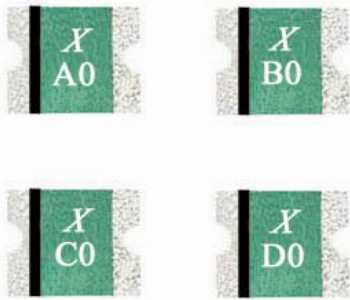


# Resettable PPTC Fuse



## Features

- Broadest range of surface mount devices available in the industry
- Faster time to trip than standard surface mount devices
- Available in lead-free version

## Agency Approval and Environmental Compliance

Agency	File Number	Regulation
UL, C-UL	E346046	
TÜV	R50213231	

## XMD1210 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	A/S	A	V	W	$\Omega$	$\Omega$
<b>XMD1210-005</b>	0.05	0.15	0.25/3.00	10	60	0.6	3.600	50.00
<b>XMD1210-010</b>	0.10	0.25	0.50/1.50	10	60	0.6	1.600	15.00
<b>XMD1210-020</b>	0.20	0.40	8.00/0.02	10	30	0.6	0.800	5.000
<b>XMD1210-035</b>	0.35	0.70	8.00/0.20	40	16	0.6	0.320	1.300
<b>XMD1210-050</b>	0.50	1.00	8.00/0.10	40	16	0.6	0.250	0.900
<b>XMD1210-075</b>	0.75	1.50	8.00/0.10	40	8	0.6	0.130	0.400
<b>XMD1210-110</b>	1.10	2.20	8.00/0.30	100	6	0.8	0.060	0.210
<b>XMD1210-150</b>	1.50	3.00	8.00/0.50	100	6	0.8	0.040	0.110
<b>XMD1210-175</b>	1.75	3.50	8.00/0.60	100	6	0.8	0.020	0.080
<b>XMD1210-200</b>	2.00	4.00	8.00/1.00	100	6	0.8	0.015	0.070

$I_H$ =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.

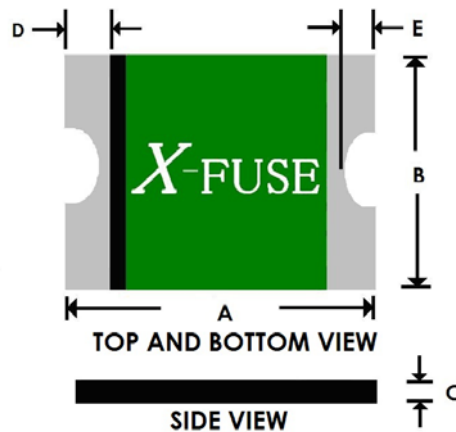
$R1_{MAX}$ =Maximum device resistance at 23°C, 1 hour after tripping .

# Resettable PPTC Fuse



## Product Dimensions (Millimeter)

Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<b>XMD1210-005</b>	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
<b>XMD1210-010</b>	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
<b>XMD1210-020</b>	3.00	3.43	2.35	2.80	0.40	0.85	0.25	0.75	0.10	0.45
<b>XMD1210-035</b>	3.00	3.43	2.35	2.80	0.40	0.80	0.25	0.75	0.10	0.45
<b>XMD1210-050</b>	3.00	3.43	2.35	2.80	0.30	0.75	0.25	0.75	0.10	0.45
<b>XMD1210-075</b>	3.00	3.43	2.35	2.80	0.30	0.70	0.25	0.75	0.10	0.45
<b>XMD1210-110</b>	3.00	3.43	2.35	2.80	0.60	1.00	0.25	0.75	0.10	0.45
<b>XMD1210-150</b>	3.00	3.43	2.35	2.80	0.50	0.90	0.25	0.75	0.10	0.45
<b>XMD1210-175</b>	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45
<b>XMD1210-200</b>	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45



## Thermal Derating Chart- $I_H$ (A)

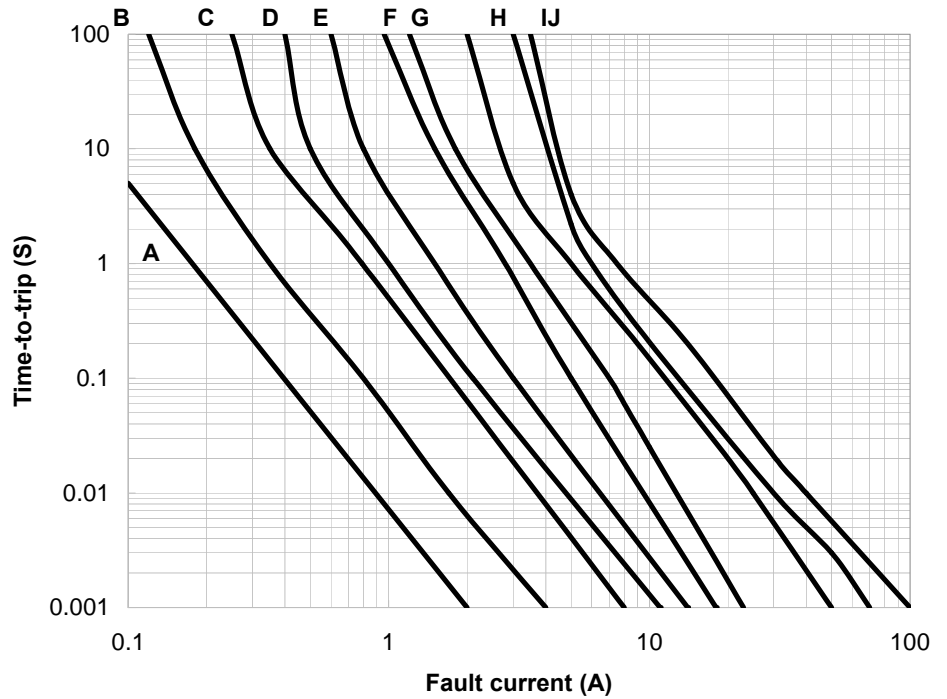
Part Number	Maximum ambient operating Temperature(°C)									
	-40	-20	0	23	30	40	50	60	70	85
<b>XMD1210-005</b>	0.07	0.07	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.02
<b>XMD1210-010</b>	0.15	0.13	0.12	0.10	0.09	0.08	0.08	0.06	0.06	0.05
<b>XMD1210-020</b>	0.29	0.26	0.23	0.20	0.18	0.17	0.15	0.13	0.12	0.09
<b>XMD1210-035</b>	0.51	0.46	0.40	0.35	0.32	0.29	0.26	0.22	0.21	0.16
<b>XMD1210-050</b>	0.73	0.66	0.58	0.50	0.46	0.42	0.38	0.32	0.30	0.23
<b>XMD1210-075</b>	1.10	0.99	0.86	0.75	0.69	0.62	0.56	0.48	0.44	0.35
<b>XMD1210-110</b>	1.60	1.45	1.27	1.10	1.01	0.91	0.83	0.70	0.65	0.51
<b>XMD1210-150</b>	2.18	1.98	1.73	1.50	1.38	1.25	1.13	0.96	0.89	0.69
<b>XMD1210-175</b>	2.54	2.31	2.01	1.75	1.61	1.45	1.31	1.12	1.03	0.81
<b>XMD1210-200</b>	2.90	2.64	2.30	2.00	1.84	1.66	1.50	1.28	1.18	0.92

