

Resettable PPTC Fuse



Features

- Broadest range of surface mount devices available in the industry
- Faster time to trip than standard surface mount devices
- RoHS Compliant & Halogen Free



Agency Approval and Environmental Compliance

Agency	File Number	Regulation
UL, C-UL	E211981	
TÜV	In Process	

XMD0603 Series

Surface Mount Devices

Electrical Characteristics

Part Number	I_H	I_T	T_{Trip}	I_{MAX}	V_{MAX}	$P_{D Typ}$	R_{MIN}	$R1_{MAX}$
	A	A	sec/A	A	V	W	Ω	Ω
XMD0603-001	0.01	0.03	1.00/0.20	40	60	0.5	15.00	100.00
XMD0603-002	0.02	0.06	1.00/0.20	40	60	0.5	12.00	70.00
XMD0603-003	0.03	0.09	1.00/0.20	40	30	0.5	6.00	50.00
XMD0603-004	0.04	0.12	1.00/0.20	40	24	0.5	4.00	40.00
XMD0603-005	0.05	0.15	0.10/0.50	40	15	0.5	3.80	30.00
XMD0603-010	0.10	0.25	0.10/0.70	40	15	0.5	0.90	8.00
XMD0603-012	0.12	0.30	0.10/0.80	40	9	0.5	1.10	5.80
XMD0603-016	0.16	0.40	0.10/1.00	40	9	0.5	1.00	4.20
XMD0603-020	0.20	0.45	0.10/2.00	40	9	0.5	0.55	3.50

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.

T_{trip} =Maximum time to trip(s) at assigned current.

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

V_{MAX} =Maximum voltage device can withstand without damage at its rated current.

$P_{D Typ}$ =Typical power dissipated from device when in tripped state in 23°C still air environment.

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

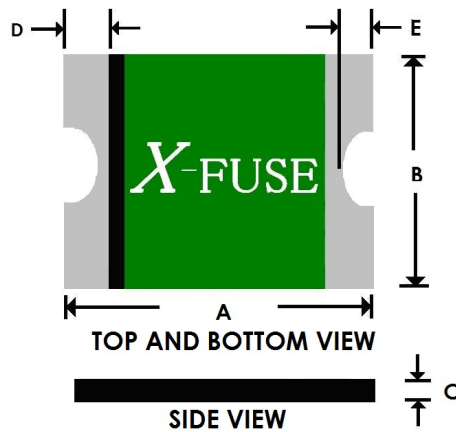
$R1_{MAX}$ =Maximum device resistance at 23°C, 1 hour after tripping .

Resettable PPTC Fuse



Product Dimensions (Millimeter)

Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
XMD0603-001	1.40	1.80	0.45	1.00	0.35	0.85	0.10	0.50	0.08	0.40
XMD0603-002	1.40	1.80	0.45	1.00	0.35	0.85	0.10	0.50	0.08	0.40
XMD0603-003	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
XMD0603-004	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
XMD0603-005	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
XMD0603-010	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
XMD0603-012	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
XMD0603-016	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40
XMD0603-020	1.40	1.80	0.45	1.00	0.35	0.75	0.10	0.50	0.08	0.40



Thermal Derating Chart-I_H (A)

