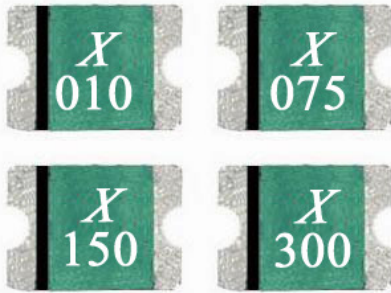


# Resettable PPTC Fuse



## 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	R50213367 R50217408	

## XMD1812 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	$\Omega$	$\Omega$
XMD1812-010	0.10	0.30	8.0/0.020	10	60	0.8	1.600	15.00
XMD1812-014	0.14	0.30	8.0/0.008	100	60	0.8	1.200	6.500
XMD1812-020	0.20	0.40	8.0/0.020	100	30	0.8	0.800	5.000
XMD1812-035	0.35	0.70	8.0/0.100	40	16	0.8	0.320	1.500
XMD1812-050	0.50	1.00	8.0/0.150	40	16	0.8	0.150	1.000
XMD1812-075	0.75	1.50	8.0/0.200	40	16	0.8	0.110	0.450
XMD1812-075-24	0.75	1.50	8.0/0.200	40	24	1.0	0.110	0.290
XMD1812-075-33	0.75	1.50	8.0/0.200	40	33	1.0	0.110	0.400
XMD1812-110	1.10	2.20	8.0/0.300	100	8	0.8	0.040	0.210
XMD1812-110-16	1.10	1.95	8.0/0.500	100	16	0.8	0.040	0.180
XMD1812-110-24	1.10	2.20	8.0/0.500	100	24	1.0	0.060	0.200
XMD1812-125	1.25	2.50	8.0/0.400	40	6	0.8	0.050	0.140
XMD1812-150	1.50	3.00	8.0/0.500	100	8	0.8	0.040	0.110
XMD1812-150-12	1.50	3.00	8.0/0.500	100	12	1.0	0.040	0.110
XMD1812-150-24	1.50	3.00	8.0/1.500	100	24	1.0	0.040	0.120
XMD1812-160	1.60	3.20	8.0/0.500	100	8	0.8	0.030	0.100
XMD1812-160-12	1.60	3.20	8.0/1.000	100	12	1.0	0.030	0.100
XMD1812-160-16	1.60	3.20	8.0/1.000	100	16	1.0	0.030	0.100

# Resettable PPTC Fuse

<b>XMD1812-200</b>	2.00	3.50	8.0/2.000	100	8	1.0	0.020	0.070
<b>XMD1812-260</b>	2.60	5.00	8.0/2.500	100	6	1.0	0.015	0.047
<b>XMD1812-260-13</b>	2.60	5.00	8.0/5.000	100	13.2	1.3	0.015	0.050
<b>XMD1812-260-16</b>	2.60	5.00	8.0/5.000	100	16	1.3	0.015	0.050
<b>XMD1812-300</b>	3.00	5.00	8.0/4.000	100	6	1.0	0.012	0.040

$I_H$ =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.

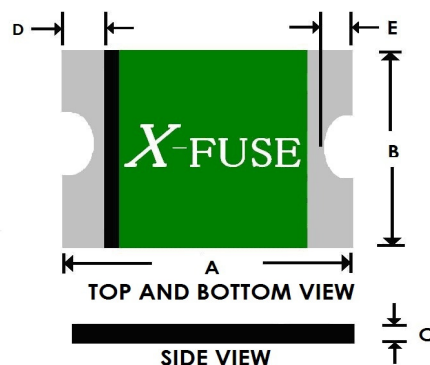
$P_{D Typ}$ =Typical power dissipated from device when in tripped state in 23°C still air environment.

