

## FEATURES

- 1812 size Surface Mount
- Application: All high-density boards
- Operation Current: 140mA ~ 1.6A
- Maximum Voltage: 6V ~ 60V
- Temperature Range: -40°C to 85°C
- RoHS Compliant

## AGENCY RECOGNITION

- UL (E211981)
- C-UL (E211981)
- TÜV (R50004084)

## ELECTRICAL CHARACTERISTICS (23°C)

| Part Number     | Hold Current | Trip Current | Rated Voltage   | Maximum Current | Typical Power | Max Time to Trip |       | Resistance Tolerance |            |
|-----------------|--------------|--------------|-----------------|-----------------|---------------|------------------|-------|----------------------|------------|
|                 | $I_H$ , A    | $I_T$ , A    | $V_{MAX}$ , Vdc | $I_{MAX}$ , A   | $P_d$ , W     | Current          | Time  | $R_{MIN}$            | $R_{1MAX}$ |
|                 | Amp          | Sec          | OHMS            | OHMS            |               |                  |       |                      |            |
| FSMD014-1812    | 0.14         | 0.30         | 60              | 10              | 0.8           | 8.0              | 0.008 | 1.20                 | 6.50       |
| FSMD020-1812    | 0.20         | 0.40         | 30              | 10              | 0.8           | 8.0              | 0.02  | 0.80                 | 5.00       |
| FSMD035-1812    | 0.35         | 0.70         | 16              | 40              | 0.8           | 8.0              | 0.10  | 0.32                 | 1.50       |
| FSMD050-1812    | 0.50         | 1.00         | 16              | 40              | 0.8           | 8.0              | 0.15  | 0.15                 | 1.00       |
| FSMD075-1812    | 0.75         | 1.50         | 16              | 40              | 0.8           | 8.0              | 0.20  | 0.11                 | 0.45       |
| FSMD110-1812    | 1.10         | 2.20         | 8               | 100             | 0.8           | 8.0              | 0.30  | 0.04                 | 0.21       |
| FSMD110-16-1812 | 1.10         | 1.95         | 16              | 40              | 0.8           | 8.0              | 0.50  | 0.04                 | 0.18       |
| FSMD125-1812    | 1.25         | 2.50         | 6               | 40              | 0.8           | 8.0              | 0.40  | 0.05                 | 0.14       |
| FSMD150-1812    | 1.50         | 3.00         | 6               | 40              | 0.8           | 8.0              | 0.50  | 0.04                 | 0.11       |
| FSMD160-1812    | 1.60         | 3.20         | 6               | 40              | 0.8           | 8.0              | 0.50  | 0.03                 | 0.10       |
| FSMD200-1812    | 2.00         | 3.50         | 8               | 40              | 0.8           | 8.0              | 2.00  | 0.02                 | 0.07       |

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

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

$V_{MAX}$ =Maximum voltage device can withstand without damage at its 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: Tin-plated copper

## FSMD PRODUCT DIMENSIONS (MILLIMETERS)

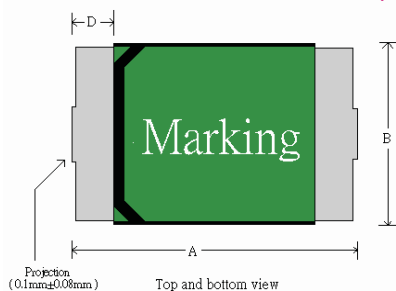


Figure 1

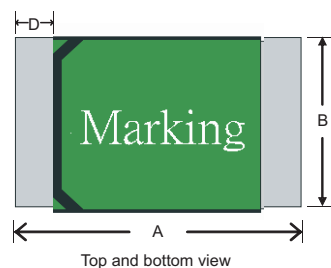
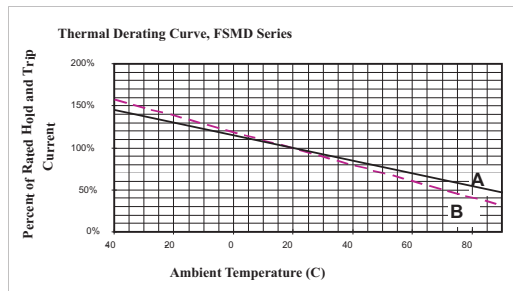


