

## »Performance Specification

Model	I-hold	I-trip	Vmax	Imax	Pd typ	Max. Time to trip		R0 min	R1max
						Current	Time		
	(A)	(A)	(Vdc)	(A)	(W)	(A)	(Sec.)	(Ohm)	(Ohm)
SMD2920-030/60N	0.30	0.60	60.00	10.00	1.50	1.50	3.00	0.60	4.30
SMD2920-050/60N	0.50	1.00	60.00	10.00	1.50	2.50	4.00	0.20	1.40
SMD2920-075/33N	0.75	1.50	33.00	40.00	1.50	8.00	0.30	0.10	1.00
SMD2920-075/60N	0.75	1.50	60.00	10.00	1.50	8.00	0.30	0.10	1.00
SMD2920-100/33N	1.00	2.00	33.00	40.00	1.50	8.00	0.50	0.065	0.410
SMD2920-100/60N	1.00	2.00	60.00	10.00	1.50	8.00	0.50	0.065	0.410
SMD2920-110/60N	1.10	2.20	60.00	10.00	1.50	8.00	1.00	0.060	0.390
SMD2920-125/33N	1.25	2.50	33.00	40.00	1.50	8.00	2.00	0.050	0.250
SMD2920-150/33N	1.50	3.00	33.00	40.00	1.50	8.00	2.00	0.035	0.230
SMD2920-185/33N	1.85	3.70	33.00	40.00	1.50	8.00	2.50	0.030	0.150
SMD2920-200/24N	2.00	4.00	24.00	40.00	1.50	8.00	5.00	0.020	0.125
SMD2920-200/33N	2.00	4.00	33.00	40.00	1.50	8.00	5.00	0.020	0.125
SMD2920-250/16N	2.50	5.00	16.00	40.00	1.50	8.00	20.00	0.015	0.080
SMD2920-260/24N	2.60	5.20	24.00	40.00	1.50	8.00	20.00	0.014	0.075
SMD2920-260/30N	2.60	5.20	30.00	40.00	1.50	8.00	20.00	0.014	0.075
SMD2920-300/24N	3.00	6.00	24.00	40.00	1.50	8.00	25.00	0.010	0.055
SMD2920-300/16N	3.00	6.00	16.00	40.00	1.50	8.00	25.00	0.010	0.055
SMD2920-300/30N	3.00	6.00	30.00	40.00	1.50	8.00	25.00	0.010	0.055
SMD2920-330/24N	3.30	6.60	24.00	40.00	1.50	8.00	5.00	0.010	0.050
SMD2920-350/16N	3.50	7.00	16.00	40.00	1.50	17.50	5.00	0.009	0.045
SMD2920-350/24N	3.50	7.00	24.00	40.00	1.50	17.50	5.00	0.009	0.045
SMD2920-350/30N	3.50	7.00	30.00	40.00	1.50	17.50	5.00	0.009	0.045
SMD2920-400/16N	4.00	8.00	16.00	40.00	1.50	20.00	4.00	0.008	0.040
SMD2920-400/24N	4.00	8.00	24.00	40.00	1.50	20.00	4.00	0.008	0.040
SMD2920-400/30N	4.00	8.00	30.00	40.00	1.50	20.00	4.00	0.008	0.040
SMD2920-450/12N	4.50	9.00	12.00	40.00	1.50	25.00	5.00	0.006	0.030
SMD2920-450/16N	4.50	9.00	16.00	40.00	1.50	25.00	5.00	0.006	0.030
SMD2920-450/24N	4.50	9.00	24.00	40.00	1.50	25.00	5.00	0.006	0.030
SMD2920-500/12N	5.00	10.00	12.00	40.00	1.50	25.00	5.00	0.005	0.025
SMD2920-500/16N	5.00	10.00	16.00	40.00	1.50	25.00	5.00	0.005	0.025
SMD2920-500/24N	5.00	10.00	24.00	40.00	1.50	25.00	5.00	0.005	0.025
SMD2920-600/12N	6.00	12.00	12.00	40.00	2.00	30.00	2.00	0.003	0.020
SMD2920-600/16N	6.00	12.00	16.00	40.00	2.00	30.00	2.00	0.003	0.020
SMD2920-700/12N	7.00	14.00	12.00	40.00	2.00	35.00	2.00	0.0025	0.018
SMD2920-700/16N	7.00	14.00	16.00	40.00	2.00	35.00	2.00	0.0025	0.018

