

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

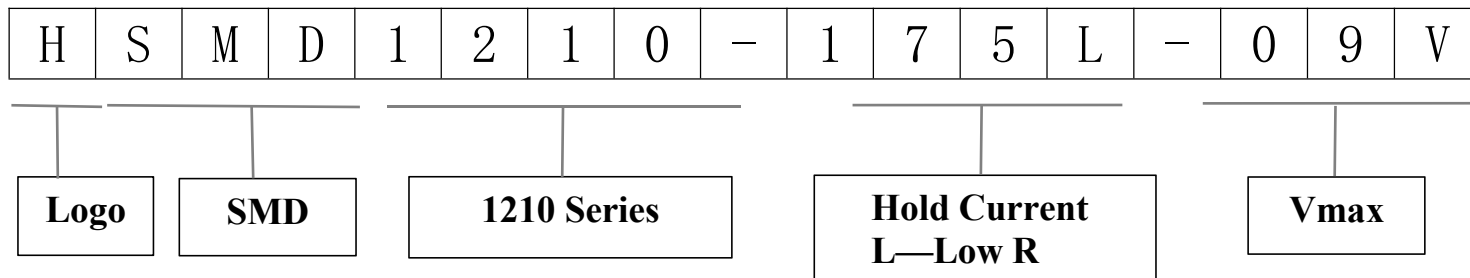
其他 Other

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

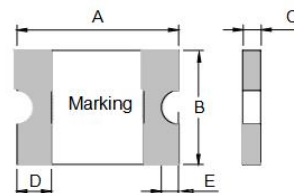
网址: www.hwxfuse.com

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 | |
| 3.00 | 3.43 | 2.35 | 2.80 | 0.35 | 0.75 | 0.25 | 0.75 | 0.10 | D17 |

2、Electrical performance

| Part Number | Vmax | I _{max} | I _{hold} | I _{trip} | P _{dmax} | Max Time T _{rip} | | Resistance | |
|---------------|------|------------------|-------------------|-------------------|-------------------|---------------------------|------|------------------|-------------------|
| | (V) | (A) | (A) | (A) | (W) | (A) | (s) | R _{min} | R _{1max} |
| | | | | | | | | (Ω) | (Ω) |
| HSMD1210-175L | 9 | 50 | 1.75 | 3.50 | 1.2 | 8.0 | 1.00 | 0.005 | 0.040 |

I_h: Maximum operating current of the HPTC at an ambient temperature of 25°C

I_t: The HPTC initiated the minimum current for protection at an ambient temperature of 25°C

V_{max}: Maximum operating voltage of the HPTC

I_{max}: Maximum current that the HPTC can withstand

R_{min}: Minimum resistance at 25°C of stationary air

R_{1max}: Maximum resistance of product

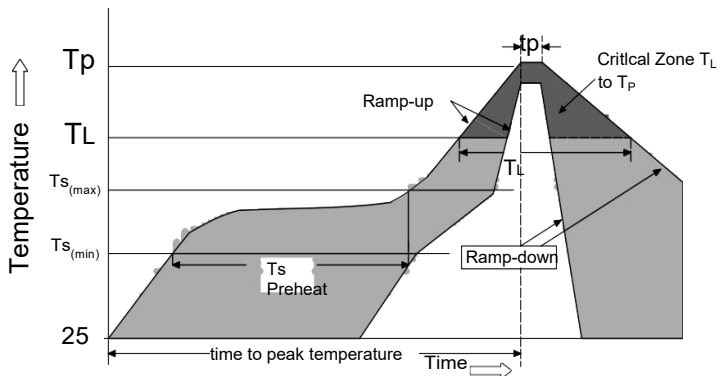
3、Table of Operating Current with Temperature (A) (for reference only)

| Model | Ambient Operating Temperature | | | | | | | | |
|---------------|-------------------------------|-------|------|------|------|------|------|------|------|
| | -40°C | -20°C | 0°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| HSMD1210-175L | 2.56 | 2.31 | 2.00 | 1.75 | 1.53 | 1.34 | 1.22 | 1.06 | 0.83 |

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. | |
| Environmental Specifications | | |
| 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 ^{+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. |

- ◆ 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

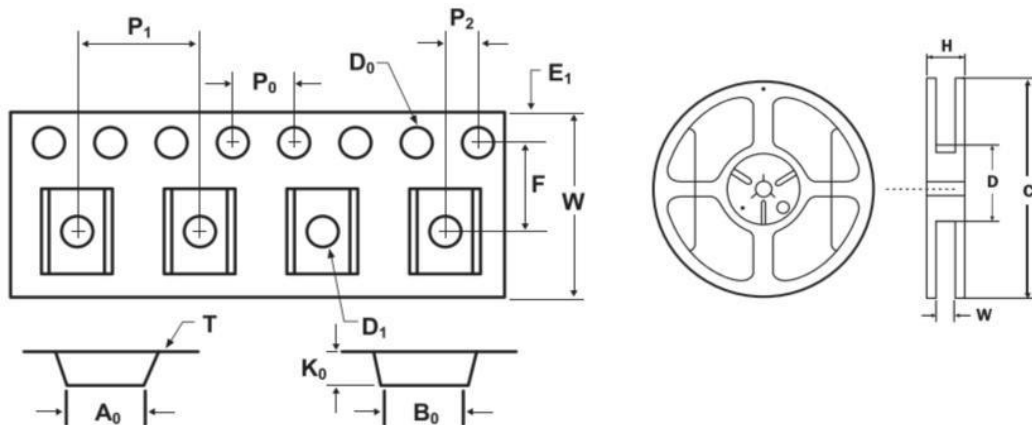
6、 Package Information

storage condition:

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

| | |
|---------|---------------|
| W | 8.10±0.10 |
| F | 3.50±0.05 |
| E1 | 1.75±0.10 |
| D0 | 1.55±0.05 |
| D1 | 1.00 min |
| P0 | 4.0±0.10 |
| P1 | 4.0±0.10 |
| P2 | 2.0±0.05 |
| A0 | 3.00±0.10 |
| B0 | 3.50±0.10 |
| T | 0.25±0.05 |
| K0 | 0.85±0.10 |
| Leader | 390mm |
| Trailer | 160mm |
| Q'ty | 4,000pcs/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.