

**Surface Mountable PTC Resettable Fuse: Lo Rho FSMD0603 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: 0.25~0.75A**
- (e) **Maximum Voltage: 6~9V**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL: Pending

C-UL: Pending

TÜV: Pending

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance	
						Current	Time	R _{MIN}	R _{1MAX}
	I _H , A	I _T , A	V _{MAX} , VDC	I _{MAX} , A	P _d , W	A	Sec	Ohms	Ohms
FSMD025-0603RZ	0.25	0.55	9	100	0.5	8.0	0.08	0.500	3.000
FSMD035-0603RZ	0.35	0.75	6	100	0.5	8.0	0.10	0.200	1.000
FSMD050-0603RZ	0.50	1.00	6	100	0.6	8.0	0.10	0.070	0.350
FSMD075-0603RZ	0.75	1.50	6	100	0.6	8.0	0.20	0.050	0.250

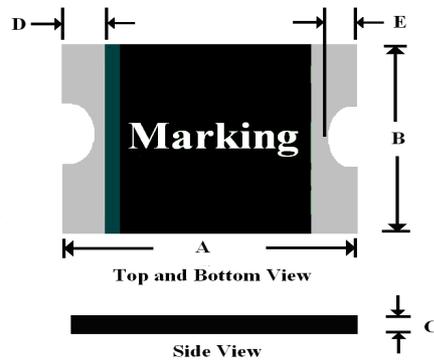
I_H=Hold current-maximum current at which the device will not trip at 23°C still air.I_T=Trip current-minimum current at which the device will always trip at 23°C still air.V_{MAX}=Maximum voltage device can withstand without damage at it rated current.(I_{MAX})I_{MAX}= Maximum fault current device can 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

