12-1812RZB	7.99	7.15	6.43	5.50	4.72	4.23	3.79	3.42	2.75
SCF600-1812RZB	8.72	7.80	7.01	6.00	5.15	4.61	4.14	3.73	3.00
SCF600-12-1812RZB	8.72	7.80	7.01	6.00	5.15	4.61	4.14	3.73	3.00
SCF650-1812RZB	9.44	8.45	7.59	6.50	5.58	4.99	4.48	4.04	3.25
SCF650-12-1812RZB	9.44	8.45	7.59	6.50	5.58	4.99	4.48	4.04	3.25
SCF700-1812RZB	10.17	9.10	8.18	7.00	6.01	5.38	4.83	4.35	3.50
SCF700-12-1812RZB	10.17	9.10	8.18	7.00	6.01	5.38	4.83	4.35	3.50
SCF750-1812RZB	10.89	9.75	8.76	7.50	6.44	5.76	5.18	4.66	3.75
SCF750-12-1812RZB	10.89	9.75	8.76	7.50	6.44	5.76	5.18	4.66	3.75
SCF800-1812RZB	11.62	10.40	9.34	8.00	6.87	6.15	5.52	4.97	4.00
SCF800-12-1812RZB	11.62	10.40	9.34	8.00	6.87	6.15	5.52	4.97	4.00
SCF850-1812RZB	12.34	11.05	9.93	8.50	7.30	6.53	5.87	5.28	4.25
SCF850-12-1812RZB	12.34	11.05	9.93	8.50	7.30	6.53	5.87	5.28	4.25
SCF900-1812RZB	13.07	11.70	10.51	9.00	7.73	6.92	6.21	5.59	4.50
SCF900-12-1812RZB	13.07	11.70	10.51	9.00	7.73	6.92	6.21	5.59	4.50

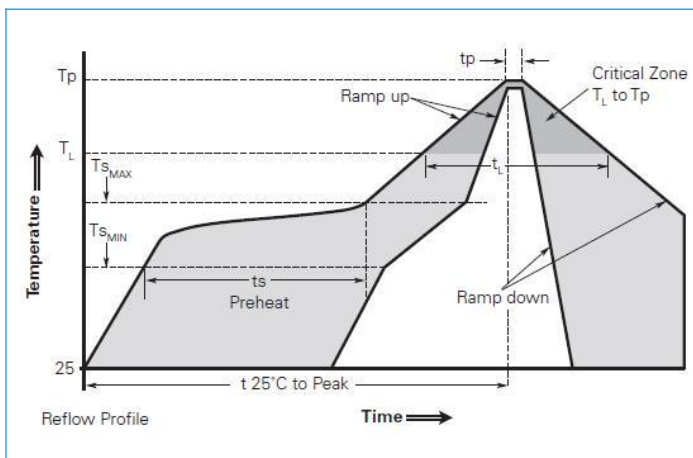
# Surface Mount Resettable PTCs

## SCF1812RZB Series

### Physical Characteristics

Terminal pad materials	Tin-Plated Nickel-copper
Soldering Zone	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



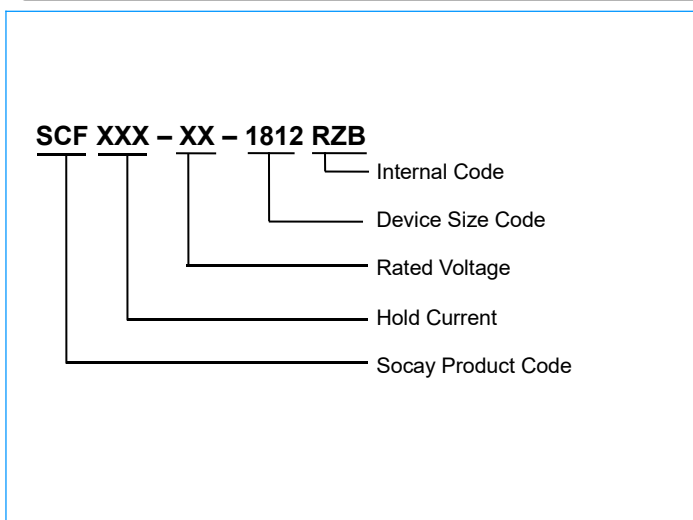
Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ( $T_S$ max to $T_P$ )	3°C/second max.
Preheat : Temperature Min ( $T_{Smin}$ ) Temperature Max ( $T_{Smax}$ ) Time ( $T_{Smin}$ to $T_{Smax}$ )	150°C 200°C 60-120 seconds
Time maintained above: Temperature ( $T_L$ ) Time ( $T_L$ )	217°C 60-150 seconds
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.