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

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

## Product Dimensions (Millimeter)

Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<b>XMD1812-010</b>	4.37	4.73	3.07	3.41	0.60	0.90	0.25	0.95	0.25	0.65
<b>XMD1812-014</b>	4.37	4.73	3.07	3.41	0.60	0.90	0.25	0.95	0.25	0.65
<b>XMD1812-020</b>	4.37	4.73	3.07	3.41	0.60	0.90	0.25	0.95	0.25	0.65
<b>XMD1812-035</b>	4.37	4.73	3.07	3.41	0.40	0.70	0.25	0.95	0.25	0.65
<b>XMD1812-050</b>	4.37	4.73	3.07	3.41	0.35	0.65	0.25	0.95	0.25	0.65
<b>XMD1812-075</b>	4.37	4.73	3.07	3.41	0.35	0.65	0.25	0.95	0.25	0.65
<b>XMD1812-075-24</b>	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
<b>XMD1812-075-33</b>	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
<b>XMD1812-110</b>	4.37	4.73	3.07	3.41	0.25	0.55	0.25	0.95	0.25	0.65
<b>XMD1812-110-16</b>	4.37	4.73	3.07	3.41	0.25	0.55	0.25	0.95	0.25	0.65
<b>XMD1812-110-24</b>	4.37	4.73	3.07	3.41	0.80	1.30	0.25	0.95	0.25	0.65
<b>XMD1812-125</b>	4.37	4.73	3.07	3.41	0.25	0.55	0.25	0.95	0.25	0.65
<b>XMD1812-150</b>	4.37	4.73	3.07	3.41	0.25	0.55	0.25	0.95	0.25	0.65
<b>XMD1812-150-12</b>	4.37	4.73	3.07	3.41	0.60	1.10	0.25	0.95	0.25	0.65
<b>XMD1812-150-24</b>	4.37	4.73	3.07	3.41	0.60	1.55	0.25	0.95	0.25	0.65
<b>XMD1812-160</b>	4.37	4.73	3.07	3.41	0.25	0.90	0.25	0.95	0.25	0.65
<b>XMD1812-160-12</b>	4.37	4.73	3.07	3.41	0.60	1.35	0.25	0.95	0.25	0.65
<b>XMD1812-160-16</b>	4.37	4.73	3.07	3.41	0.60	1.35	0.25	0.95	0.25	0.65
<b>XMD1812-200</b>	4.37	4.73	3.07	3.41	0.55	1.20	0.25	0.95	0.25	0.65
<b>XMD1812-260</b>	4.37	4.73	3.07	3.41	0.55	1.20	0.25	0.95	0.25	0.65
<b>XMD1812-260-13</b>	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
<b>XMD1812-260-16</b>	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
<b>XMD1812-300</b>	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65



