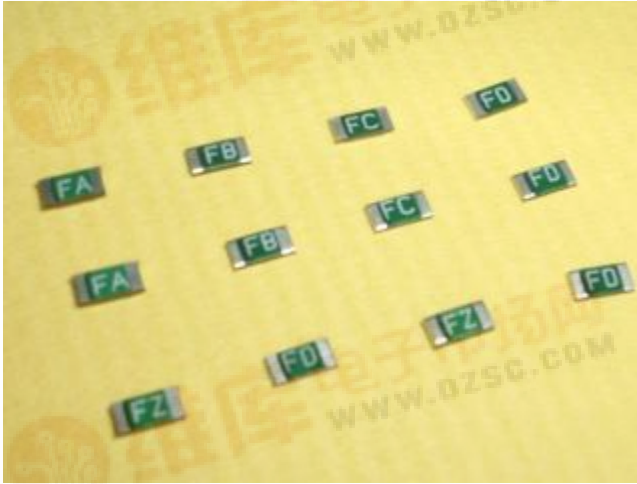


# Surface Mount PTC FSMD1206 Series



## ※ Lead Free Component

### Application:

All high-density boards

### Product Features:

- Small surface mount, Solid state
- Faster time to trip than standard SMD devices
- Lower resistance than standard SMD devices

**Operation Current:** 50mA~1.5A

**Maximum Voltage:** 6V~60V

**Temperature Range:** -40°C to 85°C

**Agency Recognition:** Pending

## Electrical Characteristics(23°C)

| Part Number  | Hold Current | Trip Current | Rated Voltage | Max Current | Typical Power | Max Time to Trip   |                    | Resistance Tolerance   |                      |
|--------------|--------------|--------------|---------------|-------------|---------------|--------------------|--------------------|------------------------|----------------------|
|              |              |              |               |             |               | Current            | Time               | R MIN                  | R1 MAX               |
|              |              |              |               |             |               | I <sub>H</sub> , A | I <sub>T</sub> , A | V <sub>MAX</sub> , Vdc | I <sub>MAX</sub> , A |
| FSMD005-1206 | 0.05         | 0.15         | 60            | 10          | 0.4           | 0.25               | 1.50               | 3.60                   | 50.00                |
| FSMD010-1206 | 0.10         | 0.25         | 60            | 10          | 0.4           | 0.50               | 1.00               | 1.60                   | 15.00                |
| FSMD020-1206 | 0.20         | 0.40         | 30            | 10          | 0.4           | 8.00               | 0.05               | 0.60                   | 2.50                 |
| FSMD035-1206 | 0.35         | 0.75         | 16            | 40          | 0.4           | 8.00               | 0.10               | 0.30                   | 1.20                 |
| FSMD050-1206 | 0.50         | 1.00         | 8             | 40          | 0.4           | 8.00               | 0.10               | 0.15                   | 0.70                 |
| FSMD075-1206 | 0.75         | 1.50         | 6             | 40          | 0.6           | 8.00               | 0.20               | 0.10                   | 0.29                 |
| FSMD100-1206 | 1.00         | 1.80         | 6             | 40          | 0.6           | 8.00               | 0.30               | 0.055                  | 0.210                |
| FSMD150-1206 | 1.50         | 3.00         | 6             | 40          | 0.8           | 8.00               | 1.00               | 0.040                  | 0.120                |

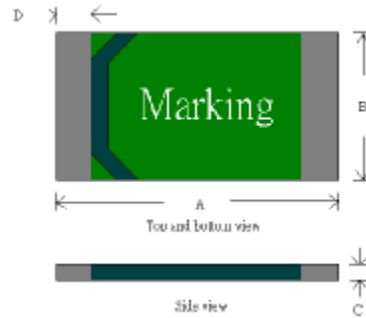
I<sub>H</sub>=Hold current-maximum current at which the device will not trip at 23°C still air.  
 I<sub>T</sub>=Trip current-minimum current at which the device will always trip at 23°C still air.  
 V<sub>MAX</sub>=Maximum voltage device can withstand without damage at it rated current.(I max)  
 I<sub>MAX</sub>= Maximum fault current device can withstand without damage at rated voltage (V max).  
 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 : solder-plated copper