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

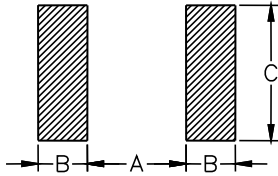
SC1= SCF190-1812RZB	SC5= SCF550-12-1812RZB
SC1= SCF190-12-1812RZB	SC6= SCF600-1812RZB
SC2= SCF260-1812RZB	SC6= SCF600-12-1812RZB
SC2= SCF260-12-1812RZB	SC6= SCF650-1812RZB
SC3= SCF300-1812RZB	SC6= SCF650-12-1812RZB
SC3= SCF300-12-1812RZB	SC7= SCF700-1812RZB
SC3= SCF350-1812RZB	SC7= SCF700-12-1812RZB
SC3= SCF350-12-1812RZB	SC7= SCF750-1812RZB
SC4= SCF400-1812RZB	SC7= SCF750-12-1812RZB
SC4= SCF400-12-1812RZB	SC8= SCF800-1812RZB
SC4= SCF450-1812RZB	SC8= SCF800-12-1812RZB
SC4= SCF450-12-1812RZB	SC8= SCF850-1812RZB
SC5= SCF500-1812RZB	SC8= SCF850-12-1812RZB
SC5= SCF500-12-1812RZB	SC9= SCF900-1812RZB
SC5= SCF550-1812RZB	SC9= SCF900-12-1812RZB

## Surface Mount Resettable PTCs

### SCF1812RZB Series

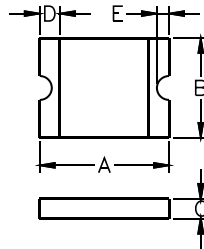
#### Recommended Solder Pad Layout Dimensions (Unit: mm)

The dimension in the table below provide the recommended pad layout for each SCF1812RZB device



Device	A	B	C
1812RZB Series	3.45±0.1	1.78±0.1	3.15±0.1

#### Product Dimensions (Unit: mm)



Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF190-1812RZB	4.37	4.73	3.07	3.41	0.30	0.70	0.30	0.15
SCF190-12-1812RZB	4.37	4.73	3.07	3.41	0.30	0.70	0.30	0.15
SCF260-1812RZB	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
SCF260-12-1812RZB	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
SCF300-1812RZB	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
SCF300-12-1812RZB	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
SCF350-1812RZB	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SCF350-12-1812RZB	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SCF400-1812RZB	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SCF400-12-1812RZB	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
SCF450-1812RZB	4.37	4.73	3.07	3.41	0.40	1.40	0.30	0.15
SCF450-12-1812RZB	4.37	4.73	3.07	3.41	0.40	1.40	0.30	0.15
SCF500-1812RZB	4.37	4.73	3.07	3.41	0.50	1.40	0.30	0.15
SCF500-12-1812RZB	4.37	4.73	3.07	3.41	0.50	1.40	0.30	0.15
SCF550-1812RZB	4.37	4.73	3.07	3.41	0.50	1.40	0.30	0.15
SCF550-12-1812RZB	4.37	4.73	3.07	3.41	0.50	1.40	0.30	0.15

## Surface Mount Resettable PTCs

### SCF1812RZB Series

#### Product Dimensions (Unit: mm) (Continue)

Part Number	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SCF600-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF600-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF650-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF650-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF700-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF700-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF750-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF750-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF800-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF800-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF850-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF850-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF900-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15
SCF900-12-1812RZB	4.37	4.73	3.07	3.41	0.60	1.60	0.30	0.15

