

Description

The 2920 series provides surface mount resettable over-current protection with holding current from 0.3A to 7.0A. This series is suitable for applications with higher holding current and higher working voltage up to 60V.

Applications

- * USB peripherals
- * Disk drives
- * CD-ROMs
- * General electronics
- * Disk drives
- * Set-top-box and HDMI
- * Mobile Internet Device (MID)
- * PDAs / digital cameras
- * Game console port protection
- * Plug and play protection for motherboards and peripherals

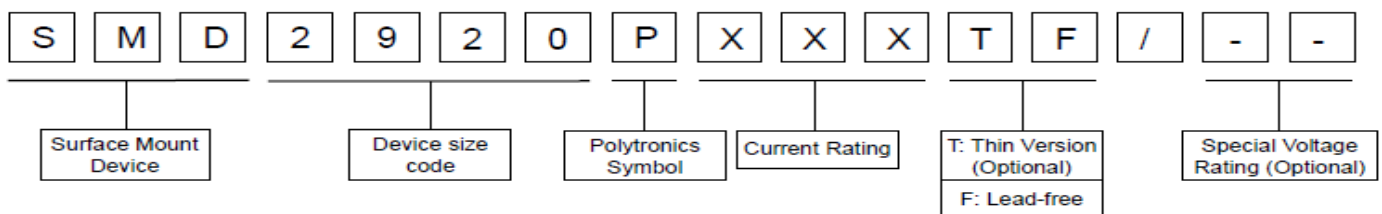
Features

- * I(hold):0.3~7.0A
- * Very high voltage surge capabilities
- * Available in lead-free version
- * Fast response to fault current
- * RoHS compliant, Lead-Free and Halogen-Free
- * Low resistance
- * Compact design saves board space
- * Compatible with high temperature solders

Device Schematic



Part Number Code



Ordering Information

Part Number	Halogen Free	Packaging Option	Quantity
SMD2920PxxxTF	Yes	Tape and Reel	1500

SMD2920 Series



Performance Specification

Type Number	I_{hold}	I_{trip}	V_{max}	Max. Time to Trip		I_{max}	P_d typ	R_{lmin}	R_{lmax}	Package
	A	A	V_{DC}	Current A	T_{max} S	A	W	Ω	Ω	
SMD2920P030TF	0.3	0.6	60	1.5	3	10	1.5	0.6	4.8	2920
SMD2920P050TF	0.5	1	60	2.5	4	10	1.5	0.18	1.4	2920
SMD2920P075TF	0.75	1.5	33	8	0.3	40	1.5	0.1	1	2920
SMD2920P075TF/60	0.75	1.5	60	8	0.3	40	1.5	0.1	1	2920
SMD2920P100TF	1.1	2.2	33	8	0.5	40	1.5	0.065	0.41	2920
SMD2920P100TF/60	1.1	2.2	60	8	0.5	40	1.5	0.065	0.41	2920
SMD2920P125TF	1.25	2.5	33	8	2	40	1.5	0.05	0.25	2920
SMD2920P150TF	1.5	3	33	8	2	40	1.5	0.035	0.23	2920
SMD2920P185TF	1.85	3.7	33	8	2.5	40	1.5	0.03	0.15	2920
SMD2920P200TF	2	4	16	8	4.5	40	1.5	0.02	0.12	2920
SMD2920P200TF/24	2	4	24	8	4.5	40	1.5	0.02	0.12	2920
SMD2920P200TF/33	2	4	33	8	4.5	40	1.5	0.02	0.12	2920
SMD2920P250TF	2.5	5	16	8	16	40	1.5	0.02	0.085	2920
SMD2920P250TF/24	2.5	5	24	8	16	40	1.5	0.02	0.085	2920
SMD2920P250TF/30	2.5	5	30	8	16	40	1.5	0.02	0.085	2920
SMD2920P260TF	2.6	5.2	6	8	10	40	1.5	0.014	0.075	2920
SMD2920P260TF/16	2.6	5.2	16	8	10	40	1.5	0.014	0.075	2920
SMD2920P260TF/33	2.6	5.2	33	8	10	40	1.5	0.014	0.075	2920
SMD2920P300TF	3	6	6	8	20	40	1.5	0.012	0.048	2920
SMD2920P300TF/16	3	6	16	8	20	40	1.5	0.012	0.048	2920
SMD2920P300TF/24	3	6	24	8	20	40	1.5	0.012	0.048	2920
SMD2920P300TF/33	3	6	33	8	20	40	1.5	0.012	0.048	2920
SMD2920P400TF	4	8	6	20	4.0	40	1.5	0.008	0.04	2920
SMD2920P400TF/16	4	8	16	20	4.0	40	1.5	0.008	0.04	2920
SMD2920P400TF/24	4	8	24	20	4.0	40	1.5	0.008	0.04	2920
SMD2920P500TF	5	10	6	25	5.0	40	1.5	0.005	0.031	2920
SMD2920P500TF/12	5	10	12	25	5.0	40	1.5	0.005	0.031	2920
SMD2920P500TF/16	5	10	16	25	5.0	40	1.5	0.005	0.031	2920
SMD2920P600TF	6	12	6	25	6.0	40	1.5	0.004	0.02	2920
SMD2920P600TF/12	6	12	12	25	6.0	40	1.5	0.004	0.02	2920
SMD2920P700TF	7	14	6	25	6.0	40	1.5	0.0025	0.01	2920
SMD2920P700TF/12	7	14	12	25	6.0	40	1.5	0.0025	0.01	2920

