

A. Features 重要特性

- ◆ Smaller size saves board space and cost
超小尺寸、节约空间和成本
- ◆ Resettable circuit protection
自恢复保护、免维护
- ◆ Fast time-to-trip
动作时间快
- ◆ Low resistance
低内阻值
- ◆ Surface mount packaging for automated assembly
贴片式封装，方便自动化生产
- ◆ Lead-free and compliant with the European Union RoHS Directive 2002/95/EC
符合欧洲ROHS无铅环保要求

B. Application 应用范围

Polymer Resettable Fuse for over-current, over-temperature and short-circuit protection
可恢复保险丝用于过流、温度和线路短路保护

- ◆ Computer motherboards
计算机主板
- ◆ IEEE1394 Ports
IEEE1394通讯接口
- ◆ USB hub, ports and peripherals
USB交换机及外围设备
- ◆ Phones
电话设备
- ◆ Data communication
数据交换机
- ◆ Modems/ Ethernet/LAN
调制解调器/以太网

C. General Description 简要概述

Polymer resettable fuse are made of polymeric PTC materials which is a matrix of
自恢复保险丝是聚合物高分子材料通过特殊工艺而成，
polymer containing dispersed conductive particles. Generally, the device has a very
高分子粒子按一定的规律排列，自恢复保险丝器件有低内阻
low resistance. If an over-current happened, as a response to the damage current,
当电路中电流突然增大时，
the resistance will immediately increase to very high, reducing the current of the
器件将会在短时间内阻值升到高阻状态、高分子膨胀

circuit to a safe value that the loading can carry. Once fault to the circuit is weed out

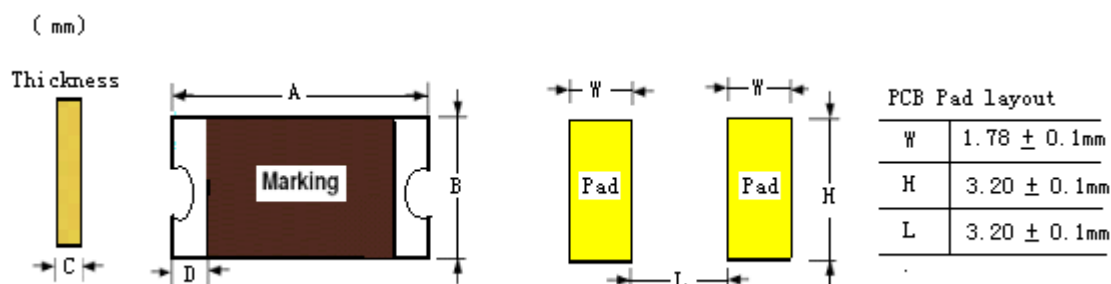
从而起到减少过电流;

and power is recuperated, the polymer will deflate itself , the device will reset and is

一旦故障排除后，高分子将会恢复正常规则排序。

ready for normal operation.

D. Product Dimensions 产品尺寸 (mm)



型号	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min
SMD1812-010	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-014	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-020	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-030	4.37	4.73	3.07	3.41	0.50	1.00	0.30	0.25
SMD1812-050	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
SMD1812-075	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
SMD1812-110	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
1812-110-16V	4.37	4.73	3.07	3.41	0.40	0.90	0.30	0.25
SMD1812-125	4.37	4.73	3.07	3.41	0.30	0.80	0.30	0.25
SMD1812-150	4.37	4.73	3.07	3.41	0.30	0.80	0.30	0.25
1812-150-16V	4.37	4.73	3.07	3.41	0.30	0.80	0.30	0.25
SMD1812-160	4.37	4.73	3.07	3.41	0.40	0.80	0.30	0.25
SMD1812-200	4.37	4.73	3.07	3.41	0.40	0.80	0.30	0.25
SMD1812-250	4.37	4.73	3.07	3.41	0.40	1.10	0.30	0.25
SMD1812-260	4.37	4.73	3.07	3.41	0.40	1.10	0.30	0.25
SMD1812-300	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.25
SMD1812-350	4.37	4.73	3.07	3.41	0.50	1.20	0.30	0.25

