



## Surface Mountable PTC Resettable Fuse: Lo Rho FSMD0805 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: 0.75~1.75A**
- (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

\*Note:FSMD150-0805RZ~FSMD175-0805RZ UL,C-UL and TÜV Pending.

### 3. Electrical Characteristics (23°C)

| Part Number    | Hold Current       | Trip Current       | Rated Voltage          | Max Current          | Typical Power      | Max Time to Trip |      | Resistance       |                   |
|----------------|--------------------|--------------------|------------------------|----------------------|--------------------|------------------|------|------------------|-------------------|
|                | I <sub>H</sub> , A | I <sub>T</sub> , A | V <sub>MAX</sub> , VDC | I <sub>MAX</sub> , A | P <sub>d</sub> , W | Current          | Time | R <sub>MIN</sub> | R <sub>1MAX</sub> |
|                |                    |                    |                        |                      |                    | A                | Sec  | Ohms             | Ohms              |
| FSMD075-0805RZ | 0.75               | 1.50               | 6                      | 100                  | 0.6                | 8.0              | 0.20 | 0.040            | 0.160             |
| FSMD110-0805RZ | 1.10               | 1.80               | 6                      | 100                  | 0.6                | 8.0              | 0.30 | 0.030            | 0.130             |
| FSMD125-0805RZ | 1.25               | 2.50               | 6                      | 100                  | 0.6                | 8.0              | 0.30 | 0.025            | 0.110             |
| FSMD150-0805RZ | 1.50               | 3.00               | 6                      | 100                  | 0.6                | 8.0              | 0.30 | 0.015            | 0.065             |
| FSMD175-0805RZ | 1.75               | 3.50               | 6                      | 100                  | 0.6                | 8.0              | 0.60 | 0.005            | 0.055             |

I<sub>H</sub>=Hold current-maximum current at which the device will not trip at 23°C still air.

I<sub>T</sub>=Trip current-minimum current at which the device will always trip at 23°C still air.

V<sub>MAX</sub>=Maximum voltage device can withstand without damage at it rated current.(I<sub>MAX</sub>)

I<sub>MAX</sub>= Maximum fault current device can withstand without damage at rated voltage (V<sub>MAX</sub>).

P<sub>d</sub>=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

R<sub>MIN</sub>=Minimum device resistance at 23°C prior to tripping.

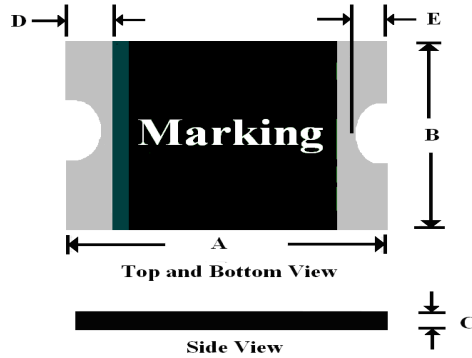
R<sub>1MAX</sub>=Maximum device resistance at 23°C measured 1 hour post trip.

