

**Surface Mountable PTC Resettable Fuse: Lo Rho FSMD1206 Series****1. Summary**

- (a) **RoHS Compliant & Halogen Free**
- (b) **Applications: All high-density boards**
- (c) **Product Features: Small surface mountable, Solid state, Faster time to trip than standard SMD devices, Lower resistance than standard SMD devices**
- (d) **Operation Current: 0.5~2.0A**
- (e) **Maximum Voltage: 6V**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL: File No. E211981
 C-UL: File No. E211981
 TÜV: File No. R50090556

3. Electrical Characteristics (23°C)

| Part Number | Hold Current | Trip Current | Rated Voltage | Max Current | Typical Power | Max Time to Trip | | Resistance | |
|-----------------------|--------------|--------------|-----------------|---------------|---------------|------------------|------|------------|------------|
| | I_H , A | I_T , A | V_{MAX} , VDC | I_{MAX} , A | P_d , W | Current | Time | R_{MIN} | R_{1MAX} |
| | | | | | | A | Sec | Ohms | Ohms |
| FSMD050-1206RZ | 0.50 | 1.50 | 6 | 100 | 0.8 | 8.0 | 0.20 | 0.025 | 0.200 |
| FSMD075-1206RZ | 0.75 | 1.80 | 6 | 100 | 0.8 | 8.0 | 0.30 | 0.018 | 0.180 |
| FSMD110-1206RZ | 1.10 | 2.20 | 6 | 100 | 0.8 | 8.0 | 0.30 | 0.015 | 0.100 |
| FSMD150-1206RZ | 1.50 | 3.00 | 6 | 100 | 0.8 | 8.0 | 0.30 | 0.010 | 0.065 |
| FSMD200-1206RZ | 2.00 | 4.00 | 6 | 100 | 0.8 | 8.0 | 0.50 | 0.005 | 0.055 |

I_H =Hold current-maximum current at which the device will not trip at 23°C still air.

I_T =Trip current-minimum current at which the device will always trip at 23°C still air.

V_{MAX} =Maximum voltage device can withstand without damage at it rated current.(I_{MAX})

I_{MAX} = Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).

P_d =Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

R_{MIN} =Minimum device resistance at 23°C prior to tripping.

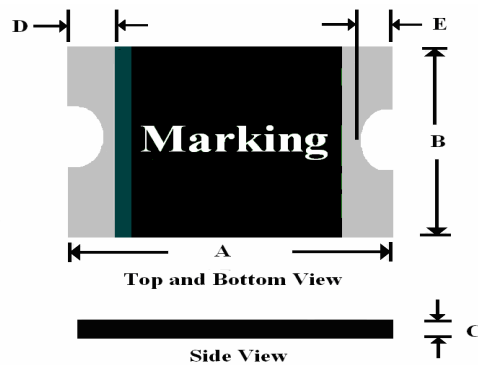
R_{1MAX} =Maximum device resistance at 23°C measured 1 hour post trip.