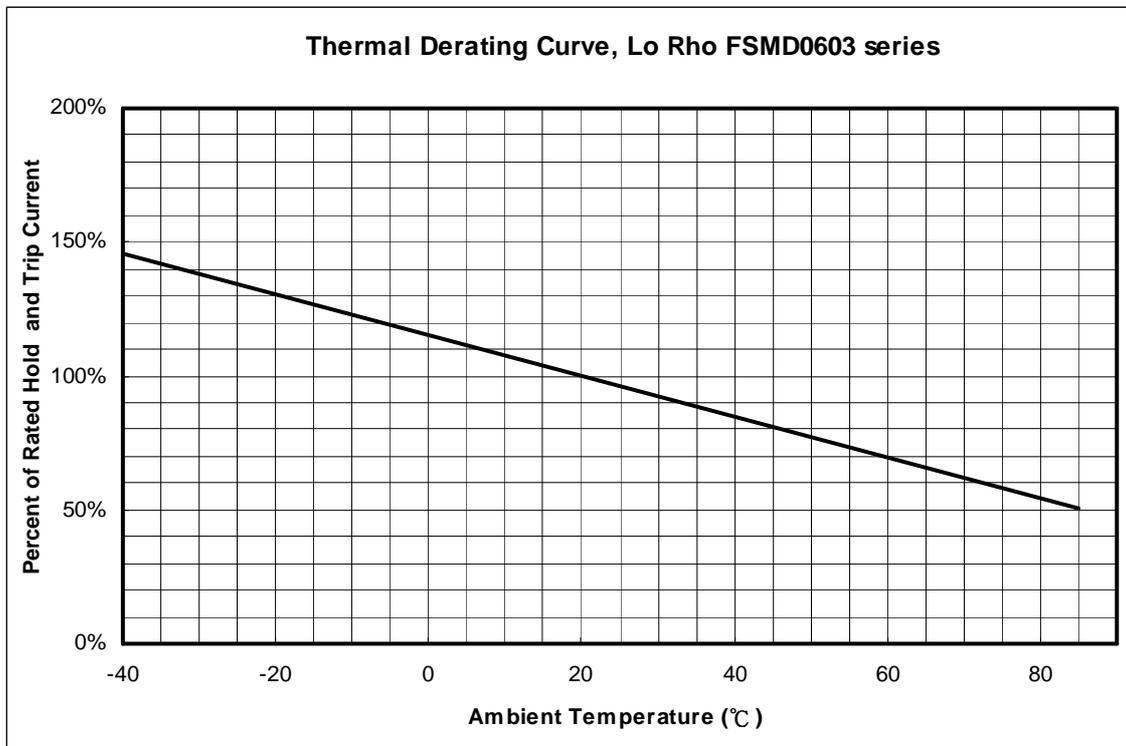


4. FSMD Product Dimensions (Millimeters)



Part Number	A		B		C		D		E	
	Min	Max								
FSMD025-0603RZ	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
FSMD035-0603RZ	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
FSMD050-0603RZ	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
FSMD075-0603RZ	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40

5. Thermal Derating Curve

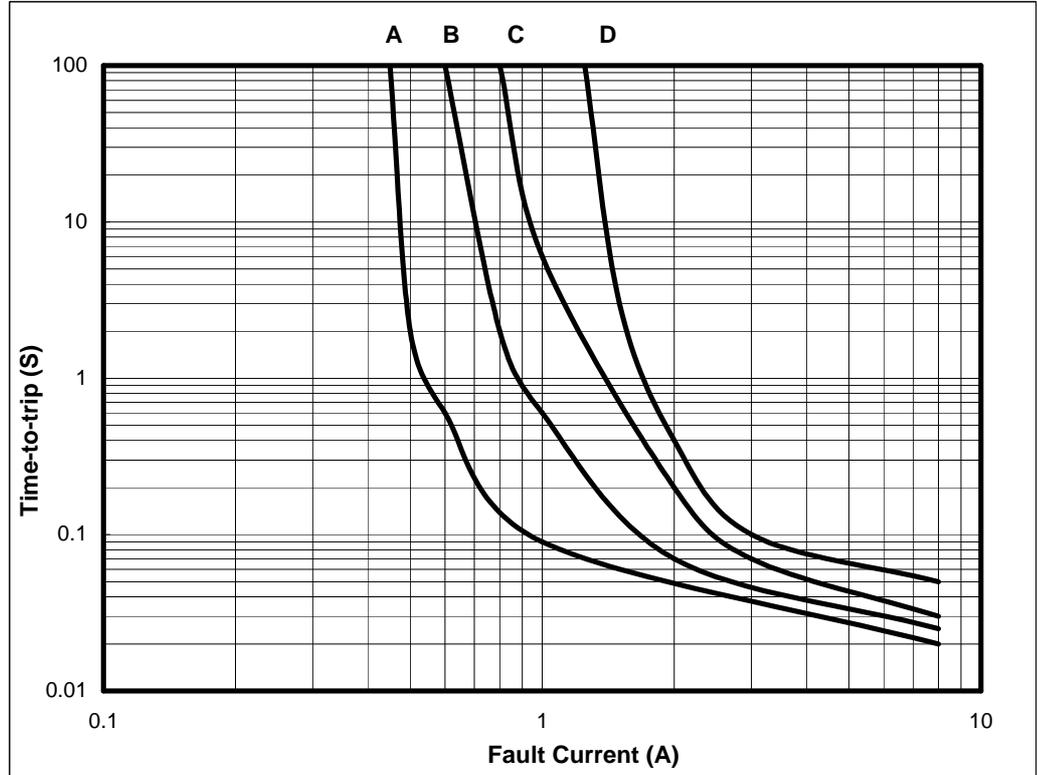


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A = FSMD025-0603RZ
- B = FSMD035-0603RZ
- C = FSMD050-0603RZ
- D = FSMD075-0603RZ



7. Material Specification

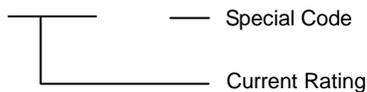
Terminal pad material: Pure Tin

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

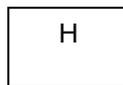
8. Part Numbering and Marking System

Part Numbering System

F S M D □ □ □ - 0603 RZ



Part Marking System



Example



Part Identification

- H = FSMD025-0603RZ
- I = FSMD035-0603RZ
- J = FSMD050-0603RZ
- K = FSMD075-0603RZ

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.