Termination pad characteristics

Termination pad materials: Pure Tin

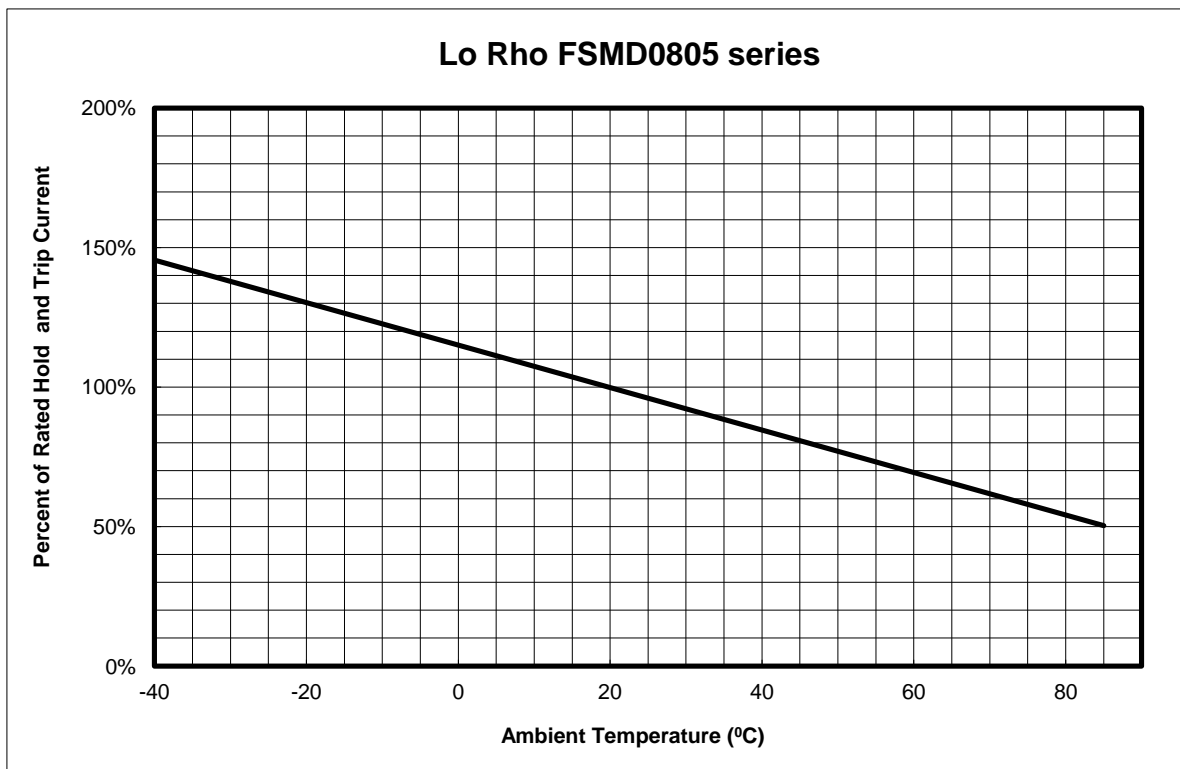


### 4. FSMD Product Dimensions (Millimeters)



| Part Number    | A    |      | B    |      | C    |      | D    |      | E    |      |
|----------------|------|------|------|------|------|------|------|------|------|------|
|                | Min  | Max  | Min  | Max  | Min  | Max  | Min  | Max  | Min  | Max  |
| FSMD075-0805RZ | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 0.75 | 0.20 | 0.60 | 0.10 | 0.45 |
| FSMD110-0805RZ | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 0.75 | 0.20 | 0.60 | 0.10 | 0.45 |
| FSMD125-0805RZ | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 0.75 | 0.20 | 0.60 | 0.10 | 0.45 |
| FSMD150-0805RZ | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 0.75 | 0.20 | 0.60 | 0.10 | 0.45 |
| FSMD175-0805RZ | 2.00 | 2.20 | 1.20 | 1.50 | 0.40 | 0.75 | 0.20 | 0.60 | 0.10 | 0.45 |