I-hold: Holding Current: maximum current at which the device will not trip in 25°C still air.

I-trip: Tripping Current: minimum current at which the device will trip in 25°C still air.

Vmax: Maximum voltage device can withstand without damage at rated current(I<sub>max</sub>).

I<sub>max</sub>: Maximum fault current device can withstand without damage at rated voltage(V<sub>max</sub>).

Pd typ: Typical power dissipated from device when in the tripped state at 25°C still air.

R0 min: Minimum resistance of device in initial (un-soldered) state.

R1 max: Maximum resistance of device at 25°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

## »Environmental Specifications

Operating Temperature	-40 °C to +85 °C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	+85 °C, 1000 hours ; ±5 % typical resistance change
Humidity Aging	+85 °C, 85 % R.H. 1000 hours; ±5 % typical resistance change
Thermal Shock	MIL-STD-202, Method 107; +85 °C to -40 °C, 20 times;-30 % typical resistance change
Solvent Resistance	MIL-STD-202, Method 215 ; No change
Vibration	MIL-STD-883, Method 2007, Condition A; No change
Moisture Sensivity Level	Level 1, J-STD-020
Storage Conditions	+40 °C Max. 70% RH Max. Packed in original packaging.

## »Test Procedures And Requirements

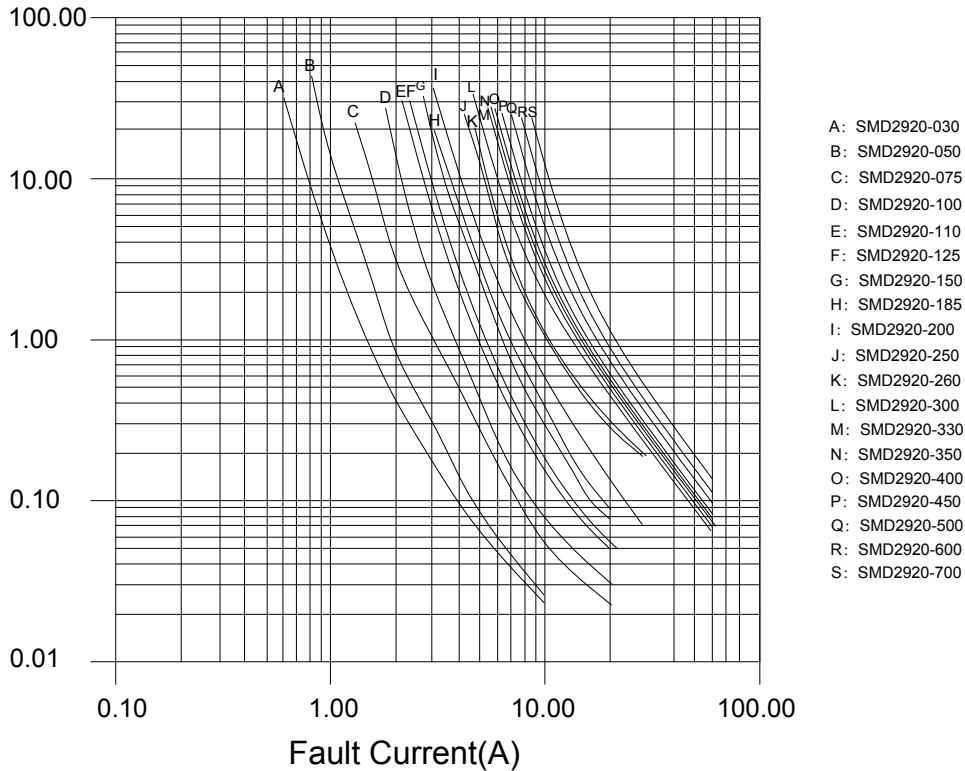
No.	Test	Test Conditions	Accept/Reject Criteria
1	R0 min	Resistance measurement at 25°C	$R0min \leq R \leq R1max$
2	R1 max	Resistance measurement one hour after post trip	$R0min \leq R \leq R1max$
3	I-hold	Hold rated current 1800 second without trip, @ 25°C	No trip
4	I-trip	Device must trip within 900 second under rated current, @25°C	Trip
5	Max. time to trip	At specified current, 25°C	$T \leq \text{max. time to trip (seconds)}$
6	Trip Cycle Life	V <sub>max</sub> , I <sub>max</sub> , 100 cycles	No arcing or burning
7	Trip Endurance	V <sub>max</sub> , I <sub>max</sub> 24 hours	No arcing or burning
8	Solderability	ANSI/J-STD-002	95 % min. coverage

