

APPROVAL SHEET

MODEL NO.: _____

CUSTOMER:

CUSTOMER'S APPROVAL:

AUTHORIZED SIGNATURE/STAMP

DATE

MANUFACTURER:

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Submitted by:

Approved by:

Date:

Performance Specification

Model	V _{max} (V dc)	I _{max} (A)	I _{hold} @25°C (A)	I _{trip} @25°C (A)	P _d Typ. (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	R _{i min} (Ω)	R _{1max} (Ω)
SMD2920R030SF	60	10	0.30	0.60	1.5	1.5	3.0	0.600	4.800
SMD2920R050SF	60	10	0.50	1.00	1.5	2.5	4.0	0.180	1.400
SMD2920R075SF	33	40	0.75	1.50	1.5	8.0	0.3	0.100	1.000
SMD2920R075SF60V	60	40	0.75	1.50	1.5	8.0	0.3	0.100	1.000
SMD2920R100SF	33	40	1.10	2.20	1.5	8.0	0.5	0.065	0.410
SMD2920R100SF60V	60	40	1.10	2.20	1.5	8.0	0.5	0.065	0.410
SMD2920R125SF	33	40	1.25	2.50	1.5	8.0	2.0	0.050	0.250
SMD2920R150SF	33	40	1.50	3.00	1.5	8.0	2.0	0.035	0.230
SMD2920R185SF	33	40	1.85	3.70	1.5	8.0	2.5	0.030	0.150
SMD2920R200SF	16	40	2.00	4.00	1.5	8.0	4.5	0.020	0.120
SMD2920R200SF24V	24	40	2.00	4.00	1.5	8.0	4.5	0.020	0.120
SMD2920R200SF33V	33	40	2.00	4.00	1.5	8.0	4.5	0.020	0.120
SMD2920R250SF	16	40	2.50	5.00	1.5	8.0	16.0	0.020	0.085
SMD2920R250SF24V	24	40	2.50	5.00	1.5	8.0	16.0	0.020	0.085
SMD2920R250SF33V	33	40	2.50	5.00	1.5	8.0	16.0	0.020	0.085
SMD2920R260SF	6	40	2.60	5.20	1.5	8.0	10.0	0.014	0.075
SMD2920R260SF16V	16	40	2.60	5.20	1.5	8.0	10.0	0.014	0.075
SMD2920R260SF24V	24	40	2.60	5.20	1.5	8.0	10.0	0.014	0.075
SMD2920R300SF	6	40	3.00	6.00	1.5	8.0	20.0	0.012	0.048
SMD2920R300SF16v	16	40	3.00	6.00	1.5	8.0	20.0	0.012	0.048
SMD2920R300SF24v	24	40	3.00	6.00	1.5	8.0	20.0	0.012	0.048
SMD2920R300SF30v	30	40	3.00	6.00	1.5	8.0	20.0	0.012	0.048
SMD2920R400SF	6	40	4.00	8.00	1.5	20.0	4.0	0.008	0.040
SMD2920R400SF16V	16	40	4.00	8.00	1.5	20.0	4.0	0.008	0.040
SMD2920R400SF24V	24	40	4.00	8.00	1.5	20.0	4.0	0.008	0.040
SMD2920R500SF	6	40	5.00	10.00	1.5	25.0	5.0	0.005	0.031
SMD2920R500SF12V	12	40	5.00	10.00	1.5	25.0	5.0	0.005	0.031
SMD2920R500SF16V	16	40	5.00	10.00	1.5	25.0	5.0	0.005	0.031
SMD2920R500SF24V	24	40	5.00	10.00	1.5	25.0	5.0	0.005	0.031
SMD2920R600SF	6	40	6.00	12.00	1.5	25.0	6.0	0.004	0.020
SMD2920R600SF12v	12	40	6.00	12.00	1.5	25.0	6.0	0.004	0.020
SMD2920R700SF	6	40	7.00	14.00	1.5	25.0	6.0	0.0025	0.010
SMD2920R700SF12v	12	40	7.00	14.00	1.5	25.0	6.0	0.0025	0.010

V_{max} = Maximum operating 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}).

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

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Ri min/max = Minimum/Maximum device resistance prior to tripping at 25°C.



R1max = Maximum device resistance is measured one hour post reflow.

CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to solvent	MIL-STD-202,Method 215	No change
Vibration	MIL-STD-202,Method 201	No change
Ambient operating conditions : - 40 °C to +85 °C		
Maximum surface temperature of the device in the tripped state is 125 °C		

Agency Approval and Environmental Compliance

Agency	File Number	Regulation	Standard
UL	pending		2002/95/EC
TUV	pending		EN14582

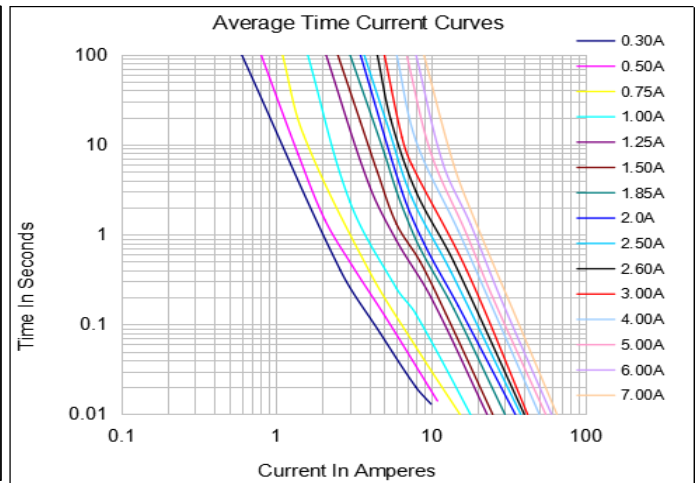
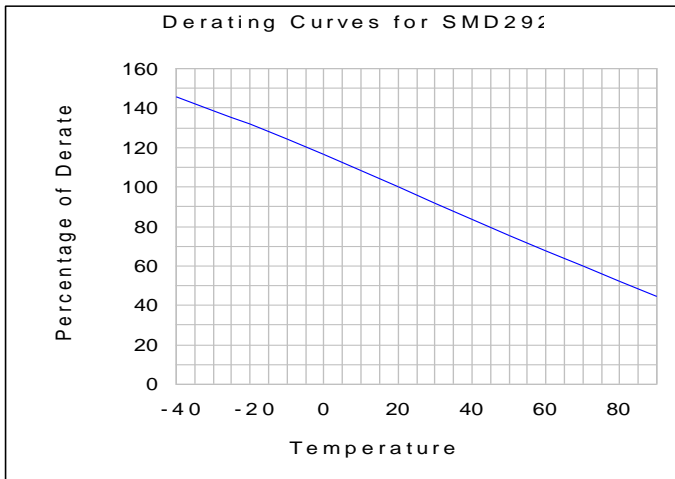
Thermal Derating Chart

Recommended Hold Current(A) at Ambient Temperature(°C)

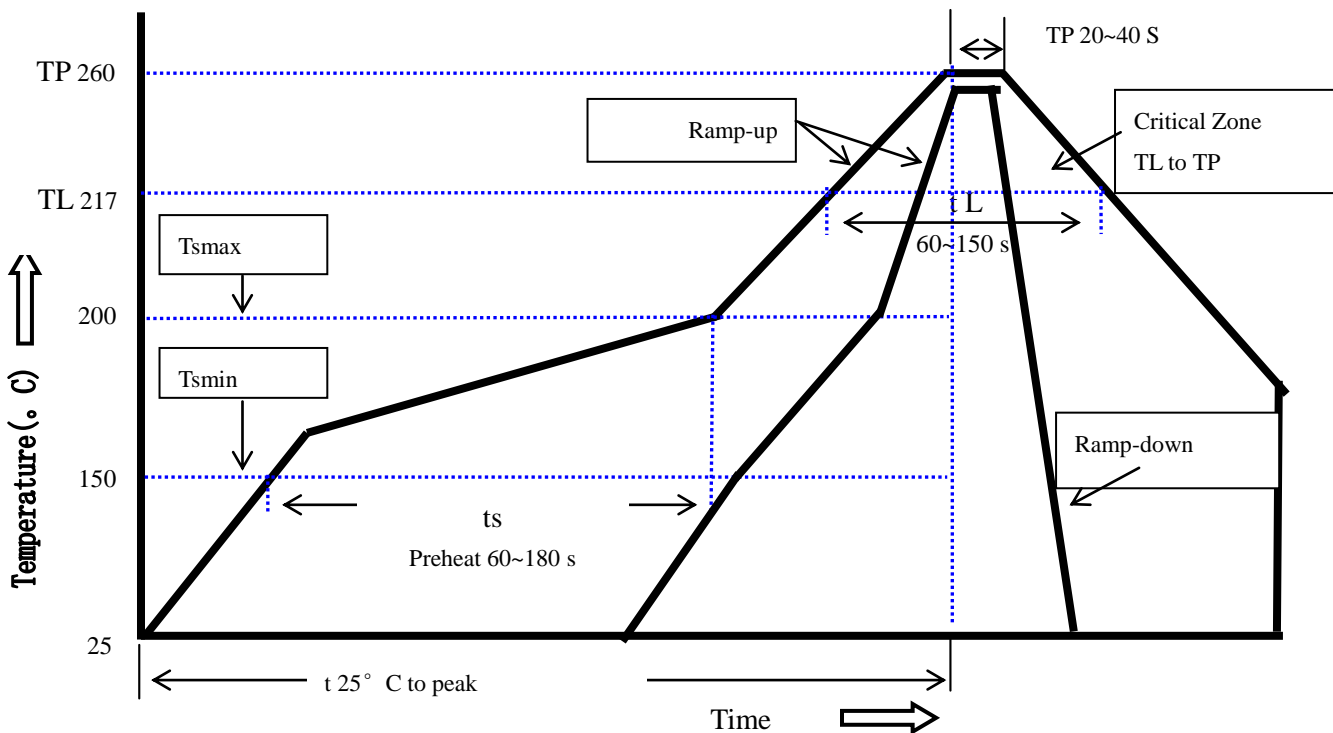
Model	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD2920R030SF	0.45	0.40	0.35	0.30	0.25	0.23	0.20	0.17	0.14
SMD2920R050SF	0.76	0.67	0.59	0.50	0.42	0.38	0.33	0.29	0.23
SMD2920R075SF	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
SMD2920R100SF	1.66	1.47	1.29	1.10	0.91	0.83	0.73	0.64	0.50
SMD2920R125SF	1.89	1.68	1.46	1.25	1.04	0.94	0.83	0.73	0.56
SMD2920R150SF	2.27	2.01	1.76	1.50	1.25	1.13	1.00	0.87	0.74
SMD2920R185SF	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
SMD2920R200SF	3.02	2.68	2.34	2.00	1.66	1.50	1.32	1.16	0.90
SMD2920R250SF	3.78	3.35	2.93	2.50	2.08	1.88	1.65	1.45	1.13
SMD2920R260SF	3.64	3.25	2.91	2.60	2.26	2.08	1.95	1.74	1.13
SMD2920R300SF	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34
SMD2920R400SF	6.04	5.36	4.68	4.00	3.36	3.01	2.65	2.33	1.79
SMD2920R500SF	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920R600SF	8.60	7.70	6.80	6.00	4.95	4.60	4.06	3.65	3.15
SMD2920R700SF	10.03	8.98	7.93	7.00	5.77	5.36	4.73	4.26	3.68