# Surface Mount PTC FSMD1206 Series

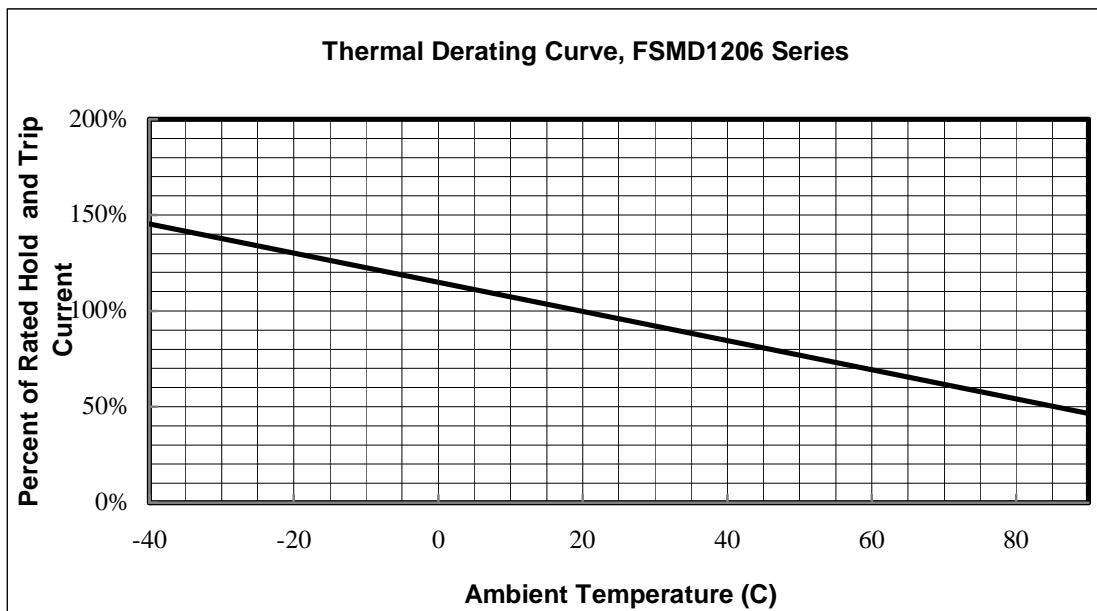


## FSMD Product Dimensions (Millimeters)



| Part Number  | A   |     | B    |      | C    |      | D    |
|--------------|-----|-----|------|------|------|------|------|
|              | Min | Max | Min  | Max  | Min  | Max  | Min  |
| FSMD005-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 |
| FSMD010-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 |
| FSMD020-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 |
| FSMD035-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.45 | 0.75 | 0.10 |
| FSMD050-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.25 | 0.55 | 0.10 |
| FSMD075-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.45 | 1.25 | 0.10 |
| FSMD100-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.75 | 1.25 | 0.10 |
| FSMD150-1206 | 3.0 | 3.5 | 1.50 | 1.80 | 0.80 | 1.80 | 0.10 |