**»Thermal Derating Chart** Recommended Hold Current(A) at Ambient Temperature(°C)

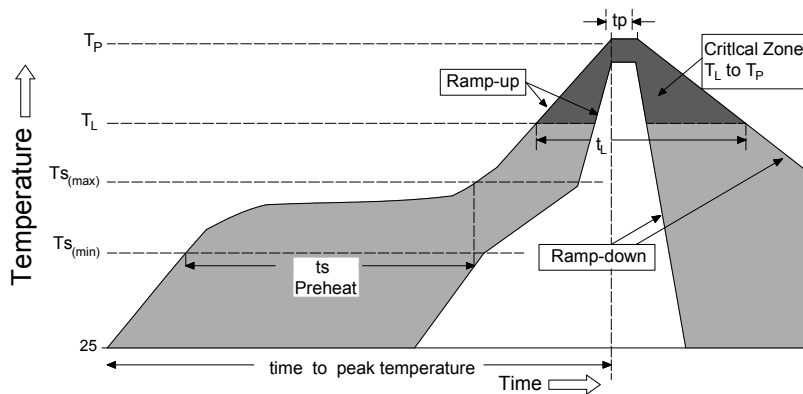
Model	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD2920-030/60N	0.45	0.40	0.35	0.30	0.25	0.23	0.20	0.17	0.14
SMD2920-050/60N	0.76	0.67	0.59	0.50	0.42	0.38	0.33	0.29	0.23
SMD2920-075/33N	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
SMD2920-075/60N	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
SMD2920-100/33N	1.66	1.47	1.29	1.00	0.91	0.83	0.73	0.64	0.50
SMD2920-100/60N	1.66	1.47	1.29	1.00	0.91	0.83	0.73	0.64	0.50
SMD2920-110/60N	1.70	1.50	1.34	1.10	1.00	0.90	0.80	0.70	0.55
SMD2920-125/33N	1.89	1.68	1.46	1.25	1.04	0.94	0.83	0.73	0.56
SMD2920-150/33N	2.27	2.01	1.76	1.50	1.25	1.13	1.00	0.87	0.74
SMD2920-185/33N	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
SMD2920-200/24N	3.14	2.77	2.42	2.00	1.73	1.56	1.38	1.20	0.98
SMD2920-200/33N	3.14	2.77	2.42	2.00	1.73	1.56	1.38	1.20	0.98
SMD2920-250/16N	3.54	3.15	2.81	2.50	2.16	1.98	1.86	1.64	1.38
SMD2920-260/24N	3.64	3.25	2.91	2.60	2.26	2.08	1.96	1.74	1.48
SMD2920-260/30N	3.64	3.25	2.91	2.60	2.26	2.08	1.96	1.74	1.48
SMD2920-300/24N	4.20	3.85	3.44	3.00	2.69	2.50	2.31	2.12	1.83
SMD2920-300/16N	4.20	3.85	3.44	3.00	2.69	2.50	2.31	2.12	1.83
SMD2920-300/30N	4.20	3.85	3.44	3.00	2.69	2.50	2.31	2.12	1.83
SMD2920-330/24N	4.60	4.20	3.75	3.30	2.95	2.75	2.50	2.25	1.70
SMD2920-350/16N	5.30	4.70	4.10	3.50	2.95	2.65	2.30	2.05	1.55
SMD2920-350/24N	5.30	4.70	4.10	3.50	2.95	2.65	2.30	2.05	1.55
SMD2920-350/30N	5.30	4.70	4.10	3.50	2.95	2.65	2.30	2.05	1.55
SMD2920-400/16N	6.05	5.35	4.70	4.00	3.35	3.00	2.65	2.35	1.80
SMD2920-400/24N	6.05	5.35	4.70	4.00	3.35	3.00	2.65	2.35	1.80
SMD2920-400/30N	6.05	5.35	4.70	4.00	3.35	3.00	2.65	2.35	1.80
SMD2920-450/12N	6.80	6.00	5.25	4.50	3.80	3.40	3.00	2.60	2.00
SMD2920-450/16N	6.80	6.00	5.25	4.50	3.80	3.40	3.00	2.60	2.00
SMD2920-450/24N	6.80	6.00	5.25	4.50	3.80	3.40	3.00	2.60	2.00
SMD2920-500/12N	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920-500/16N	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920-500/24N	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920-600/12N	8.50	7.80	7.00	6.00	5.25	4.85	4.45	4.00	3.40
SMD2920-600/16N	8.50	7.80	7.00	6.00	5.25	4.85	4.45	4.00	3.40
SMD2920-700/12N	9.50	8.70	7.90	7.00	6.40	5.85	5.40	4.80	3.95
SMD2920-700/16N	9.50	8.70	7.90	7.00	6.40	5.85	5.40	4.80	3.95