Thermal Derating Curve

Average Time-Current Curve



Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate(Ts max to T p)	3°C/second max.
Preheat	
-Temperature Min(Ts min)	150°C
-Temperature Max(Ts max)	200°C
-Time(Ts min to Ts max)	60~180 seconds
Time maintained above:	
-Temperature(TL)	217°C
-Time(tL)	60~150 seconds
Peak Temperature(Tp)	260°C
Ramp-Down Rate	6°C/second max.

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Time 25°C to Peak Temperature	8 minutes max
Storage Condition	0°C~30°C,30%~60%RH

Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

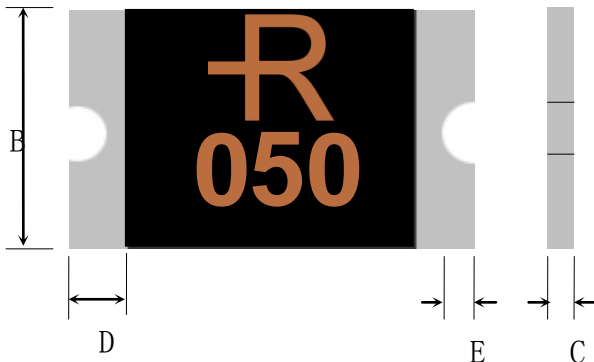
Recommended maximum paste thickness is 0.25mm

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 temperatures exceed the recommended profile, devices may not meet the performance requirements.

Physical Dimensions(mm.)



Model	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
SMD2920R030SF	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.25
SMD2920R050SF	6.73	7.98	4.80	5.44	0.80	1.60	0.30	0.25
SMD2920R075SF	6.73	7.98	4.80	5.44	0.70	1.30	0.30	0.25
SMD2920R075SF60V	6.73	7.98	4.80	5.44	0.80	1.60	0.30	0.25
SMD2920R100SF	6.73	7.98	4.80	5.44	0.40	1.00	0.30	0.25
SMD2920R100SF60V	6.73	7.98	4.80	5.44	1.00	2.10	0.30	0.25
SMD2920R125SF	6.73	7.98	4.80	5.44	0.40	1.00	0.30	0.25
SMD2920R150SF	6.73	7.98	4.80	5.44	0.50	1.30	0.30	0.25
SMD2920R185SF	6.73	7.98	4.80	5.44	0.70	1.40	0.30	0.25
SMD2920R200SF	6.73	7.98	4.80	5.44	0.70	1.40	0.30	0.25
SMD2920R200SF24V	6.73	7.98	4.80	5.44	0.70	1.40	0.30	0.25
SMD2920R200SF33V	6.73	7.98	4.80	5.44	0.70	1.40	0.30	0.25
SMD2920R250SF	6.73	7.98	4.80	5.44	0.7	1.40	0.30	0.25
SMD2920R250SF24V	6.73	7.98	4.80	5.44	0.7	1.40	0.30	0.25
SMD2920R250SF33V	6.73	7.98	4.80	5.44	0.7	1.40	0.30	0.25
SMD2920R260SF	6.73	7.98	4.80	5.44	0.7	1.40	0.30	0.25
SMD2920R260SF16V	6.73	7.98	4.80	5.44	0.70	1.40	0.30	0.25
SMD2920R260SF24V	6.73	7.98	4.80	5.44	0.70	1.40	0.30	0.25
SMD2920R300SF	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.25
SMD2920R300SF16V	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.25
SMD2920R300SF24V	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.25
SMD2920R300SF30V	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.25
SMD2920R400SF	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R400SF16V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25

