

Surface Mountable PTC Resettable Fuse: SMD2920 Series

1. Summary

- (a) RoHS Compliant & Halogen Free
- (b) Applications: All high-density boards
- (c) Product Features: 2920 Dimension, surface mountable, Solid state, Faster time to trip than standard SMD devices.
- (d) Operation Current: 0.30~5.00A
- (e) Maximum Voltage: 6V~60V_{DC}
- (f) Temperature Range : -40°C to 85°C

2. Agency Recognition

UL: File No. E211981

TÜV: File No. R50004084

3. Electrical Characteristics (23°C)

Part Number	Hold	Trip	Rated	Max	Typical	Max Time to Trip		Resistance	
	Current	Current	Voltage	Current	Power	Current	Time	R _{MIN}	R _{1MAX}
	I _H , A	I _T , A	V _{MAX} , VDC	I _{MAX} , A	P _d , W	A	Sec	Ohms	Ohms
SMD030-2920	0.30	0.60	60	100	1.5	1.5	3.0	1.000	4.800
SMD050-2920	0.50	1.00	60	100	1.5	2.5	4.0	0.300	1.400
SMD075-2920	0.75	1.50	33	100	1.5	8.0	0.3	0.180	1.000
SMD075-60-2920	0.75	1.50	60	100	1.5	8.0	0.3	0.180	1.000
SMD100-2920	1.10	2.20	33	100	1.5	8.0	0.5	0.090	0.410
SMD100-60-2920	1.00	2.00	60	100	1.5	8.0	0.5	0.090	0.410
SMD125-2920	1.25	2.50	33	100	1.5	8.0	2.0	0.050	0.250
SMD150-2920	1.50	3.00	33	100	1.5	8.0	2.0	0.050	0.230
SMD185-2920	1.85	3.70	33	100	1.5	8.0	2.5	0.040	0.150
SMD200-2920	2.00	4.00	16	100	1.5	8.0	4.5	0.035	0.120
SMD200-24-2920	2.00	4.00	24	100	1.5	8.0	5.0	0.035	0.120
SMD250-2920	2.50	5.00	16	100	1.5	8.0	16.0	0.025	0.085
SMD260-2920	2.60	5.20	6	100	1.5	8.0	20.0	0.020	0.075
SMD260-24-2920	2.60	5.20	24	100	1.5	8.0	20.0	0.020	0.075
SMD300-2920	3.00	5.20	6	100	1.5	8.0	25.0	0.010	0.048
SMD300-15-2920	3.00	5.20	15	100	1.5	8.0	20.0	0.010	0.048
SMD300-24-2920	3.00	5.20	24	100	1.5	8.0	20.0	0.010	0.048
SMD400-16-2920	4.00	8.00	16	100	1.5	20.0	4.0	0.010	0.040
SMD500-16-2920	5.00	10.00	16	100	1.5	20.0	5.0	0.005	0.025

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.

I_T=Trip current-minimum current at which the device will always trip at 23°C still air.

V_{MAX}=Maximum voltage device can withstand without damage at it rated current.(I_{MAX})

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

P_d=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

R_{MIN}=Minimum device resistance at 23°C prior to tripping.

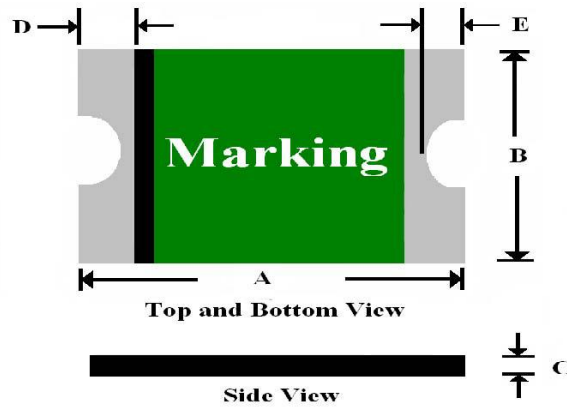
R_{1MAX}=Maximum device resistance at 2°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials: Pure Tin