E. Electrical Characteristics 电气参数

Model	Vmax (Vdc)	Imax(A)	Ihold @25℃ (A)	Itrip @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	R1min (Ω)	R1max (Ω)
SMD1812-010	30.0	100	0.10	0.30	0.8	0.5	1.50	0.750	15.00
SMD1812-014	33.0	100	0.14	0.34	0.8	1.5	1.15	0.650	6.000
SMD1812-020	30.0	100	0.20	0.40	0.8	8.0	0.02	0.350	5.000
SMD1812-030	30.0	100	0.30	0.60	0.8	8.0	0.10	0.250	3.000
SMD1812-050	30.0	100	0.50	1.00	0.8	8.0	0.15	0.150	1.000
SMD1812-075	33.0	100	0.75	1.50	0.8	8.0	0.20	0.090	0.450
SMD1812-110	8.0	100	1.10	2.20	0.8	8.0	0.30	0.050	0.250
1812-110-16V	16.0	100	1.10	2.20	0.8	8.0	0.30	0.050	0.250
SMD1812-125	16.0	100	1.25	2.50	0.8	8.0	0.40	0.050	0.140
SMD1812-150	8.0	100	1.50	3.00	0.8	8.0	0.50	0.040	0.160
1812-150-24V	24.0	100	1.50	3.00	0.8	8.0	0.50	0.040	0.160
SMD1812-160	8.0	100	1.60	2.80	0.8	8.0	1.00	0.030	0.130
SMD1812-200	8.0	100	2.00	4.00	0.8	8.0	2.00	0.020	0.100
SMD1812-200-12V	16.0	100	2.00	4.00	0.8	8.0	2.00	0.020	0.100
SMD1812-200-24V	24.0	100	2.00	4.00	0.8	8.0	2.00	0.020	0.100
SMD1812-250	16.0	100	2.50	5.00	0.8	8.0	2.50	0.015	0.050
SMD1812-260	8.0	100	2.60	5.00	0.8	8.0	2.50	0.015	0.050
SMD1812-260-12V	12.0	100	2.60	5.00	0.8	8.0	2.50	0.015	0.050
SMD1812-260-24V	24.0	100	2.60	5.00	0.8	8.0	2.50	0.015	0.050
SMD1812-300	8.0	100	3.00	5.00	0.8	8.0	4.00	0.012	0.040
SMD1812-300-16V	16.0	100	3.00	5.00	0.8	8.0	4.00	0.012	0.040
SMD1812-350	6.0	100	3.50	6.00	2.0	10.0	4.00	0.008	0.030

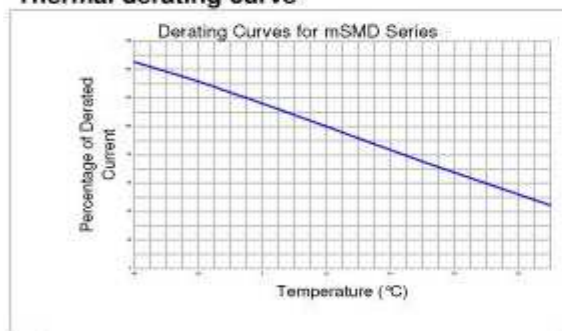
F. Thermal Derating 温度折减比 (A)

Model	Maximum ambient operating temperature Vs.hold current								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD1812-010	0.16	0.14	0.12	0.11	0.08	0.07	0.06	0.05	0.03
SMD1812-014	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
SMD1812-020	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10
SMD1812-030	0.44	0.39	0.35	0.30	0.26	0.23	0.21	0.18	0.15
SMD1812-050	0.59	0.57	0.55	0.50	0.45	0.43	0.35	0.30	0.23
SMD1812-075	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812-110	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
1812-110-16V	1.59	1.44	1.27	1.10	0.92	0.83	0.70	0.65	0.51
SMD1812-125	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53