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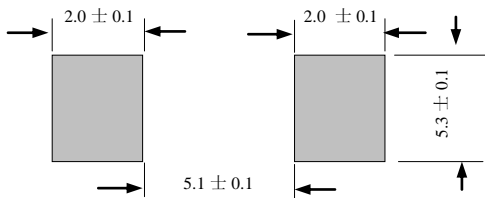
SMD2920R400SF24V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R500SF	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R500SF12V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R500SF16V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R500SF24V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R600SF	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R600SF12V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R700SF	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25
SMD2920R700SF12V	6.73	7.98	4.80	5.44	1.00	1.60	0.30	0.25

Termination Pad Characteristics

Terminal pad materials: Tin-plated Nickel-Copper

Terminal pad solder ability: Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

Recommended Pad Layout (mm.)



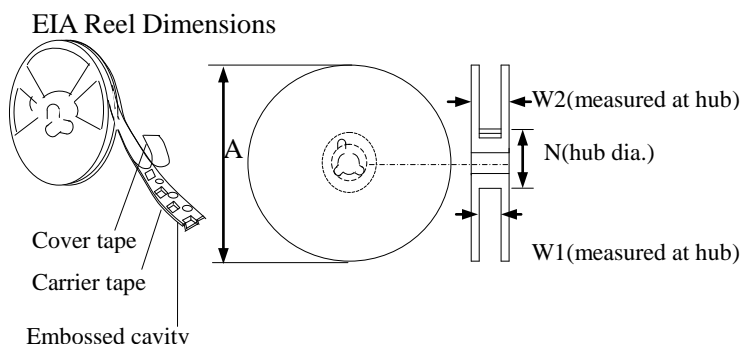
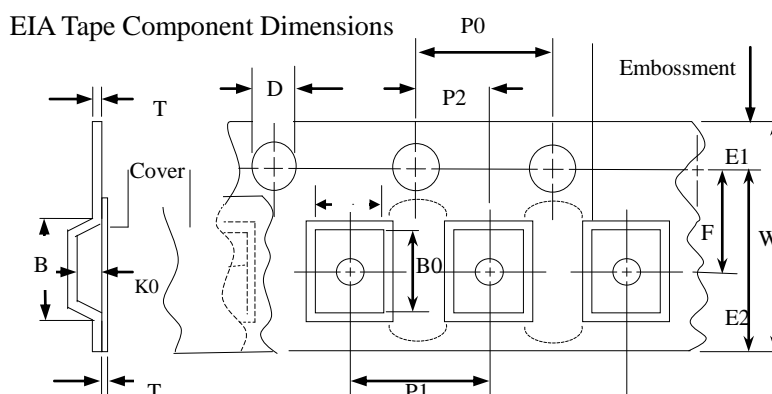
Packaging Quantity

Part Number	Quantity
SMD2920 Series	1500 pcs/reel
SMD2920R100SF60V	1000 pcs/reel

Tape & reel packaging per EIA481-1

Tape And Reel Specifications (mm)

Governing Specifications		EIA 481-2
W		16.00 ± 0.3
P0		4.00 ± 0.10
P1		8.00 ± 0.10
P2		2.00 ± 0.05
A0		5.70 ± 0.10
B0		8.00 ± 0.10
B1max.		12.10
D0		1.50 + 0.1, -0
F		7.50 ± 0.05
E1		1.75 ± 0.10
E2min.		14.25
T		0.60
T1max.		0.10
K0		0.80 ± 0.1
Leader min.		390
Trailer min.		160
Reel Dimensions		
A max.		178
N min.		60
W1		16.40 ± 0.5
W2		22.40



Storage And Handling

· Storage conditions: 0°C~30°C , 30%~60% R.H.

· Devices may not meet specified performance if storage conditions are exceeded.

Part Number System

SMD 2920 R □□□ S F □□ V