### 5. Thermal Derating Curve

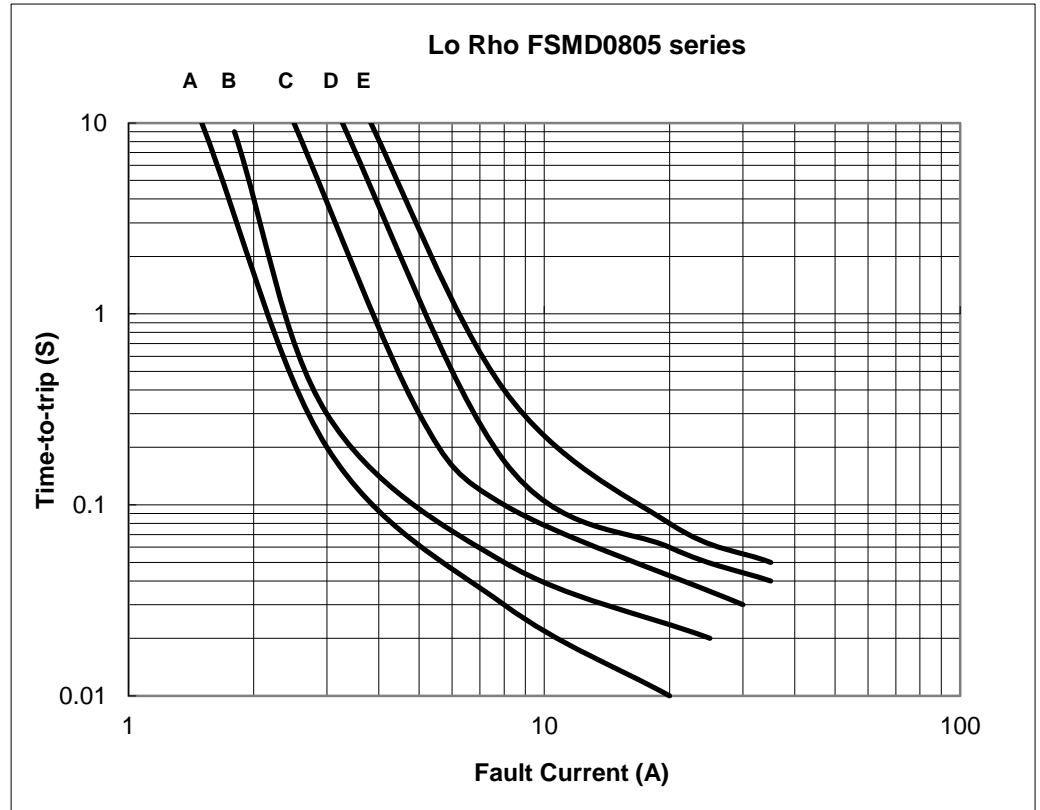


NOTE : Specification subject to change without notice.



### 6. Typical Time-To-Trip at 23°C

- A = FSMD075-0805RZ
- B = FSMD110-0805RZ
- C = FSMD125-0805RZ
- D = FSMD150-0805RZ
- E = FSMD175-0805RZ



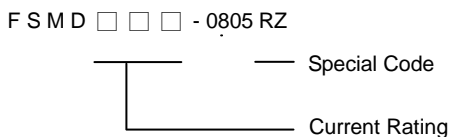
### 7. Material Specification

Terminal pad material: Pure Tin

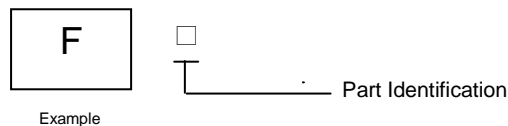
Soldering characteristics: Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

### 8. Part Numbering and Marking System

#### Part Numbering System



#### Part Marking System



- F = FSMD075-0805RZ
- H = FSMD110-0805RZ
- I = FSMD125-0805RZ
- J = FSMD150-0805RZ
- K = FSMD175-0805RZ

**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.

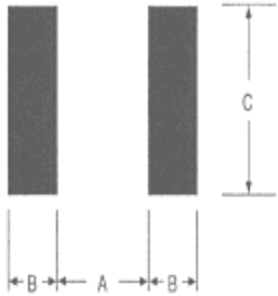
-Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