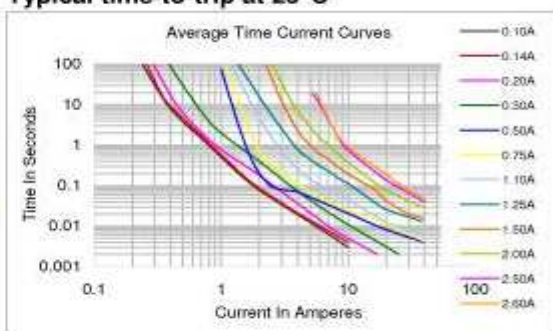
SMD1812-150	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
1812-150-16V	2.29	2.03	1.77	1.50	1.23	1.09	0.95	0.82	0.60
SMD1812-160	2.10	1.96	1.88	1.60	1.26	1.12	0.98	0.84	0.63
SMD1812-200	2.88	2.61	2.25	2.00	1.80	1.66	1.45	1.09	0.80
SMD1812-250	3.85	3.45	3.00	2.5	2.05	1.85	1.75	1.30	1.10
SMD1812-260	3.90	3.42	2.96	2.60	2.33	2.07	1.94	1.35	1.00
1812-260-12V	3.90	3.41	2.95	2.60	2.32	2.07	1.93	1.35	1.00
SMD1812-300	4.15	3.76	3.46	3.00	2.55	2.28	2.01	1.61	1.33
SMD1812-350	4.84	4.39	4.04	3.50	2.98	2.66	2.35	1.88	1.55

I_H/T-chart

Thermal derating curve



Typical time-to-trip at 25°C

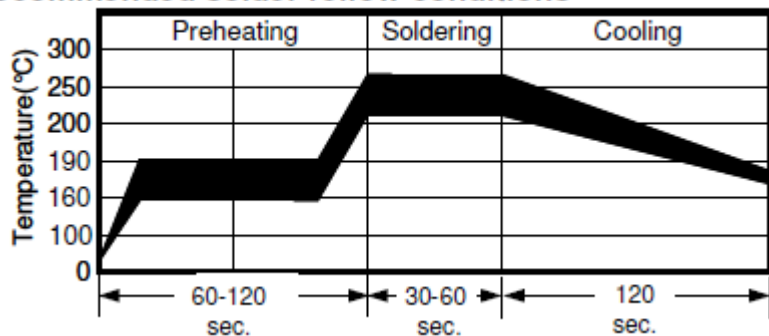


G. Test Procedures and Requirements 测试条件

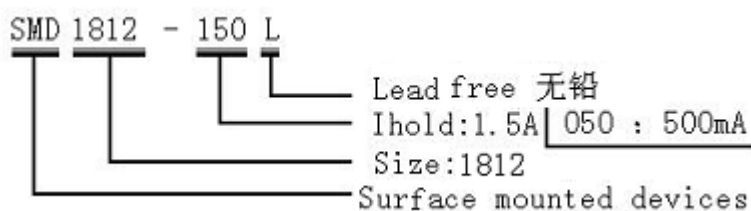
Test 测试项目	Test Conditions 测试条件	Accept/Reject Criteria 判定标准
Resistance	In still air @ 25°C	$R_{min} \leq R \leq R_{1max}$
Time to Trip	V _{max} , 25°C, In still air @ 25°C	$T \leq \text{max. time to trip (seconds)}$
Hold Current	30 min. at I _H , In still air @ 25°C	No trip
Trip Cycle Life	V _{max} , I _{max} , 100 cycles, In still air @ 25°C	No arcing or burning
Trip Endurance	V _{max} , 1 hours, In still air @ 25°C	No arcing or burning

H. Solder Reflow Conditions 焊接时间与温度要求

Recommended solder reflow conditions



I. Order information 订购信息



包装信息:

SMD1812 Series : 1500PCS / 盘

基本术语说明

IH: 保持电流	25℃静态空气环境中PPTC不工作的最高电流
IT: 触发电流	25℃空气环境中PPTC动作所需的最小电流
Ttrip: 动作时间	25℃空气环境5倍IH时最大动作时间
Vmax: 最大工作电压	PPTC的最大工作电压
I _{max} : 最大承受电流	PPTC在电路工作最大承受电流
Rmin: 最小电阻	25℃环境温度下PPTC最小零功率阻值
R1maX: 最大电阻	正常动作一次后, 放置1小时, 在25℃环境温度下PPTC最大功率阻值

NOTE: TERMINAL PAD SOLDERABILITY :

MEETS EIA SPECIFICATION RS186-9E

AND ANSI, J-STD-002 CATEGORY 3.

器件的焊接符合美国标准协会 J-STD-002 要求

有任何更改, 我司将不另行通知。

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