Figure 2



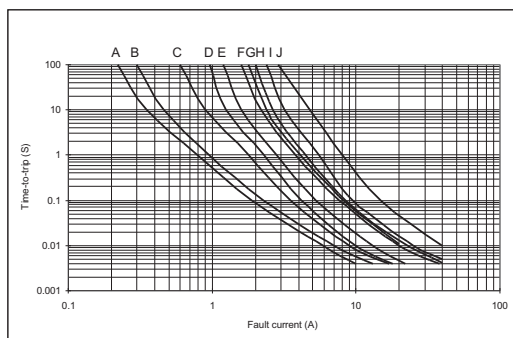
| Part Number     | A    |      | B    |      | C    |      | D    |
|-----------------|------|------|------|------|------|------|------|
|                 | Min  | Max  | Min  | Max  | Min  | Max  | Min  |
| FSMD014-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 0.90 | 0.30 |
| FSMD020-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 0.90 | 0.30 |
| FSMD035-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 0.70 | 0.30 |
| FSMD050-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.35 | 0.65 | 0.30 |
| FSMD075-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.35 | 0.65 | 0.30 |
| FSMD110-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.55 | 0.30 |
| FSMD110-16-2920 | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.90 | 0.30 |
| FSMD125-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.55 | 0.30 |
| FSMD150-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.55 | 0.30 |
| FSMD160-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.25 | 0.90 | 0.30 |
| FSMD200-2920    | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 0.90 | 0.30 |

**THERMAL PRODUCT DIMENSIONS (MILLIMETERS)**



A= FSMD 075, 110, 110-16, 125, 150  
160 & 200  
B= FSMD 014, 020, 035 & 050

**TYPICAL TIME-TO-TRIP AT 23°C**

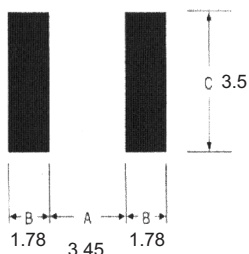


A = FSMD014  
B = FSMD020  
C = FSMD035  
D = FSMD050  
E = FSMD075  
F = FSMD110/110-16  
G = FSMD125  
H = FSMD150  
I = FSMD160  
J = FSMD200

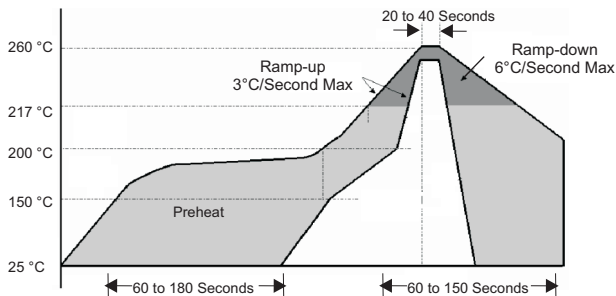
**PAD LAYOUTS, SOLDER REFLOW AND REWORK RECOMMENDATIONS**

The dimensions in the table below provide the recommended pad layout for each FSMD 1812 device

**NOMINAL PAD DIMENSIONS (MILLIMETERS)**



**SOLDER REFLOW**



**Solder Reflow**

Due to "Lead Free" nature, up to 40 seconds dwelling time for the soldering zone is strongly recommended.

1. Recommended reflow methods; IR, vapor phase oven, hot air oven.
2. The FSMD Series are suitable for use with wave-solder application methods. (Top side only)
3. Recommended maximum paste thickness is 0.25mm.
4. Devices can be cleaned by using standard industry methods and solvents.
5. Storage Environment: <30°C / 60%RH

**Caution:**

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

**Rework:**

Use standard industry practices.