#### Packaging Quantity

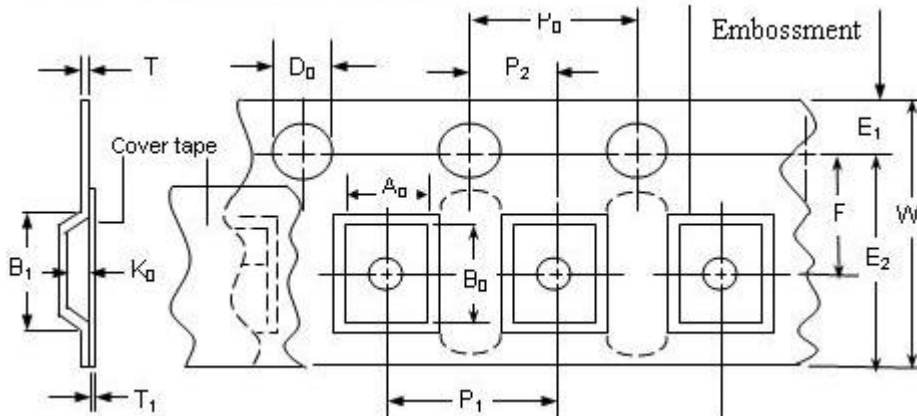
Part Number	Quantity	Part Number	Quantity
SCF190-1812RZB	2000 PCS	SCF550-12-1812RZB	2000 PCS
SCF190-12-1812RZB	2000 PCS	SCF600-1812RZB	1500 PCS
SCF260-1812RZB	2000 PCS	SCF600-12-1812RZB	1500 PCS
SCF260-12-1812RZB	2000 PCS	SCF650-1812RZB	1500 PCS
SCF300-1812RZB	2000 PCS	SCF650-12-1812RZB	1500 PCS
SCF300-12-1812RZB	2000 PCS	SCF700-1812RZB	1500 PCS
SCF350-1812RZB	2000 PCS	SCF700-12-1812RZB	1500 PCS
SCF350-12-1812RZB	2000 PCS	SCF750-1812RZB	1500 PCS
SCF400-1812RZB	2000 PCS	SCF750-12-1812RZB	1500 PCS
SCF400-12-1812RZB	2000 PCS	SCF800-1812RZB	1500 PCS
SCF450-1812RZB	2000 PCS	SCF800-12-1812RZB	1500 PCS
SCF450-12-1812RZB	2000 PCS	SCF850-1812RZB	1500 PCS
SCF500-1812RZB	2000 PCS	SCF850-12-1812RZB	1500 PCS
SCF500-12-1812RZB	2000 PCS	SCF900-1812RZB	1500 PCS
SCF550-1812RZB	2000 PCS	SCF900-12-1812RZB	1500 PCS

## Surface Mount Resettable PTCs

### SCF1812RZB Series

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

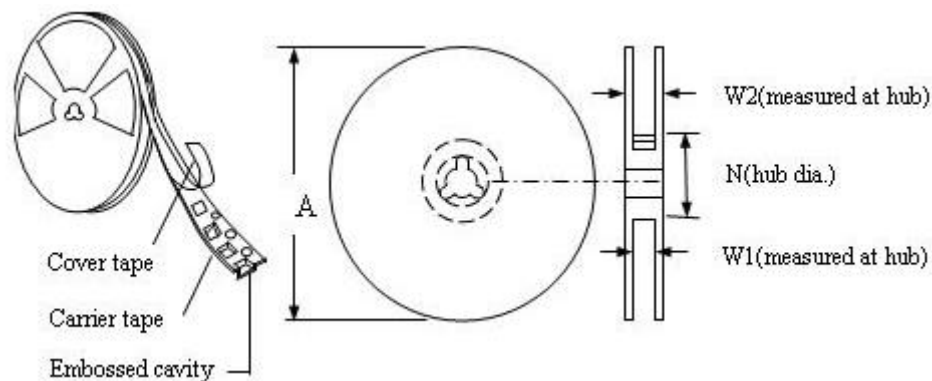
##### Tape Component Dimensions



Symbol	Dimensions
<b>W</b>	12.0±0.3/-0
<b>P<sub>0</sub></b>	4.0±0.10
<b>P<sub>1</sub></b>	8.0±0.10
<b>P<sub>2</sub></b>	2.0±0.10
<b>A<sub>0</sub></b>	3.5±0.10
<b>B<sub>0</sub></b>	4.9±0.10
<b>D<sub>0</sub></b>	1.5±0.10/-0
<b>F</b>	5.5±0.05
<b>E<sub>1</sub></b>	1.75±0.10
<b>T</b>	0.3±0.10
<b>Leader min.</b>	390
<b>Trailer min.</b>	160

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

##### Reel Dimensions



Symbol	Dimensions
<b>A</b>	178±1.0
<b>N</b>	59±1.0
<b>W<sub>1</sub></b>	8.5±1.0/-0.2
<b>W<sub>2</sub></b>	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.