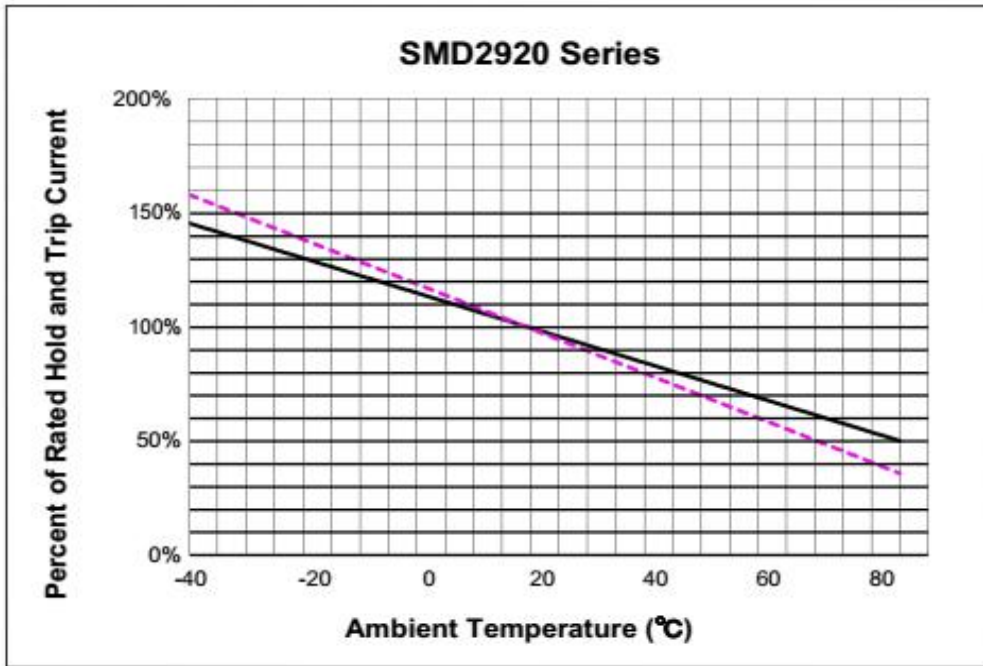
NOTE : Specification subject to change without notice.

4. SMD Product Dimensions (Millimeters)



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
SMD030-2920	6.73	7.98	4.80	5.44	0.60	1.15	0.50	1.20	0.50	0.90
SMD050-2920	6.73	7.98	4.80	5.44	0.60	1.15	0.50	1.20	0.50	0.90
SMD075-2920	6.73	7.98	4.80	5.44	0.40	1.15	0.50	1.20	0.50	0.90
SMD075-60-2920	6.73	7.98	4.80	5.44	0.60	1.15	0.50	1.20	0.50	0.90
SMD100-2920	6.73	7.98	4.80	5.44	0.40	1.00	0.50	1.20	0.50	0.90
SMD100-60-2920	6.73	7.98	4.80	5.44	0.40	1.70	0.50	1.20	0.50	0.90
SMD125-2920	6.73	7.98	4.80	5.44	0.40	0.90	0.50	1.20	0.50	0.90
SMD150-2920	6.73	7.98	4.80	5.44	0.40	0.90	0.50	1.20	0.50	0.90
SMD185-2920	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
SMD200-2920	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
SMD200-24-2920	6.73	7.98	4.80	5.44	0.20	0.80	0.50	1.20	0.50	0.90
SMD250-2920	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
SMD260-2920	6.73	7.98	4.80	5.44	0.30	0.90	0.50	1.20	0.50	0.90
SMD260-24-2920	6.73	7.98	4.80	5.44	0.65	1.15	0.50	1.20	0.50	0.90
SMD300-2920	6.73	7.98	4.80	5.44	0.40	0.90	0.50	1.20	0.50	0.90
SMD300-15-2920	6.73	7.98	4.80	5.44	0.40	1.15	0.50	1.20	0.50	0.90
SMD300-24-2920	6.73	7.98	4.80	5.44	0.65	1.15	0.50	1.20	0.50	0.90
SMD400-16-2920	6.73	7.98	4.80	5.44	0.40	1.50	0.50	1.20	0.50	0.90
SMD500-16-2920	6.73	7.98	4.80	5.44	0.40	1.50	0.50	1.20	0.50	0.90