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 FSMD0805 device



**Pad dimensions (millimeters)**

| Device                   | A Nominal | B Nominal | C Nominal |
|--------------------------|-----------|-----------|-----------|
| <b>FSMD0805RZ Series</b> | 1.20      | 1.00      | 1.50      |

| Profile Feature   | Pb-Free Assembly |
|---|------------------|
| <b>Average Ramp-Up Rate (T<sub>smax</sub> to T<sub>p</sub>)</b> | 3 °C/second max. |
| <b>Preheat :</b>  |                  |
| Temperature Min (T <sub>smin</sub> )                            | 150 °C           |
| Temperature Max (T <sub>smax</sub> )                            | 200 °C           |
| Time (t <sub>smin</sub> to t <sub>smax</sub> )                  | 60-180 seconds   |
| <b>Time maintained above:</b>                                   |                  |
| Temperature(T <sub>L</sub> )                                    | 217 °C           |
| Time (t <sub>L</sub> )  | 60-150 seconds   |
| <b>Peak/Classification Temperature(T<sub>p</sub>) :</b>         | 260 °C           |
| <b>Time within 5°C of actual Peak :</b>                         |                  |
| Temperature (t <sub>p</sub> )                                   | 20-40 seconds    |
| <b>Ramp-Down Rate :</b>   | 6 °C/second max. |
| <b>Time 25 °C to Peak Temperature :</b>                         | 8 minutes max.   |

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

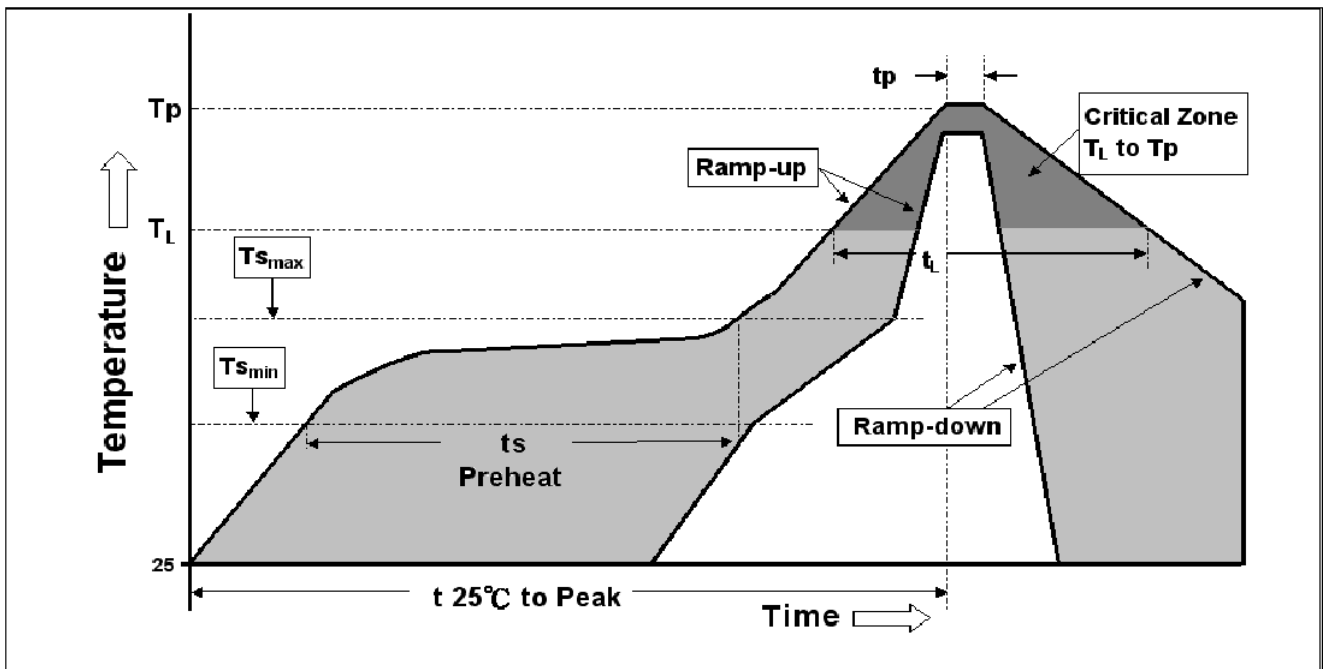
**Solder reflow**

- ※ 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.

### Reflow Profile



NOTE : Specification subject to change without notice.