# Resettable PPTC Fuse

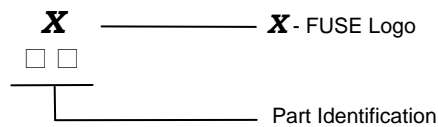
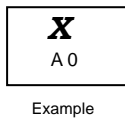


## Typical Time-To-Trip at 23°C

- A = XMD1210-005
- B = XMD1210-010
- C = XMD1210-020
- D = XMD1210-035
- E = XMD1210-050
- F = XMD1210-075
- G = XMD1210-110
- H = XMD1210-150
- I = XMD1210-175
- J = XMD1210-200



## Marking System



# Resettable PPTC Fuse



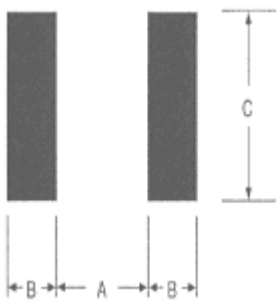
## Package Information

### Tape & Reel:

- XMD1210-005~XMD1210-020 -----3000pcs per reel
- XMD1210-035~XMD1210-075 -----4000pcs per reel
- XMD1210-110~XMD1210-200 -----3000pcs per reel

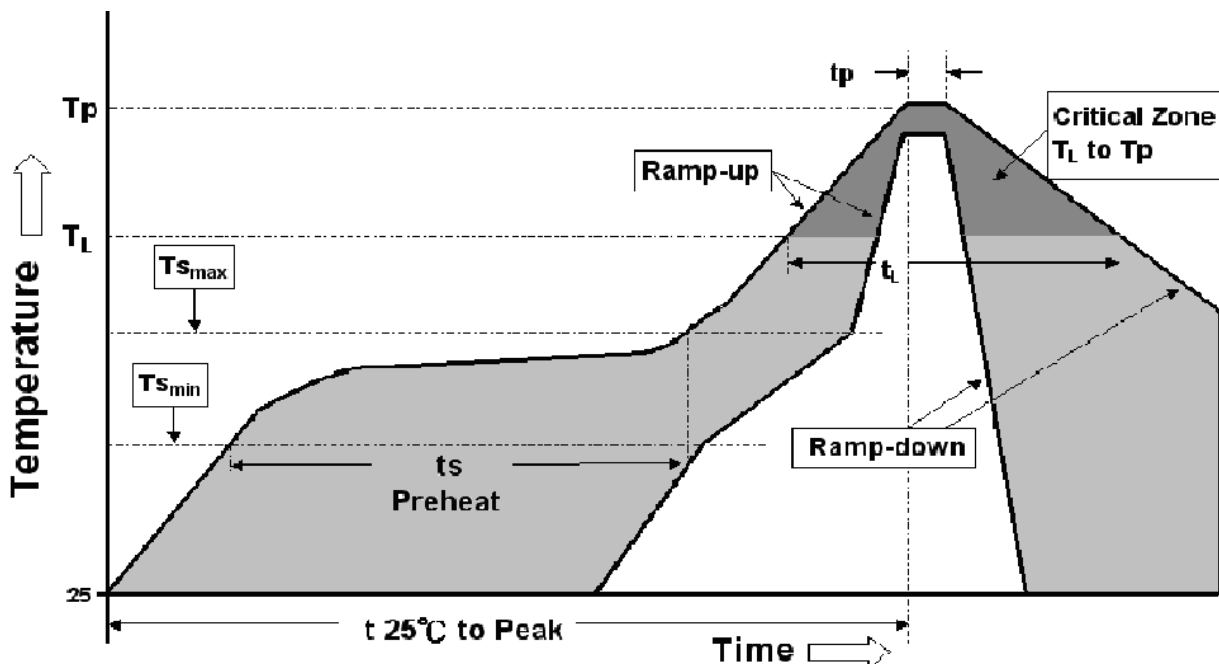
## Pad Layouts

The dimension in the table below provide the recommended pad layout for each XSMD1210 device



Pad dimensions (millimeters)			
Device	A Nominal	B Nominal	C Nominal
XMD1210 series	2.00	1.00	2.80

## Soldering Parameters



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.

- 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.