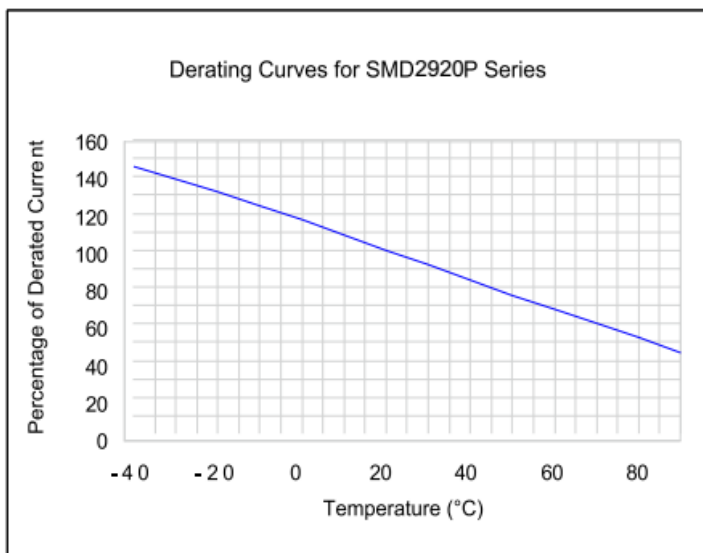
Positive Thermal Coefficient

Thermal Derating Chart-Ih(A)

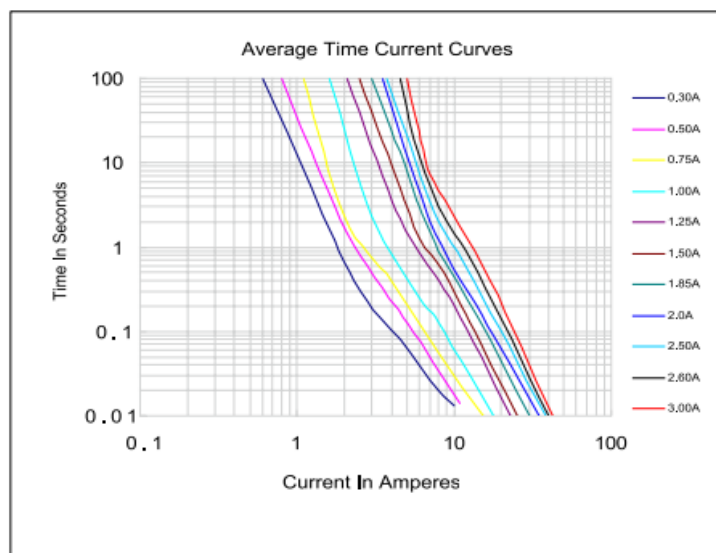
Part Number	Ambient Operation Temperature								
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C	85 °C
SMD2920P030TF	0.45	0.40	0.35	0.30	0.25	0.23	0.20	0.17	0.14
SMD2920P050TF	0.76	0.67	0.59	0.50	0.42	0.38	0.33	0.29	0.23
SMD2920P075TF	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
SMD2920P075TF/60	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
SMD2920P100TF	1.66	1.47	1.29	1.10	0.91	0.83	0.73	0.64	0.50
SMD2920P100TF/60	1.66	1.47	1.29	1.10	0.91	0.83	0.73	0.64	0.50
SMD2920P125TF	1.89	1.68	1.46	1.25	1.04	0.94	0.83	0.73	0.56
SMD2920P150TF	2.27	2.01	1.76	1.50	1.25	1.13	1.00	0.87	0.74
SMD2920P185TF	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
SMD2920P200TF	3.02	2.68	2.34	2.00	1.66	1.50	1.32	1.16	0.90
SMD2920P200TF/24	3.02	2.68	2.34	2.00	1.66	1.50	1.32	1.16	0.90
SMD2920P200TF/33	3.02	2.68	2.34	2.00	1.66	1.50	1.32	1.16	0.90
SMD2920P250TF	3.78	3.35	2.93	2.50	2.08	1.88	1.65	1.45	1.13
SMD2920P250TF/24	3.78	3.35	2.93	2.50	2.08	1.88	1.65	1.45	1.13
SMD2920P250TF/30	3.78	3.35	2.93	2.50	2.08	1.88	1.65	1.45	1.13
SMD2920P260TF	3.64	3.25	2.91	2.60	2.26	2.08	1.95	1.74	1.13
SMD2920P260TF/16	3.64	3.25	2.91	2.60	2.26	2.08	1.95	1.74	1.13
SMD2920P260TF/33	3.64	3.25	2.91	2.60	2.26	2.08	1.95	1.74	1.13
SMD2920P300TF	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34
SMD2920P300TF/16	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34
SMD2920P300TF/24	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34
SMD2920P300TF/33	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34
SMD2920P400TF	6.04	5.36	4.68	4.00	3.36	3.01	2.65	2.33	1.79
SMD2920P400TF/16	6.04	5.36	4.68	4.00	3.36	3.01	2.65	2.33	1.79
SMD2920P400TF/24	6.04	5.36	4.68	4.00	3.36	3.01	2.65	2.33	1.79
SMD2920P500TF	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920P500TF/12	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920P500TF/16	7.55	6.70	5.85	5.00	4.20	3.77	3.32	2.92	2.23
SMD2920P600TF	8.60	7.70	6.80	6.00	4.95	4.60	4.06	3.65	3.15
SMD2920P600TF/12	8.60	7.70	6.80	6.00	4.95	4.60	4.06	3.65	3.15
SMD2920P700TF	10.03	8.98	7.93	7.00	5.77	5.36	4.73	4.26	3.68
SMD2920P700TF/12	10.03	8.98	7.93	7.00	5.77	5.36	4.73	4.26	3.68