## Thermal Derating Curve

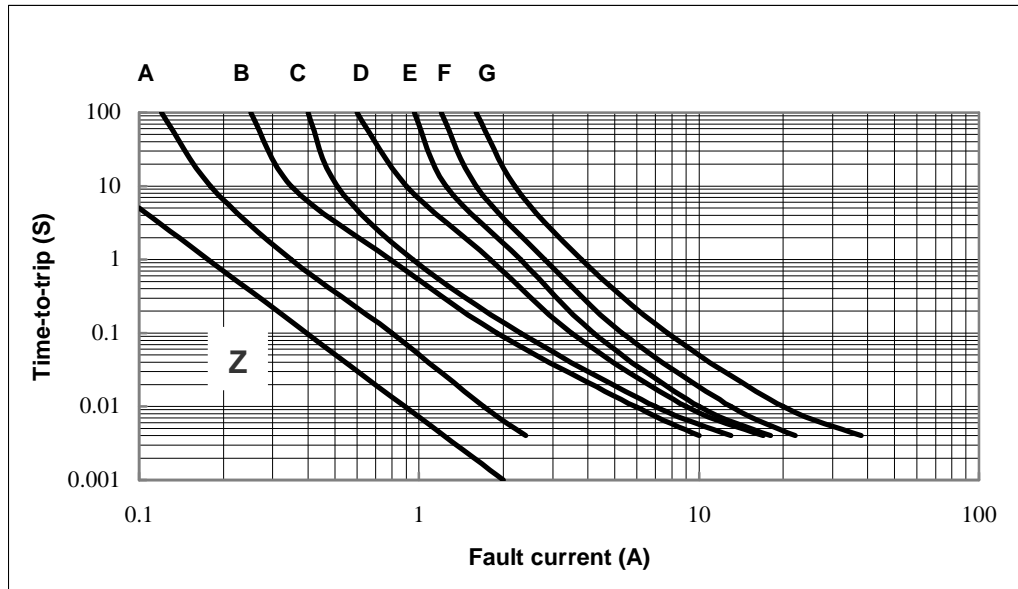


# Surface Mount PTC FSMD1206 Series

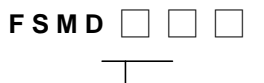


## Typical Time-To-Trip at 23°C

- Z =FSMD005-1206
- A =FSMD010-1206
- B =FSMD020-1206
- C =FSMD035-1206
- D =FSMD050-1206
- E =FSMD075-1206
- F =FSMD100-1206
- G =FSMD150-1206



## Part Numbering System

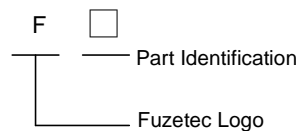


Current rating



Example

## Part Marking System



- FZ =FSMD005-1206
- FA =FSMD010-1206
- FB =FSMD020-1206
- FC =FSMD035-1206
- FD =FSMD050-1206
- FE =FSMD075-1206
- FF =FSMD100-1206
- FG=FSMD150-1206

## Standard Package

| P/N          | Pcs /Bag | Reel/Tape |
|--------------|----------|-----------|
| FSMD005-1206 | -----    | 4K        |
| FSMD010-1206 | -----    | 4K        |
| FSMD020-1206 | -----    | 4K        |
| FSMD035-1206 | -----    | 4K        |

| P/N          | Pcs /Bag | Reel/Tape |
|--------------|----------|-----------|
| FSMD050-1206 | -----    | 4K        |
| FSMD075-1206 | -----    | 4K        |
| FSMD100-1206 | -----    | 4K        |
| FSMD150-1206 | -----    | 4K        |

### Warning:



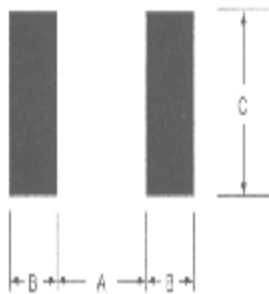
- Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

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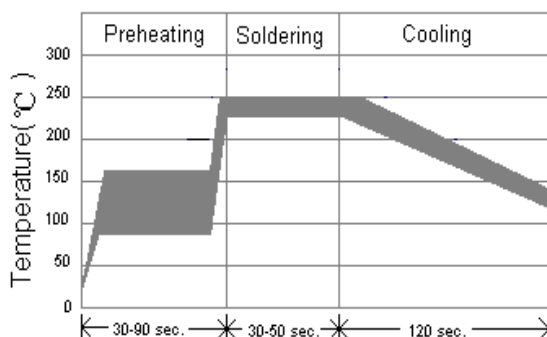
## Pad Layouts 、 Solder Reflow and Rework Recommendations

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



**Pad dimensions(millimeters)**

| Device       | A<br>Nominal | B<br>Nominal | C<br>Nominal |
|--------------|--------------|--------------|--------------|
| FSMD005-1206 | 2.00         | 1.00         | 1.90         |
| FSMD010-1206 | 2.00         | 1.00         | 1.90         |
| FSMD020-1206 | 2.00         | 1.00         | 1.90         |
| FSMD035-1206 | 2.00         | 1.00         | 1.90         |
| FSMD050-1206 | 2.00         | 1.00         | 1.90         |
| FSMD075-1206 | 2.00         | 1.00         | 1.90         |
| FSMD100-1206 | 2.00         | 1.00         | 1.90         |
| FSMD150-1206 | 2.00         | 1.00         | 1.90         |



### 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 reflow methods; IR , vapor phase oven, hot air oven.
2. The FSMD1206 Series are suitable for use with wave-solder application methods.
3. Recommended maximum paste thickness is 0.25mm.
4. Devices can be cleaned using standard industry methods and solvents.

### **CAUTION:**

**If reflow temperatures exceed the recommended Profile, devices may not meet the performance requirements.**

### **Rework:**

Use standard industry practices.