»Typical time to trip at 25°C

2920 Series TTT Vs Fault current chart



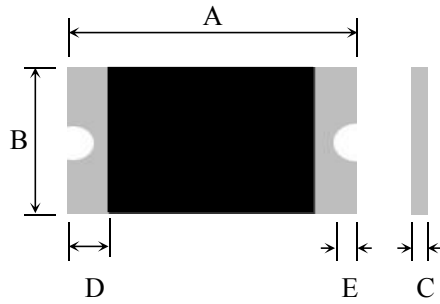
»Soldering Parameters



Profile Feature		Pb-Free Assembly
Average Ramp-Up Rate (Ts(max) to Tp)		3°C/second max
Pre Heat:	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (Min to Max) (ts)	60 – 180 secs
Time Maintained Above:	Temperature (Tl)	217°C
	Temperature (tl)	60 – 150 seconds
Peak / Classification Temperature (Tp)		260 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (Tp)		8 minutes Max.

- ◆All temperature refer to topside of the package, measured on the package body surface
- ◆If reflow temperature exceeds the recommended profile, devices may not meet the performance requirements
- ◆Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead
- ◆Recommended maximum paste thickness is 0.25mm (0.010inch)
- ◆Devices can be cleaned using standard industry methods and solvents

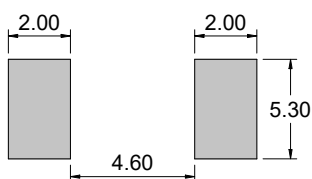
»Physical Dimensions(mm)