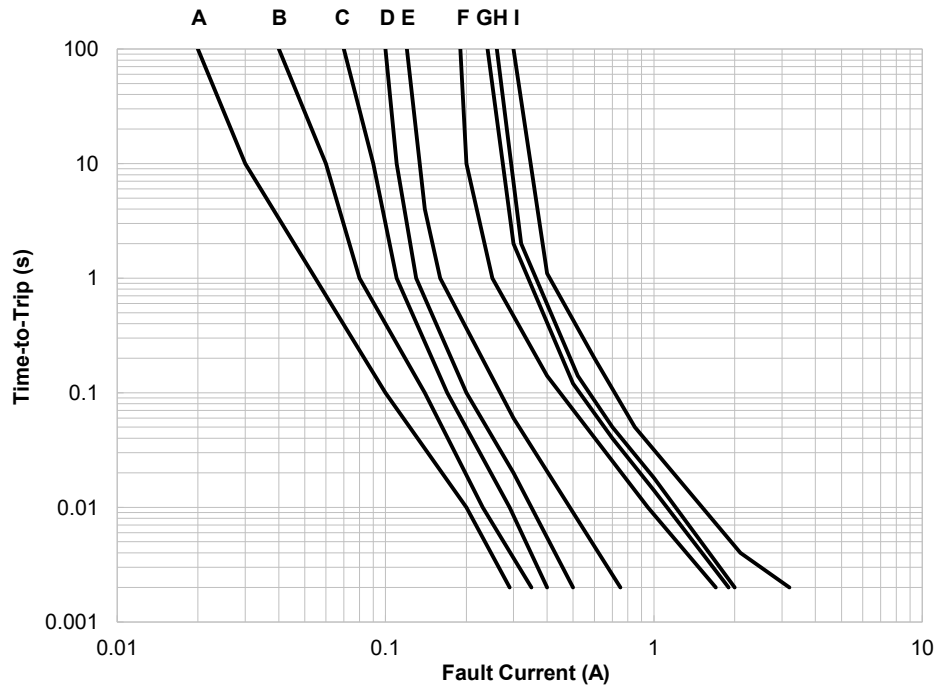
Part Number	Maximum ambient operating Temperature(°C)									
	-40	-20	0	23	30	40	50	60	70	85
XMD0603-001	0.015	0.014	0.012	0.010	0.009	0.008	0.007	0.006	0.005	0.004
XMD0603-002	0.030	0.028	0.024	0.020	0.018	0.016	0.014	0.012	0.010	0.008
XMD0603-003	0.044	0.041	0.036	0.030	0.027	0.024	0.021	0.018	0.015	0.011
XMD0603-004	0.060	0.056	0.048	0.040	0.036	0.032	0.028	0.024	0.020	0.016
XMD0603-005	0.073	0.069	0.060	0.050	0.045	0.040	0.035	0.030	0.026	0.019
XMD0603-010	0.145	0.137	0.119	0.100	0.089	0.080	0.070	0.060	0.051	0.038
XMD0603-012	0.174	0.164	0.143	0.120	0.107	0.096	0.084	0.072	0.061	0.046
XMD0603-016	0.232	0.219	0.190	0.160	0.142	0.128	0.112	0.096	0.082	0.061
XMD0603-020	0.290	0.274	0.238	0.200	0.178	0.160	0.140	0.120	0.102	0.076

Resettable PPTC Fuse

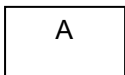


Typical Time-To-Trip at 23°C

- A = XMD0603-001
- B = XMD0603-002
- C = XMD0603-003
- D = XMD0603-004
- E = XMD0603-005
- F = XMD0603-010
- G = XMD0603-012
- H = XMD0603-016
- I = XMD0603-020



Marking System



Example



Part Identification

- X = XMD0603-001 D = XMD0603-010
- Y = XMD0603-002 E = XMD0603-012
- Z = XMD0603-003 F = XMD0603-016
- A = XMD0603-004 G = XMD0603-020
- B = XMD0603-005

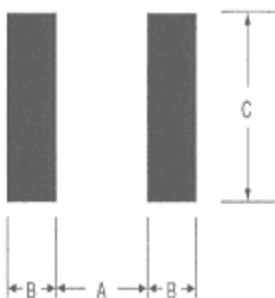
Package Information

Tape & Reel:

XMD0603-001~XMD0603-020 -----4000pcs per reel

Pad Layouts

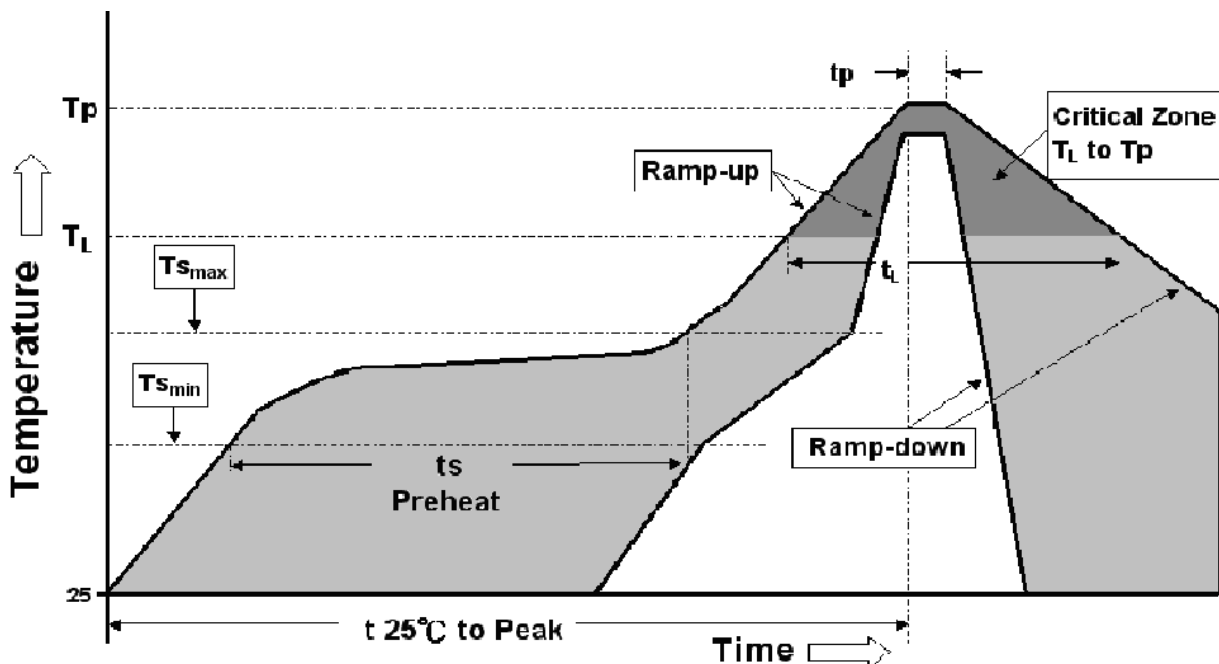
The dimension in the table below provide the recommended pad layout for each XMD0603 device



Pad dimensions (millimeters)

Device	A Nominal	B Nominal	C Nominal
XMD0603 Series	0.80	0.60	0.80

Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Tsmmax to Tp)	3 °C/second max.
Preheat :	
-Temperature Min (Tsmmin)	150 °C
-Temperature Max (Tsmmax)	200 °C
-Time (tsmin to tsmax)	60-180 seconds
Time maintained above:	
-Temperature(Tl)	217 °C
-Time (tL)	60-150 seconds
Peak/Classification Temperature(Tp)	260 °C
Time within 5°C of actual Peak :	
Temperature (tp)	20-40 seconds
Ramp-Down Rate :	6 °C/second max.
Time 25 °C to Peak Temperature :	8 minutes max.

- Recommended solder paste thickness > 0.25mm.
- Devices cleansing applies standard methods and aqueous solution.
- Use standard industry practices for rework.
- Storage condition : < 30°C / 60%RH

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

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Note 3: Devices are not designed to be wave soldered to the bottom side of the board.

Caution : Operation beyond the specified maximum ratings or misuse can result in damage and possible electrical arcing and/or flame.

PPTC device are designed for occasional overcurrent protection. Not for continuously overcurrent circumstance and/or prolonged trip are not anticipated.

Keep PPTC device away from chemical solvent contact. Prolonged contact will damage the device performance.