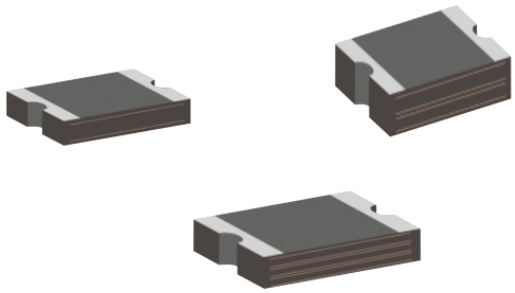
SMD2920P Series

Surface Mountable PTC Resettable Fuse

Description

The 2920 series provides surface mount resettable over-current protection with holding current from 0.3A to 3.0A. This series is suitable for applications with higher holding currant and higher working voltage up to 60V.



Features

- I(hold): 0.3~ 30A
- 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

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
- Mobile phones - battery and port protection

Part Number Code

S	M	D	2	9	2	0	P	X	X	X	T	F	/	-	-

- SMD: Surface Mount Device
- 2920: Device size code
- P: Polytronics Symbol
- XXX: Current Rating
- T: Thin Version (Optional)
- F: Lead-free
- /--: Special Voltage Rating (Optional)

Environmental Specifications

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25℃	$R_{min} \leq R \leq R_{max}$
Time to Trip	Specified current，V_{max}，25℃	T≤maximum Time to Trip
Hold Current	30min，at I_H	No trip
Trip Cycle Life	Vmax，Imax，100cycles	No arcing or burning
Trip Endurance	Vmax，1 hours	No arcing or burning

Physical Characteristics and Environmental Specifications

Terminal materials :	Tin-Plated Nickle-copper	
Soldering zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.	
Environmental Specifications		
Test	Conditions	Resistance Change
Passive aging	85℃,1000hours	±10%
Humidity aging	85℃/85%RH.1000 hours	±5%
Thermal shock	MIL-STD-202,Method 107G +85℃/-40℃,20times	-30% typical resistance change
Solvent Resistance	MIL-STD-202,Method 215	no change
Vibration	ML-STD-883C,Test Condition A	No change

Electrical Characteristic

Part Number	V_{Max}	I_{Max}	I_{Hold}	I_{Trip}	P_D	Maximum Time-to-trip		Resistance	
	(Vdc)	(A)	(A)	(A)	Max. (W)	Current (A)	Time (Sec)	R_{Min} (Ω)	$R1_{Max}$ (Ω)
SMD2920P030TF	60	100	0.30	0.60	1.5	1.5	3.0	0.60	4.80
SMD2920P050TF	60	100	0.50	1.00	1.5	2.5	4.0	0.18	1.40
SMD2920P075TF	33	100	0.75	1.50	1.5	8.0	0.3	0.10	1.00
SMD2920P100TF	33	100	1.00	2.20	1.5	8.0	0.5	0.065	0.41
SMD2920P125TF	33	100	1.25	2.50	1.5	8.0	2.0	0.05	0.25
SMD2920P150TF	33	100	1.50	3.00	1.5	8.0	2.0	0.035	0.23
SMD2920P185TF	33	100	1.85	3.70	1.5	8.0	2.5	0.030	0.15
SMD2920P200TF	16	100	2.00	4.00	1.5	8.0	4.5	0.020	0.12
SMD2920P200TF/24	24	100	2.00	4.00	1.5	8.0	4.5	0.020	0.12
SMD2920P250TF	16	100	2.50	5.00	1.5	8.0	16.0	0.020	0.085
SMD2920P260TF	16	100	2.60	5.20	1.5	8.0	10.0	0.014	0.075
SMD2920P300TF/6	6	100	3.00	6.00	1.5	8.0	20.0	0.012	0.048
SMD2920P300TF/16	16	100	3.00	6.00	1.5	8.0	20.0	0.012	0.048

V_{max} = Maximum operating voltage vice can withstand without damage at rated current (Imax).

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.

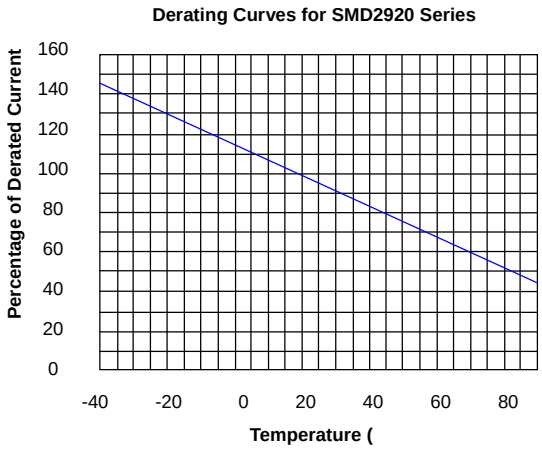
$Ri_{min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.