Model	A		B		C		D		E
	Min	Max	Min	Max	Min	Max	Min	Max	Min
SMD2920-030/60N	6.73	7.98	4.80	5.44	0.65	1.05	0.30	2.50	0.25
SMD2920-050/60N	6.73	7.98	4.80	5.44	0.65	1.05	0.30	2.50	0.25
SMD2920-075/33N	6.73	7.98	4.80	5.44	0.45	0.85	0.30	2.50	0.25
SMD2920-075/60N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-100/33N	6.73	7.98	4.80	5.44	0.45	0.85	0.30	2.50	0.25
SMD2920-100/60N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-110/60N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-125/33N	6.73	7.98	4.80	5.44	0.45	0.85	0.30	2.50	0.25
SMD2920-150/33N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-185/33N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-200/24N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-200/33N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-250/16N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-260/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-260/30N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-300/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-300/16N	6.73	7.98	4.80	5.44	0.80	1.30	0.30	2.50	0.25
SMD2920-300/30N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-330/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-350/16N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-350/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-350/30N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-400/16N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-400/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-400/30N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-450/12N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-450/16N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-450/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25

SMD2920-500/12N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-500/16N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-500/24N	6.73	7.98	4.80	5.44	1.00	1.50	0.30	2.50	0.25
SMD2920-600/12N	6.73	7.98	4.80	5.44	1.20	1.60	0.30	2.50	0.25
SMD2920-600/16N	6.73	7.98	4.80	5.44	1.20	1.60	0.30	2.50	0.25
SMD2920-700/12N	6.73	7.98	4.80	5.44	1.20	1.60	0.30	2.50	0.25
SMD2920-700/16N	6.73	7.98	4.80	5.44	1.20	1.60	0.30	2.50	0.25

## »Recommended Pad Layout (mm)&Physical Specifications



Terminal Material	Tin-Plated Nickle-Copper (Solder Material: Matte Tin (Sn))
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.

»Tape And Reel Specifications (mm)&Packaging quantity

TAPE SPECIFICATIONS: EIA-481-1 (mm)					
Item	SMD2920-030/60N	SMD2920-050/60N	SMD2920-600/12N SMD2920-600/16N SMD2920-700/12N SMD2920-700/16N		
	SMD2920-075/60N	SMD2920-100/60N			
	SMD2920-110/60N	SMD2920-150/33N			
	SMD2920-185/33N	SMD2920-200/24N			
	SMD2920-200/33N	SMD2920-250/16N			
	SMD2920-260/24N	SMD2920-260/30N			
	SMD2920-075/33N	SMD2920-300/16N			
	SMD2920-100/33N	SMD2920-300/24N			
	SMD2920-125/33N	SMD2920-330/24N			
	SMD2920-350/16N	SMD2920-350/24N			
	SMD2920-350/30N	SMD2920-400/16N			
	SMD2920-400/24N	SMD2920-400/30N			
	SMD2920-450/12N	SMD2920-450/16N			
	SMD2920-450/24N	SMD2920-500/12N			
	SMD2920-500/16N	SMD2920-500/24N			
	W	16.00±0.30		16.00±0.30	16.00±0.30
	F	7.50±0.10		7.50±0.10	7.50±0.10
E1	1.75±0.10	1.75±0.10	1.75±0.10		
D0	1.55±0.05	1.55±0.05	1.55±0.05		
D1	1.50±0.10	1.50±0.10	1.50±0.10		
P0	4.0±0.10	4.0±0.10	4.0±0.10		
P1	8.0±0.10	8.0±0.10	8.0±0.10		
P2	2.0±0.10	2.0±0.10	2.0±0.10		
A0	5.74±0.10	5.74±0.10	5.74±0.10		
B0	8.02±0.10	8.02±0.10	8.02±0.10		
T	0.30±0.10	0.30±0.10	0.30±0.10		
K0	0.90±0.10	1.30±0.10	1.70±0.10		
Leader	390mm	390mm	390mm		
Trailer	160mm	160mm	160mm		
Q'ty	2,000pcs/Reel	1,500pcs/Reel	1,000pcs/Reel		

REEL DIMENSIONS: EIA-481-1 (mm)	
C	Ø178±3.0
D	Ø60.2±0.5
W	17.0±0.2
H	19.5±1.0