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

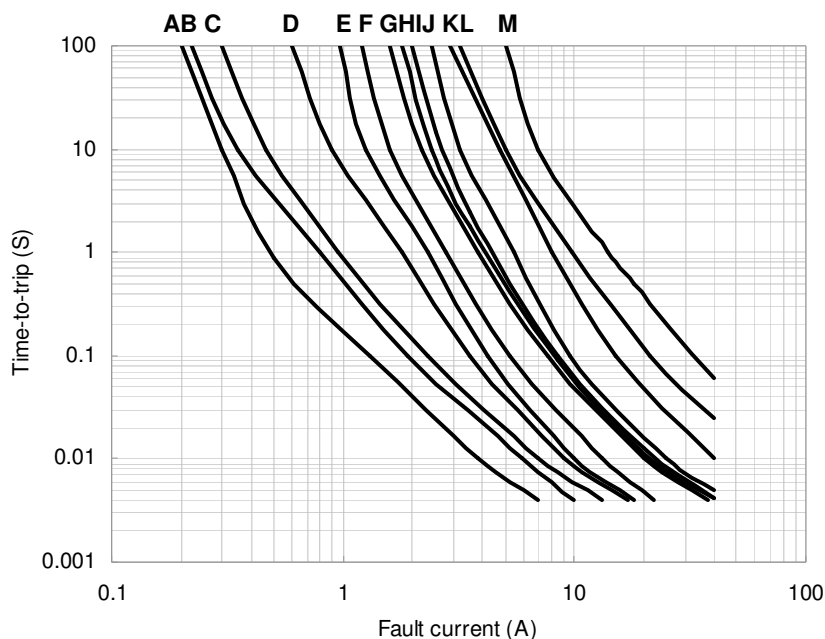
Part Number	Maximum ambient operating Temperature(°C)									
	-40	-20	0	23	30	40	50	60	70	85
<b>XMD1812-010</b>	0.16	0.14	0.12	0.10	0.09	0.09	0.08	0.07	0.07	0.06
<b>XMD1812-014</b>	0.22	0.19	0.17	0.14	0.13	0.12	0.11	0.10	0.09	0.08
<b>XMD1812-020</b>	0.31	0.27	0.24	0.20	0.19	0.17	0.16	0.14	0.13	0.11
<b>XMD1812-035</b>	0.55	0.47	0.41	0.35	0.33	0.30	0.28	0.25	0.23	0.20
<b>XMD1812-050</b>	0.79	0.68	0.59	0.50	0.47	0.44	0.40	0.36	0.33	0.28
<b>XMD1812-075</b>	1.09	1.01	0.89	0.75	0.70	0.65	0.59	0.54	0.49	0.42
<b>XMD1812-075-24</b>	1.09	1.01	0.89	0.75	0.70	0.65	0.59	0.54	0.49	0.42
<b>XMD1812-075-33</b>	1.09	1.01	0.89	0.75	0.70	0.65	0.59	0.54	0.49	0.42
<b>XMD1812-110</b>	1.60	1.49	1.30	1.10	1.02	0.96	0.87	0.79	0.72	0.62
<b>XMD1812-110-16</b>	1.60	1.49	1.30	1.10	1.02	0.96	0.87	0.79	0.72	0.62
<b>XMD1812-110-24</b>	1.60	1.49	1.30	1.10	1.02	0.96	0.87	0.79	0.72	0.62
<b>XMD1812-125</b>	1.96	1.69	1.48	1.25	1.16	1.09	0.99	0.90	0.81	0.70
<b>XMD1812-150</b>	2.18	2.03	1.77	1.50	1.40	1.31	1.19	1.08	0.98	0.84
<b>XMD1812-150-12</b>	2.18	2.03	1.77	1.50	1.40	1.31	1.19	1.08	0.98	0.84
<b>XMD1812-150-24</b>	2.18	2.03	1.77	1.50	1.40	1.31	1.19	1.08	0.98	0.84
<b>XMD1812-160</b>	2.32	2.16	1.89	1.60	1.49	1.39	1.26	1.15	1.04	0.90
<b>XMD1812-160-12</b>	2.32	2.16	1.89	1.60	1.49	1.39	1.26	1.15	1.04	0.90
<b>XMD1812-160-16</b>	2.32	2.16	1.89	1.60	1.49	1.39	1.26	1.15	1.04	0.90
<b>XMD1812-200</b>	2.90	2.70	2.36	2.00	1.86	1.74	1.58	1.44	1.30	1.12
<b>XMD1812-260</b>	3.77	3.51	3.07	2.60	2.42	2.26	2.05	1.87	1.69	1.46
<b>XMD1812-260-13</b>	3.77	3.51	3.07	2.60	2.42	2.26	2.05	1.87	1.69	1.46
<b>XMD1812-260-16</b>	3.77	3.51	3.07	2.60	2.42	2.26	2.05	1.87	1.69	1.46
<b>XMD1812-300</b>	4.35	4.05	3.54	3.00	2.79	2.61	2.37	2.16	1.95	1.68

# Resettable PPTC Fuse

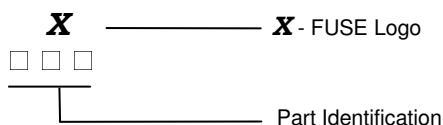
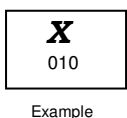