$R1_{max}$ = Maximum device resistance is measured one hour post reflow.

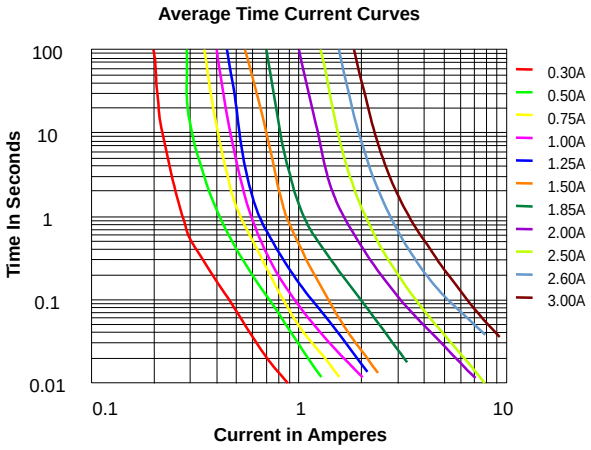
Thermal Derating Chart-I_H (A)

Part Number	Maximum ambient operating temperatures (℃)								
	-40	-20	0	25	40	50	60	70	85
SMD2920P030TF	0.44	0.37	0.35	0.30	0.28	0.23	0.20	0.18	0.14
SMD2920P050TF	0.73	0.62	0.59	0.50	0.47	0.38	0.34	0.30	0.24
SMD2920P075TF	1.09	0.92	0.88	0.75	0.70	0.56	0.50	0.45	0.36
SMD2920P100TF	1.45	1.23	1.17	1.00	0.93	0.75	0.67	0.60	0.48
SMD2920P125TF	1.81	1.54	1.46	1.25	1.16	0.94	0.84	0.75	0.60
SMD2920P150TF	2.18	1.85	1.76	1.50	1.40	1.13	1.01	0.90	0.72
SMD2920P185TF	2.68	2.28	2.16	1.85	1.72	1.39	1.24	1.11	0.89
SMD2920P200TF	2.90	2.46	2.34	2.00	1.86	1.50	1.34	1.20	0.96
SMD2920P200TF/24	2.90	2.46	2.34	2.00	1.86	1.50	1.34	1.20	0.96
SMD2920P250TF	3.63	3.08	2.93	2.50	2.33	1.88	1.68	1.50	1.20
SMD2920P260TF	3.77	3.20	3.04	2.60	2.42	1.95	1.74	1.56	1.25
SMD2920P300TF/6	4.35	3.69	3.51	3.00	2.79	2.25	2.01	1.80	1.44
SMD2920P300TF/16	4.35	3.69	3.51	3.00	2.79	2.25	2.01	1.80	1.44

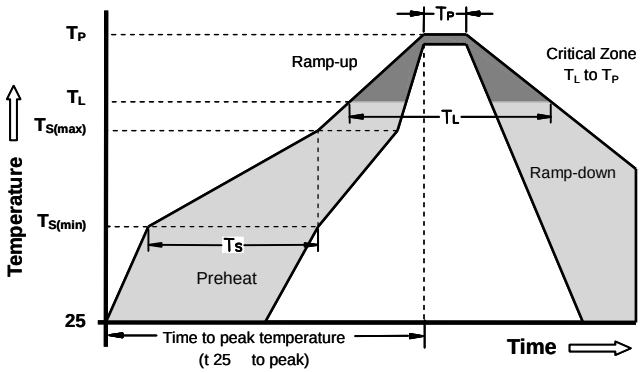
Thermal Derating Curve



Average Time-Current Curve

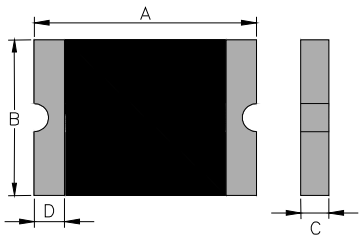
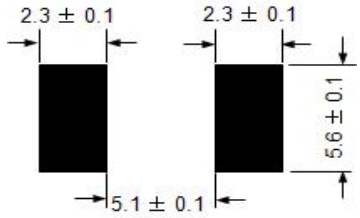


Soldering Parameters



Reflow Condition		Pb - Free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 -180 Seconds
Average ramp up rate (Liquids Temp T_L) to peak		3°C/second max
$T_{S(max)}$ to TL - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquids)	217°C
	- Time (min to max) (t_s)	60 -150 Seconds
Peak Temperature (T_P)		260 +0/-5°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 (T_P)		8 minutes Max
Do not exceed		260°C

Recommended Pad Layout (mm)

Lead style code	Recommended Pad Layout (mm.)
	

