

# 深圳市华微讯半导体有限公司

## 承 认 书

### SPECIFICATION FOR APPROVAL

客户名称 Customer name	
客户料号 Customer material No.	
产品名称 Product name	PTC自恢复保险丝
产品型号/规格 specification	
送样日期 Deliver date	

#### 本司确认 (HWX APPROVAL)

检验 Inspection	校对 Proofreading	批准 Approval	签章 Signature
张淑敏	张伟杰		

#### 客户确认 (CUSTOMER APPROVAL)

检验 Inspection	校对 Proofreading	批准 Approval	签章 Signature

确认结果 Verify the results:

合格 Qualified

不合格 Unqualified

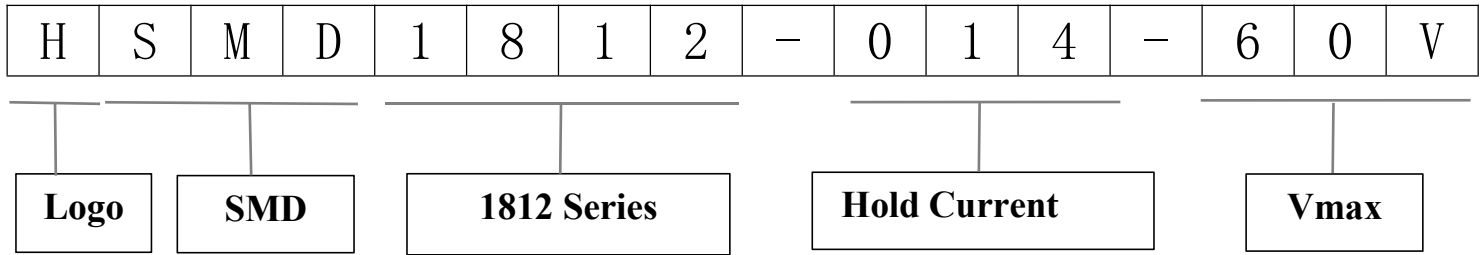
其他 Other

地址: 深圳市龙华区福城街道丹湖社区人民路231号楼房一301

TEL: 0755-2801 1775

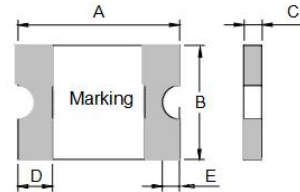
网址: [www.hwxfuse.com](http://www.hwxfuse.com)

**1、 Description**



**Solderability:**

Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3



A		B		C		D		E	Marking
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
4.37	4.73	3.07	3.41	0.65	1.15	0.30	1.20	0.20	D014

**2、 Electrical performance**

Part Number	Vmax	I <sub>max</sub>	I <sub>hold</sub>	I <sub>trip</sub>	P <sub>dmax</sub>	Max Time T <sub>rip</sub>		Resistance	
	(V)	(A)	(A)	(A)	(W)	(A)	(s)	R <sub>min</sub>	R <sub>1max</sub>
								(Ω)	(Ω)
HSMD1812-014	60	10	0.14	0.34	0.8	1.50	0.15	1.20	6.50

**I<sub>h</sub>:** Maximum operating current of the HPTC at an ambient temperature of 25°C

**I<sub>t</sub>:** The HPTC initiated the minimum current for protection at an ambient temperature of 25°C

**V<sub>max</sub>:** Maximum operating voltage of the HPTC

**I<sub>max</sub>:** Maximum current that the HPTC can withstand

**R<sub>min</sub>:** Minimum resistance at 25°C of stationary air

**R<sub>1max</sub>:** Maximum resistance of product

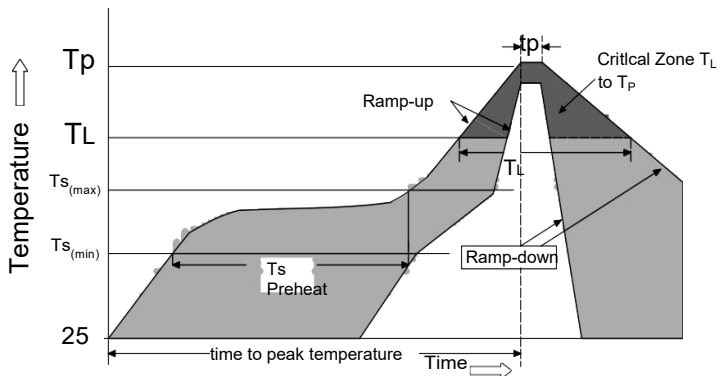
**3、 Table of Operating Current with Temperature (A) (for reference only)**

Model	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
HSMD1812-014	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06

**4、 Test Procedures And Requirements**

test	Test Condition	Accept/Reject Criteria
Resistance	In still air @ 25°C	$R_{min} \leq R \leq R_{max}$
Time to Trip	Specified current, $V_{max}$ , 25°C	$T \leq \text{maximum Time to Trip}$
Trip Cycle Life	$V_{max}$ , $I_{max}$ , 100cycles	No arcing or burning
Trip Endurance	$V_{max}$ , 1 hours	No arcing or burning
Terminal materials :	Tin-Plated Nickle-copper	
Soldering zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.	
<b>Environmental Specifications</b>		
Passive aging	85°C, 1000hours	$\pm 10\%$
Humidity aging	85°C/85%RH. 1000 hours	$\pm 5\%$
Thermal shock	MIL-STD-202, Method 107G +85°C/-40°C, 20times	-30% typical resistance change
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	ML-STD-883C, Test Condition A	No chage

**5、 Soldering parameters**



Profile Feature		
Average Ramp-Up Rate ( $T_{s(max)}$ to $T_P$ )		3°C/second max
Pre Heat:	Temperature Min ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (Min to Max) ( $t_s$ )	60 – 180 secs
Time Maintained Above:	Temperature ( $T_L$ )	217°C
	Temperature ( $t_L$ )	60 – 150 seconds
Peak / Classification Temperature ( $T_P$ )		260 <sup>+0/-5</sup> °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.

- ◆ 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

**6、 Package Information**

**storage condition:**

**Storage conditions: 30° C max, 60% R.H.Devices may not meet specified performance if storage conditions are exceeded.**

W	12.0±0.10
F	5.50±0.05
E1	1.75±0.10
D0	1.55±0.05
D1	1.50 min
P0	4.0±0.10
P1	8.0±0.10
P2	2.0±0.05
A0	3.58±0.10
B0	4.93±0.10
T	0.25±0.05
K0	0.87±0.10
Leader	390mm
Trailer	160mm
Q'ty	1,500pcs/Reel

REEL DIMENSIONS: EIA-481-1 (mm)	
C	Ø178±1.0
D	Ø60.2±0.5
W	9.0±1.5
H	11.0±0.5



**7、 WARNING**

- 1、 Use PPTC exceed by the maximum rating and improper use may result in device damage and possible electrical arcing and flame.
- 2、 PPTC are designed for protection against over current or temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- 3、 Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- 4、 Use PPTC with a large inductance in circuit will generate a circuit voltage above the rated voltage of the PPTC.
- 5、 Avoid impact PPTC device its thermal expansion like placed under pressure or installed in limited space.
- 6、 If any quality problems caused by improper use mentioned above,our company is not responsible.