Termination pad characteristics

Termination pad materials: Pure Tin

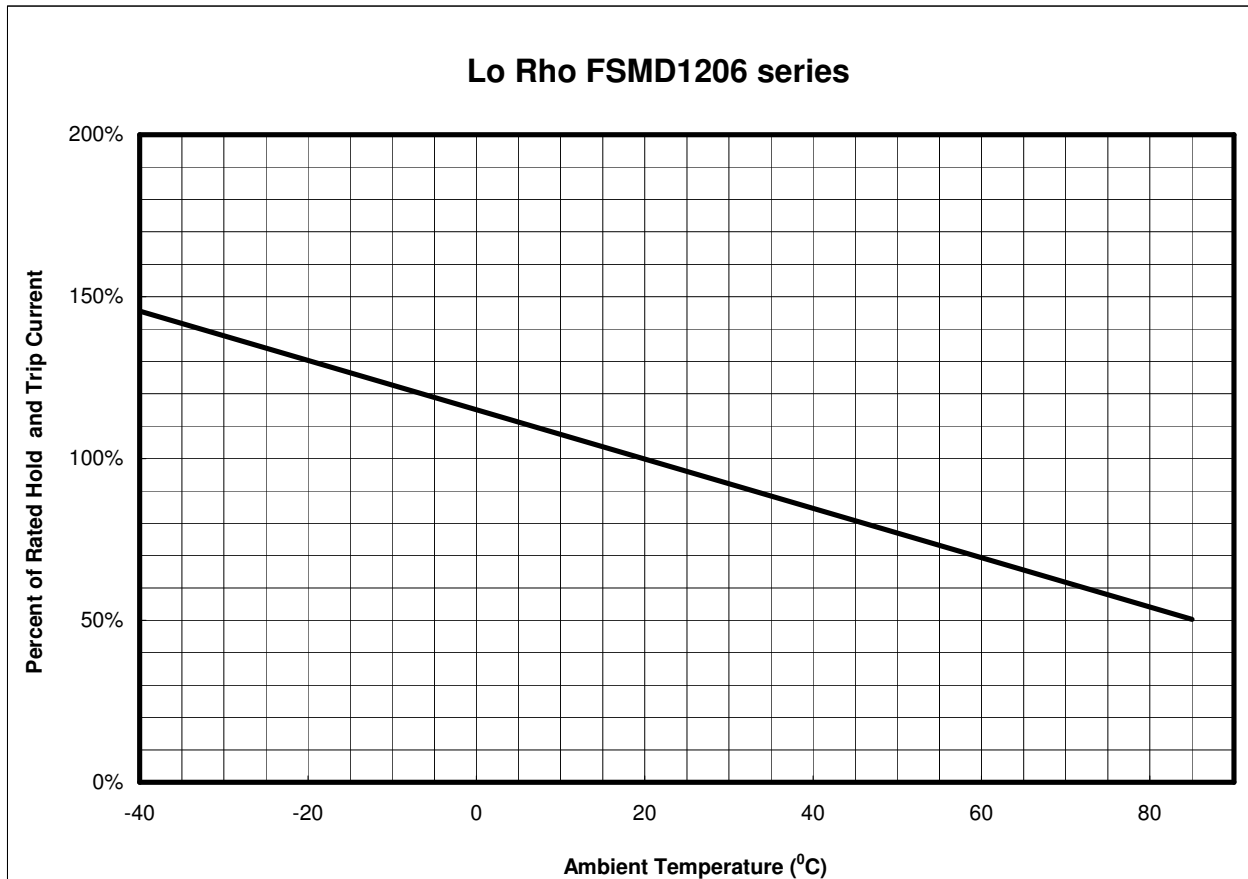


4. FSMD Product Dimensions (Millimeters)



| Part Number | A | | B | | C | | D | | E | |
|----------------|------|------|------|------|------|------|------|------|------|------|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| FSMD050-1206RZ | 3.00 | 3.50 | 1.50 | 1.80 | 0.40 | 0.75 | 0.25 | 0.75 | 0.10 | 0.45 |
| FSMD075-1206RZ | 3.00 | 3.50 | 1.50 | 1.80 | 0.40 | 0.75 | 0.25 | 0.75 | 0.10 | 0.45 |
| FSMD110-1206RZ | 3.00 | 3.50 | 1.50 | 1.80 | 0.40 | 0.75 | 0.25 | 0.75 | 0.10 | 0.45 |
| FSMD150-1206RZ | 3.00 | 3.50 | 1.50 | 1.80 | 0.40 | 0.75 | 0.25 | 0.75 | 0.10 | 0.45 |
| FSMD200-1206RZ | 3.00 | 3.50 | 1.50 | 1.80 | 0.40 | 0.75 | 0.25 | 0.75 | 0.10 | 0.45 |

5. Thermal Derating Curve

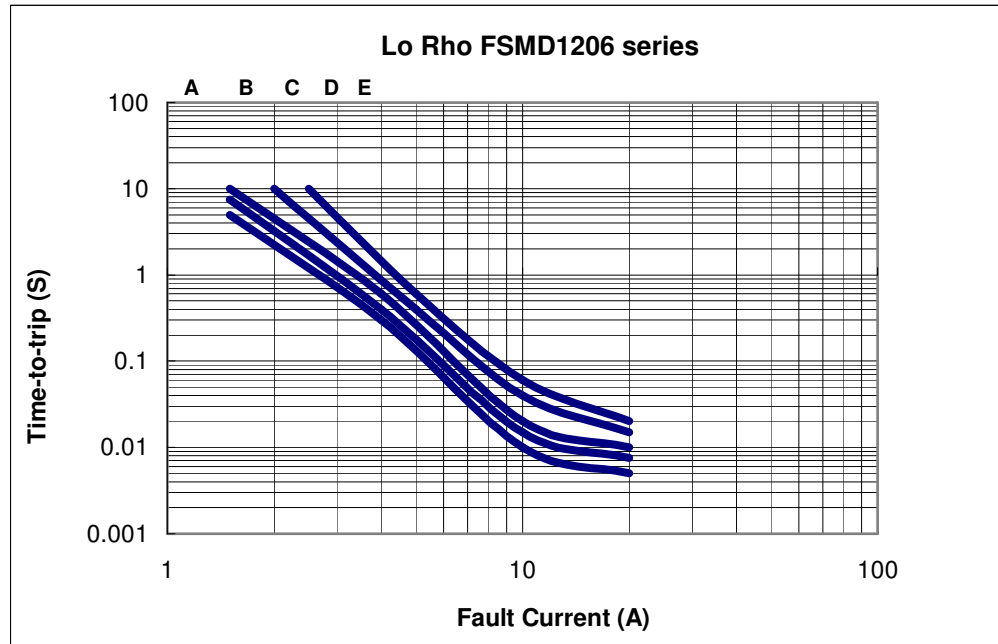


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A=FSMD050-1206RZ
- B=FSMD075-1206RZ
- C=FSMD110-1206RZ
- D=FSMD150-1206RZ
- E=FSMD200-1206RZ



7. Material Specification

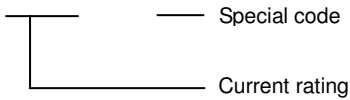
Terminal pad material: Pure Tin

Soldering characteristics: Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

8. Part Numbering and Marking System

Part Numbering System

F S M D □ □ □ - 1206 RZ



Part Marking System



Example



Part Identification

- EZ = FSMD050-1206RZ
- FZ = FSMD075-1206RZ
- HZ = FSMD110-1206RZ
- JZ = FSMD150-1206RZ
- MZ = FSMD200-1206RZ

Warning: -Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.



-PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.

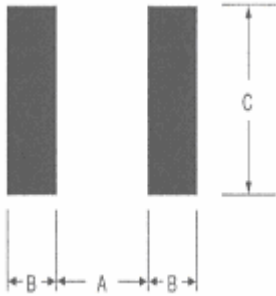
-Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

NOTE : Specification subject to change without notice.



9. Pad Layouts 、 Solder Reflow and Rework Recommendations

The dimension in the table below provide the recommended pad layout for each FSMD1206 device



Pad dimensions (millimeters)

| Device | A Nominal | B Nominal | C Nominal |
|---------------------|--------------|--------------|--------------|
| All FSMD1206 Series | 2.00 | 1.00 | 1.90 |

| Profile Feature | Pb-Free Assembly |
|---|------------------|
| Average Ramp-Up Rate (T _{smax} to T _p) | 3 °C/second max. |
| Preheat : | |
| Temperature Min (T _{smin}) | 150 °C |
| Temperature Max (T _{smax}) | 200 °C |
| Time (t _{smin} to t _{smax}) | 60-180 seconds |
| Time maintained above: | |
| Temperature(T _L) | 217 °C |
| Time (t _L) | 60-150 seconds |
| Peak/Classification 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. |

Solder reflow

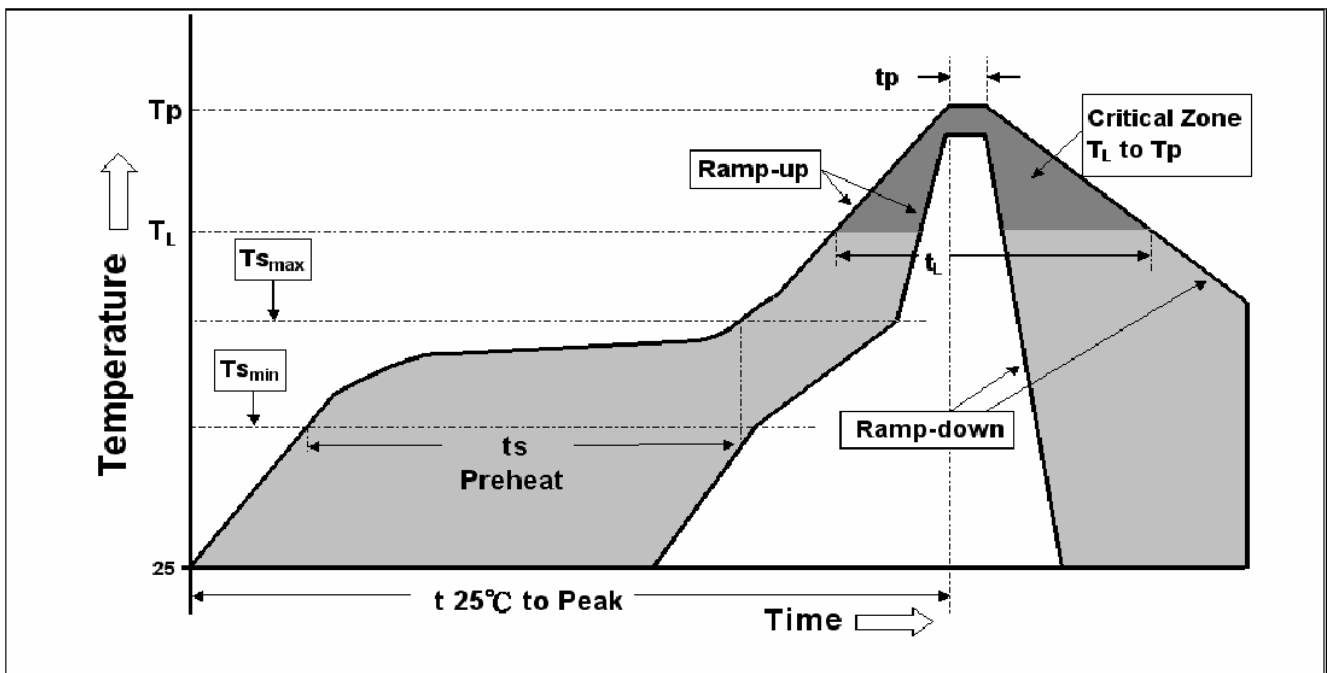
- ※ Due to "Lead Free" nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.
- 1. Recommended max past thickness > 0.25mm.
- 2. Devices can be cleaned using standard methods and aqueous solvent.
- 3. Rework use standard industry practices.
- 4. Storage Environment : < 30°C / 60%RH

Caution:

- 1. If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.
- 2. Devices are not designed to be wave soldered to the bottom side of the board.

Note 1: All temperatures refer to of the package, measured on the package body surface.

Reflow Profile



NOTE : Specification subject to change without notice.