5. Thermal Derating Curve

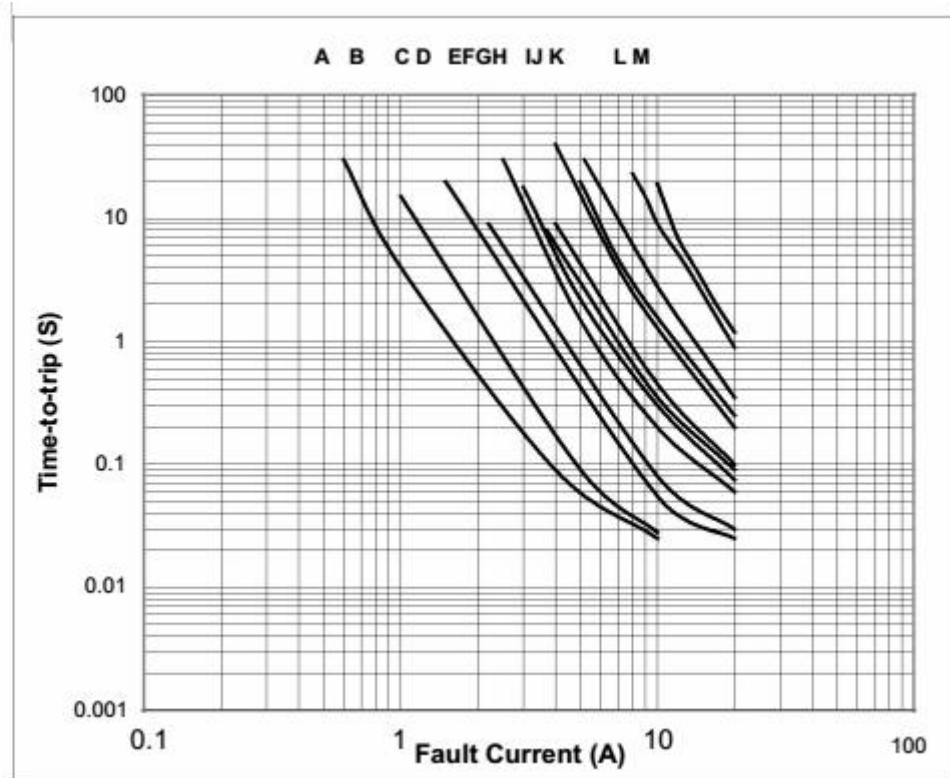


A A= SMD125-2920 ~
SMD500-16-2920

B B= SMD030-2920 ~
SMD100-2920

6. Typical Time-To-Trip at 23°C

A = SMD030-2920
 B = SMD050-2920
 C = SMD075-2920/
 075-60-2920
 D = SMD100-2920/
 100-60-2920
 E = SMD125-2920
 F = SMD150-2920
 G = SMD185-2920
 H = SMD200-2920/
 200-24-2920
 I = SMD250-2920
 J = SMD260-2920/
 260-24-2920
 K = SMD300-2920 /
 300-15-2920 /
 300-24-2920
 L = SMD400-16-2920
 M = SMD500-16-2920



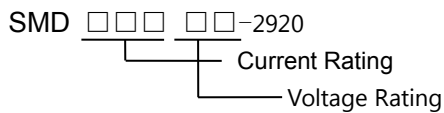
7. Material Specification

Terminal pad material: Pure Tin

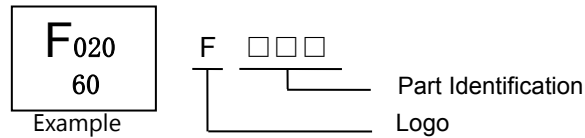
Soldering characteristics: Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

8. Part Numbering and Marking System

Part Numbering System



Part Marking System



Warning: -Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.