Typical Performance Characteristics

Thermal Derating Curve



Average Time-Current Curve



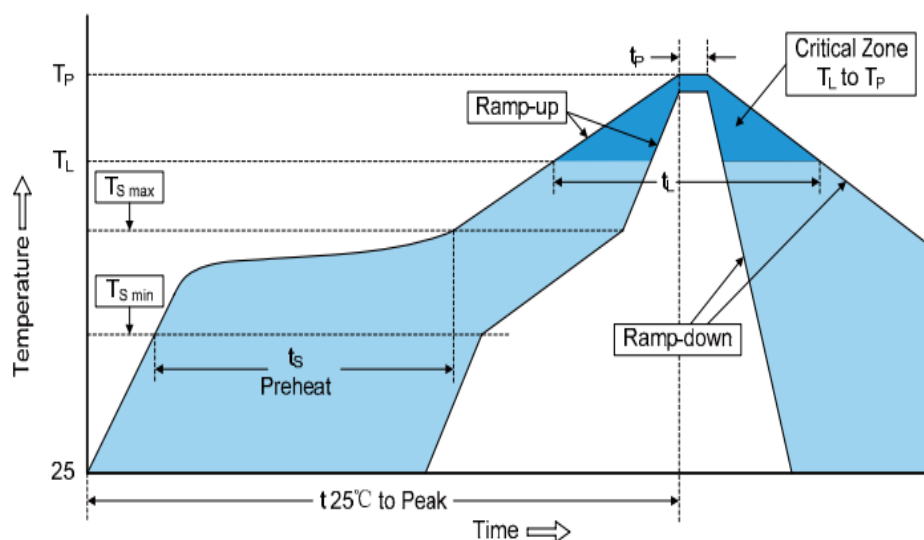
Environmental Specifications

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

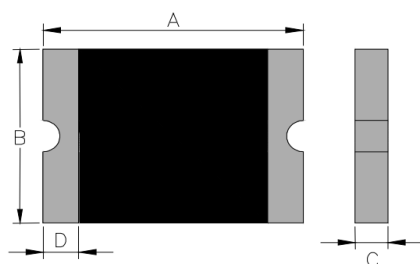
Maximum surface temperature of the device in the tripped state is 125 °C

Soldering Parameters

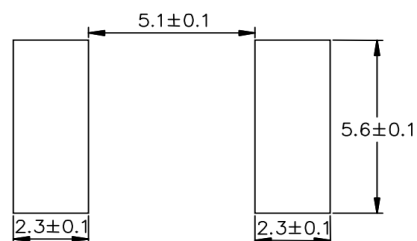


Profile Feature	Pb-Free Assembly
Average ramp-up rate ($T_{S \max}$ to T_P)	3 °C/second max.
Preheat <ul style="list-style-type: none"> -Temperature Min ($T_{S \min}$) -Temperature Max ($T_{S \max}$) -Time (min to max) ($T_{S \min}$ to $T_{S \max}$) 	150 °C 200 °C 60-180 seconds
Time maintained above: <ul style="list-style-type: none"> -Temperature (T_L) -Time (t_L) 	217 °C 60-150 seconds
Peak 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.
Storage Condition	0 °C ~ 35 °C, ≤70%RH