Product Dimensions

Unit : mm

Heat

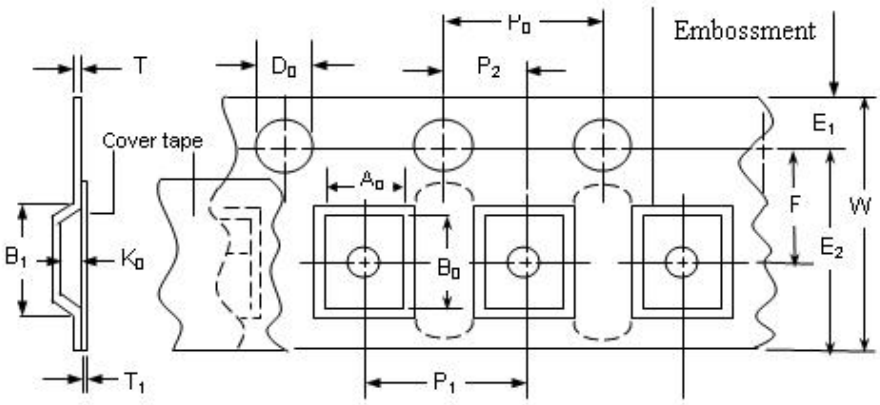
Part Number	Marking	A		B		C		D	E
		Max	Min	Max	Min	Max	Min	Min	Min
SMD2920P030TF	030L	6.73	7.98	4.80	5.44	0.60	1.15	0.30	0.15
SMD2920P050TF	050L	6.73	7.98	4.80	5.44	0.60	1.15	0.30	0.15
SMD2920P075TF	075L	6.73	7.98	4.80	5.44	0.60	1.15	0.30	0.15
SMD2920P100TF	100L	6.73	7.98	4.80	5.44	0.60	1.00	0.30	0.15
SMD2920P125TF	125L	6.73	7.98	4.80	5.44	0.60	1.00	0.30	0.15
SMD2920P150TF	150L	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.15
SMD2920P185TF	185L	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.15
SMD2920P200TF	200L	6.73	7.98	4.80	5.44	0.40	0.80	0.30	0.15
SMD2920P200TF/24	200L	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.15
SMD2920P250TF	250L	6.73	7.98	4.80	5.44	0.40	0.80	0.30	0.15
SMD2920P260TF	260L	6.73	7.98	4.80	5.44	0.40	0.80	0.30	0.15
SMD2920P300TF/6	300L	6.73	7.98	4.80	5.44	0.40	0.80	0.30	0.15
SMD2920P300TF/16	300L	6.73	7.98	4.80	5.44	0.60	1.20	0.30	0.15

Taping and Reel Specifications

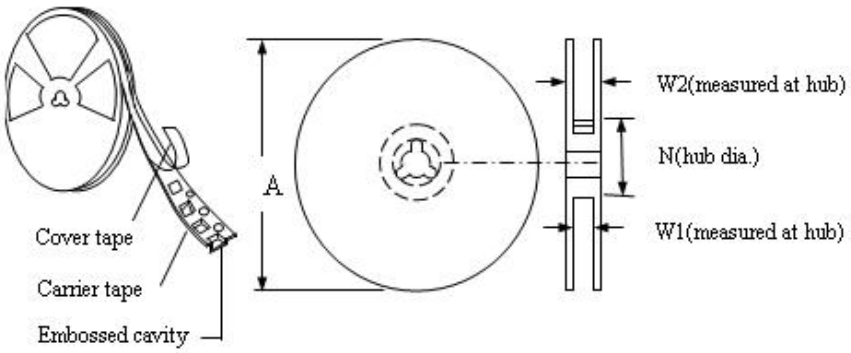
Covering Specifications EIA 481-1(Unit:mm)	
W	16± 0.3
P_0	4.0 ± 0.10
P_1	8.0 ± 0.10
P_2	2.0 ± 0.10
A_0	5.74 ± 0.10
B_0	8.02 ± 0.10
D_0	1.55 ± 0.05
F	7.5± 0.10
E_1	1.75 ± 0.10
T	0.20± 0.10
Leader min.	390
Trailer min.	160

Reel Dimensions	
A	178± 1
N	58± 1
W_1	16.9± 0.80
W_2	19.3± 0.1

EIA Tape Component Dimentions



EIA Reel Dimentions



Packaging Quantity

Quantity	1500		2000	
Part Number	SMD2920P185TF	SMD2920P300TF/16	SMD2920P030TF	SMD2920P150TF
		SMD2920P200TF/24	SMD2920P050TF	SMD2920P200TF
			SMD2920P075TF	SMD2920P250TF
			SMD2920P100TF	SMD2920P260TF
			SMD2920P125TF	SMD2920P300TF