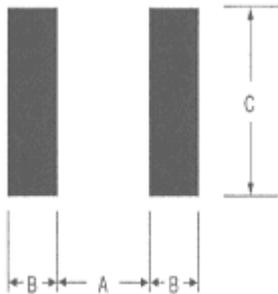
-Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

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 FSMD0603 device



Pad dimensions (millimeters)			
Device	A Nominal	B Nominal	C Nominal
FSMD0603	0.80	0.60	0.80

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.

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

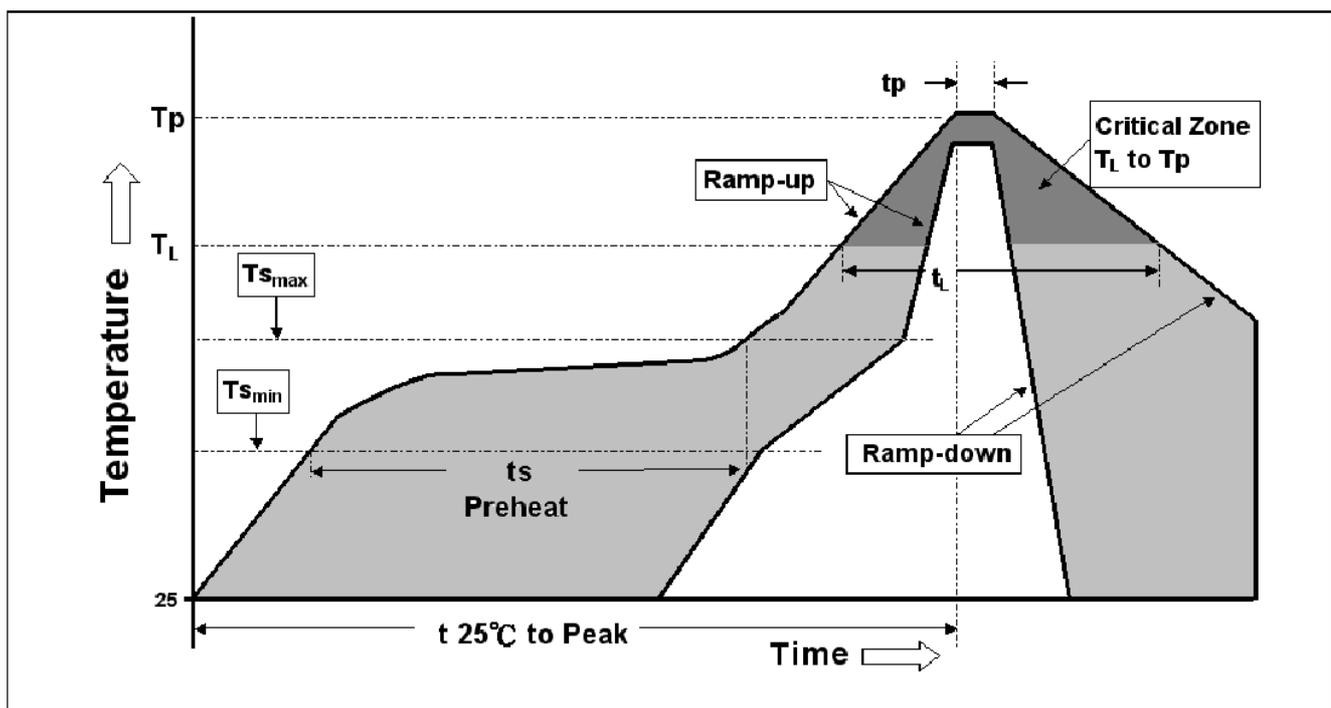
Solder reflow

- ※ 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.