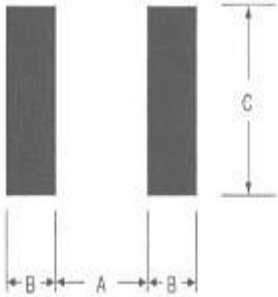


-PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.

-Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

9. Pad Layouts、 Solder Reflow and Rework Recommendations

The dimension in the table below provide the recommended pad layout for each SMD2920 device



Pad dimensions (millimeters)			
Device	A Nominal	B Nominal	C Nominal
All SMD2920 series	5.10	2.30	5.60

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T _{smax} to T _p)	3°C/second max.
Preheat :	
Temperature Min (T _{smin})	150°C
Temperature Max (T _{smax})	200°C
Time (t _{smin} to t _{smax})	60-180 seconds
Time maintained above:	
Temperature(T _L)	217°C
Time (t _L)	60-150 seconds
Peak/Classification Temperature(T_p) :	260°C
Time within 5°C of actual Peak :	
Temperature (t _p)	20-40 seconds
Ramp-Down Rate :	6°C/second max.
Time 25°C to Peak Temperature :	8 minutes max.

Solder reflow

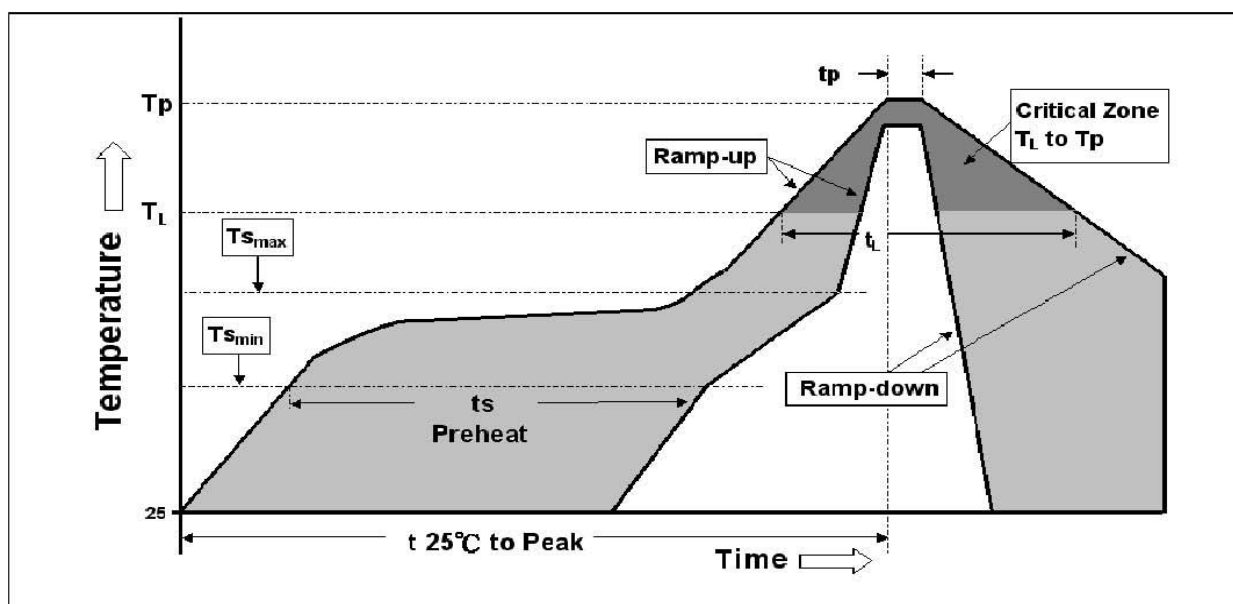
- ※ Due to "Lead Free" nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.
1. Recommended max past thickness > 0.25mm.
 2. Devices can be cleaned using standard methods and aqueous solvent.
 3. Rework use standard industry practices.
 4. Storage Environment : < 30°C / 60%RH

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.

Note 1: All temperatures refer to of the package, measured on the package body surface.

Reflow Profile



NOTE : Specification subject to change without notice.