## Typical Time-To-Trip at 23 °C

- A = XMD1812-010
- B = XMD1812-014
- C = XMD1812-020
- D = XMD1812-035
- E = XMD1812-050
- F = XMD1812-075 / XMD1812-075-24 / XMD1812-075-33
- G = XMD1812-110 / XMD1812-110-16 / XMD1812-110-24
- H = XMD1812-125
- I = XMD1812-150 / XMD1812-150-12 / XMD1812-150-24
- J = XMD1812-160 / XMD1812-160-12 / XMD1812-160-16
- K = XMD1812-200
- L = XMD1812-260 / XMD1812-260-13 / XMD1812-260-16
- M = XMD1812-300



## Marking System



## Package Information

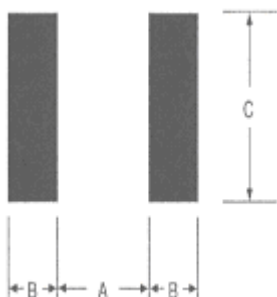
### Tape & Reel:

XMD1812-010~XMD1812-260 -----2000pcs per reel

XMD1812-075-24, XMD1812-075-33, XMD1812-110-24, XMD1812-260-13~XMD1812-300-----1500pcs per reel

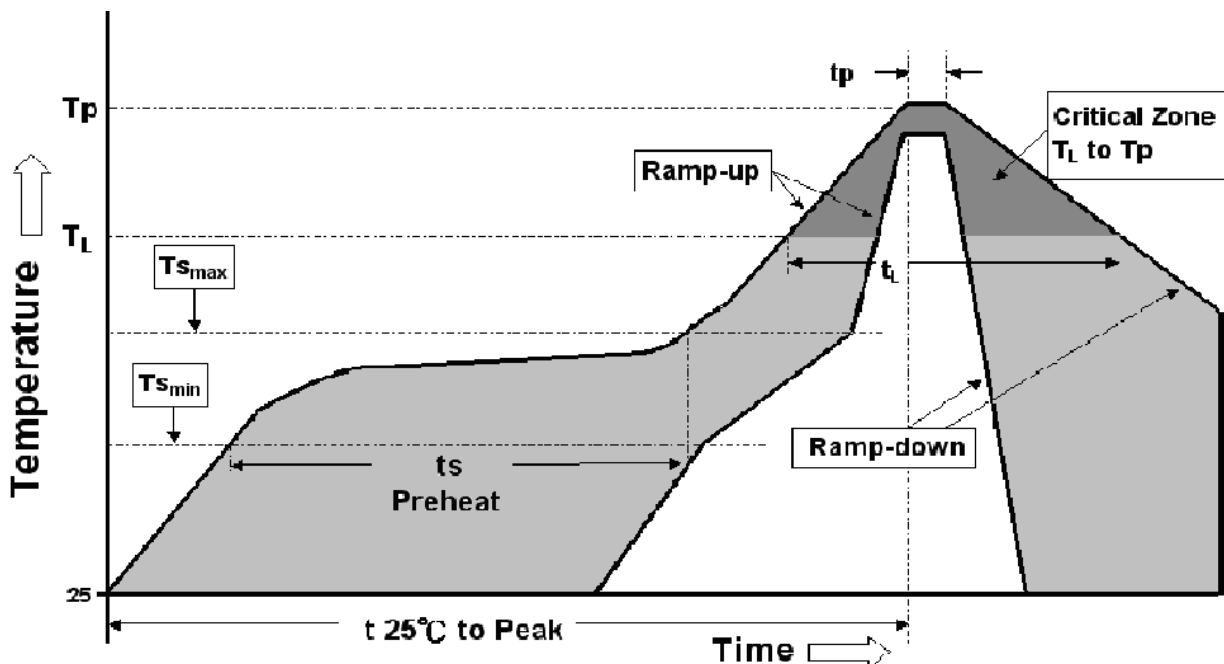
## Pad Layouts

The dimension in the table below provide the recommended pad layout for each XSMD1812 device



Pad dimensions (millimeters)			
Device	A Nominal	B Nominal	C Nominal
XMD1812 series	3.45	1.78	3.50

## Soldering Parameters



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