Lead style code



Recommended Pad Layout (mm)



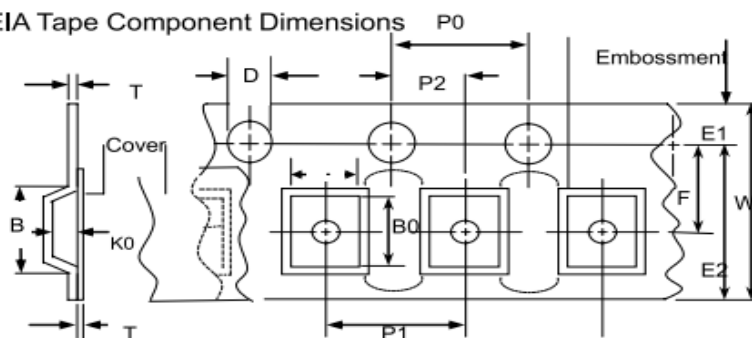
Dimensions

Type Number	Package Dimensions (mm)							Package Dimensions (in)						
	A		B		C		D	A		B		C		D
	min	max	min	max	min	max	min	min	max	min	max	min	max	min
SMD2920P030TF	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P050TF	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P075TF	6.73	7.98	4.8	5.44	0.7	1.3	0.3	0.265	0.314	0.189	0.214	0.028	0.051	0.012
SMD2920P075TF/60	6.73	7.98	4.8	5.44	0.8	1.6	0.3	0.265	0.314	0.189	0.214	0.031	0.063	0.012
SMD2920P100TF	6.73	7.98	4.8	5.44	0.4	1.0	0.3	0.265	0.314	0.189	0.214	0.016	0.039	0.012
SMD2920P100TF/60	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P125TF	6.73	7.98	4.8	5.44	0.4	1.0	0.3	0.265	0.314	0.189	0.214	0.016	0.039	0.012
SMD2920P150TF	6.73	7.98	4.8	5.44	0.5	1.3	0.3	0.265	0.314	0.189	0.214	0.02	0.051	0.012
SMD2920P185TF	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P200TF	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P200TF/24	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P200TF/33	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P250TF	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P250TF/24	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P250TF/30	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P260TF	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P260TF/16	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P260TF/33	6.73	7.98	4.8	5.44	0.7	1.4	0.3	0.265	0.314	0.189	0.214	0.028	0.055	0.012
SMD2920P300TF	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P300TF/16	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P300TF/24	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P300TF/33	6.73	7.98	4.8	5.44	0.6	1.2	0.3	0.265	0.314	0.189	0.214	0.024	0.047	0.012
SMD2920P400TF	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P400TF/16	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P400TF/24	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P500TF	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P500TF/12	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P500TF/16	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P600TF	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P600TF/12	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P700TF	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012
SMD2920P700TF/12	6.73	7.98	4.8	5.44	1	1.6	0.3	0.265	0.314	0.189	0.214	0.039	0.063	0.012

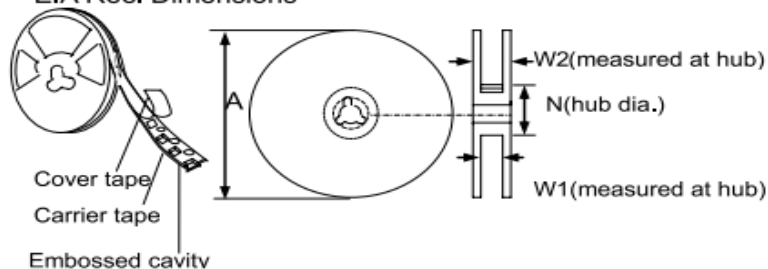
Tape and Reel Specifications

Governing Specifications	EIA 481-1
W	16.0 ± 0.3
P0	4.0 ± 0.10
P1	8.0 ± 0.10
P2	2.0 ± 0.05
A0	5.70 ± 0.10
B0	8.00 ± 0.10
B1max.	12.10
D0	$1.50 + 0.1, -0$
F	7.5 ± 0.05
E1	1.75 ± 0.10
E2min.	14.25
T	0.6
T1max.	0.1
K0	0.8 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	16.4 ± 0.5
W2	22.4 ± 0.5

EIA Tape Component Dimensions



EIA Reel Dimensions



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