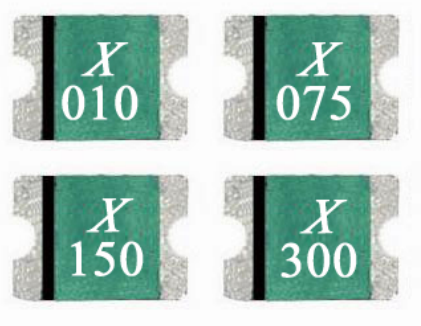
Resettable PPTC Fuse



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	RoHS HF Halogen Free
TÜV	R50004084 R50090556	

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	sec/A	A	V	W	Ω	Ω
XMD1812-010	0.10	0.30	0.020/8.0	100	60	0.8	1.600	15.000
XMD1812-014	0.14	0.30	0.008/8.0	100	60	0.8	1.200	6.500
XMD1812-020	0.20	0.40	0.020/8.0	100	30	0.8	0.800	5.000
XMD1812-035	0.35	0.70	0.100/8.0	100	16	0.8	0.320	1.500
XMD1812-050	0.50	1.00	0.150/8.0	100	16	0.8	0.150	1.000
XMD1812-050-30	0.50	1.00	0.150/8.0	100	30	0.8	0.150	1.000
XMD1812-075	0.75	1.50	0.200/8.0	100	16	0.8	0.110	0.450
XMD1812-075-24	0.75	1.50	0.200/8.0	100	24	1.0	0.110	0.290
XMD1812-075-33	0.75	1.50	0.200/8.0	100	33	1.0	0.110	0.400
XMD1812-110	1.10	2.20	0.300/8.0	100	8	0.8	0.040	0.210
XMD1812-110-16	1.10	2.20	0.500/8.0	100	16	0.8	0.040	0.180
XMD1812-110-24	1.10	2.20	0.500/8.0	100	24	1.0	0.060	0.200
XMD1812-110-33	1.10	2.20	0.500/8.0	100	33	0.8	0.060	0.200
XMD1812-125	1.25	2.50	0.400/8.0	100	6	0.8	0.050	0.140
XMD1812-150	1.50	3.00	0.500/8.0	100	8	0.8	0.040	0.110
XMD1812-150-12	1.50	3.00	0.500/8.0	100	12	1.0	0.040	0.110
XMD1812-150-24	1.50	3.00	1.500/8.0	100	24	1.0	0.040	0.120
XMD1812-160	1.60	3.20	0.500/8.0	100	8	0.8	0.030	0.100

XMD1812-160-12	1.60	3.20	1.000/8.0	100	12	1.0	0.030	0.100
XMD1812-160-16	1.60	3.20	1.000/8.0	100	16	1.0	0.030	0.100
XMD1812-200	2.00	3.50	2.000/8.0	100	8	1.0	0.020	0.070
XMD1812-260	2.60	5.00	2.500/8.0	100	8	1.0	0.015	0.047
XMD1812-260-13	2.60	5.00	5.000/8.0	100	13.2	1.3	0.015	0.050
XMD1812-260-16	2.60	5.00	5.000/8.0	100	16	1.3	0.015	0.050
XMD1812-300	3.00	5.00	4.000/8.0	100	6	1.0	0.012	0.040

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

I_T=Trip current-minimum current at which the device will always trip at 23℃ still air.

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

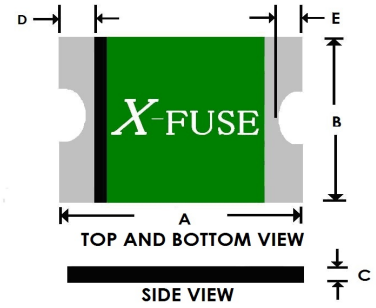
I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).

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℃ still air environment.

R_{MIN}=Minimum device resistance at 23℃.

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



Product Dimensions (Millimeter)

Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
XMD1812-010	4.37	4.73	3.07	3.41	0.60	0.90	0.30	0.95	0.25	0.65
XMD1812-014	4.37	4.73	3.07	3.41	0.60	0.90	0.30	0.95	0.25	0.65
XMD1812-020	4.37	4.73	3.07	3.41	0.60	0.90	0.30	0.95	0.25	0.65
XMD1812-035	4.37	4.73	3.07	3.41	0.40	0.70	0.30	0.95	0.25	0.65
XMD1812-050	4.37	4.73	3.07	3.41	0.35	0.65	0.30	0.95	0.25	0.65
XMD1812-050-30	4.37	4.73	3.07	3.41	0.45	0.75	0.30	0.95	0.25	0.65
XMD1812-075	4.37	4.73	3.07	3.41	0.35	0.65	0.30	0.95	0.25	0.65
XMD1812-075-24	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
XMD1812-075-33	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
XMD1812-110	4.37	4.73	3.07	3.41	0.25	0.55	0.30	0.95	0.25	0.65
XMD1812-110-16	4.37	4.73	3.07	3.41	0.25	0.90	0.30	0.95	0.25	0.65
XMD1812-110-24	4.37	4.73	3.07	3.41	0.80	1.30	0.25	0.95	0.25	0.65
XMD1812-110-33	4.37	4.73	3.07	3.41	0.80	1.30	0.25	0.95	0.25	0.65
XMD1812-125	4.37	4.73	3.07	3.41	0.25	0.55	0.30	0.95	0.25	0.65
XMD1812-150	4.37	4.73	3.07	3.41	0.25	0.55	0.30	0.95	0.25	0.65
XMD1812-150-12	4.37	4.73	3.07	3.41	0.60	1.10	0.25	0.95	0.25	0.65
XMD1812-150-24	4.37	4.73	3.07	3.41	0.60	1.55	0.25	0.95	0.25	0.65
XMD1812-160	4.37	4.73	3.07	3.41	0.25	0.90	0.30	0.95	0.25	0.65
XMD1812-160-12	4.37	4.73	3.07	3.41	0.60	1.35	0.25	0.95	0.25	0.65
XMD1812-160-16	4.37	4.73	3.07	3.41	0.60	1.35	0.25	0.95	0.25	0.65
XMD1812-200	4.37	4.73	3.07	3.41	0.55	1.20	0.25	0.95	0.25	0.65

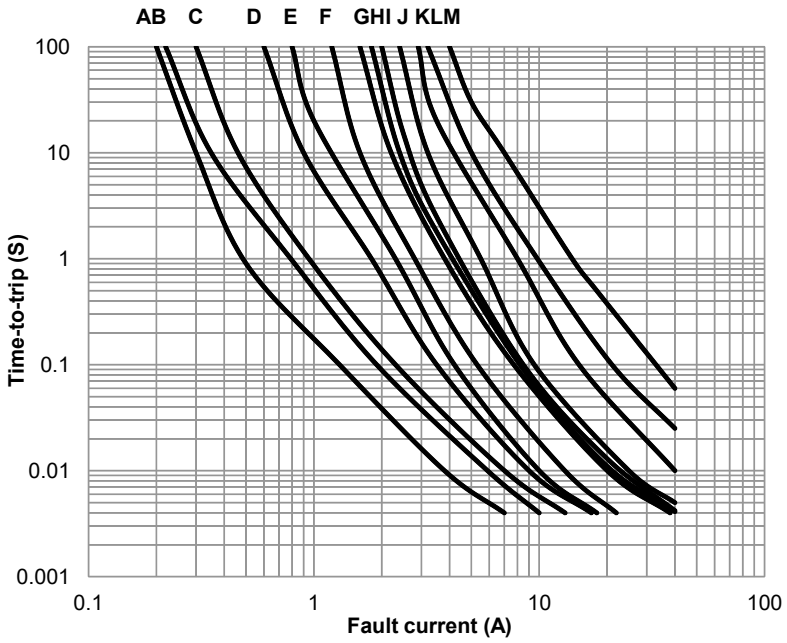
XMD1812-260	4.37	4.73	3.07	3.41	0.55	1.20	0.25	0.95	0.25	0.65
XMD1812-260-13	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
XMD1812-260-16	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65
XMD1812-300	4.37	4.73	3.07	3.41	0.80	1.55	0.25	0.95	0.25	0.65

Thermal Derating Chart-I_H (A)

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

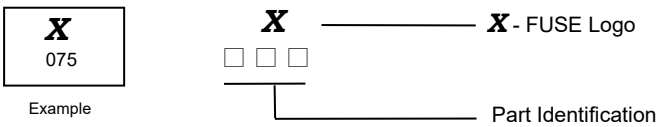
Typical Time-To-Trip at 23℃

A = XMD1812-010
B = XMD1812-014
C = XMD1812-020
D = XMD1812-035
E = XMD1812-050 / XMD1812-050-30
F = XMD1812-075 / XMD1812-075-24 / XMD1812-075-33
G = XMD1812-110 / XMD1812-110-16 / XMD1812-110-24 / XMD1812-110-33
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

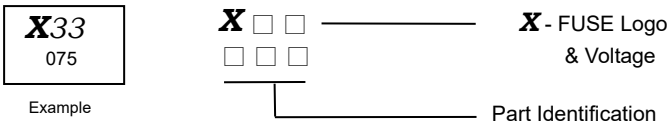


Marking System

XMD1812-075



XMD1812-075-33



Package Information

Tape & Reel:

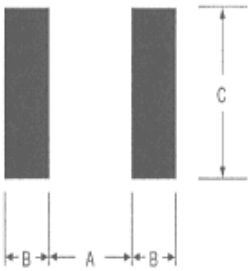
XMD1812-010~XMD1812-260 ----------2000pcs per reel

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

All specifications are subject to revise without notice.

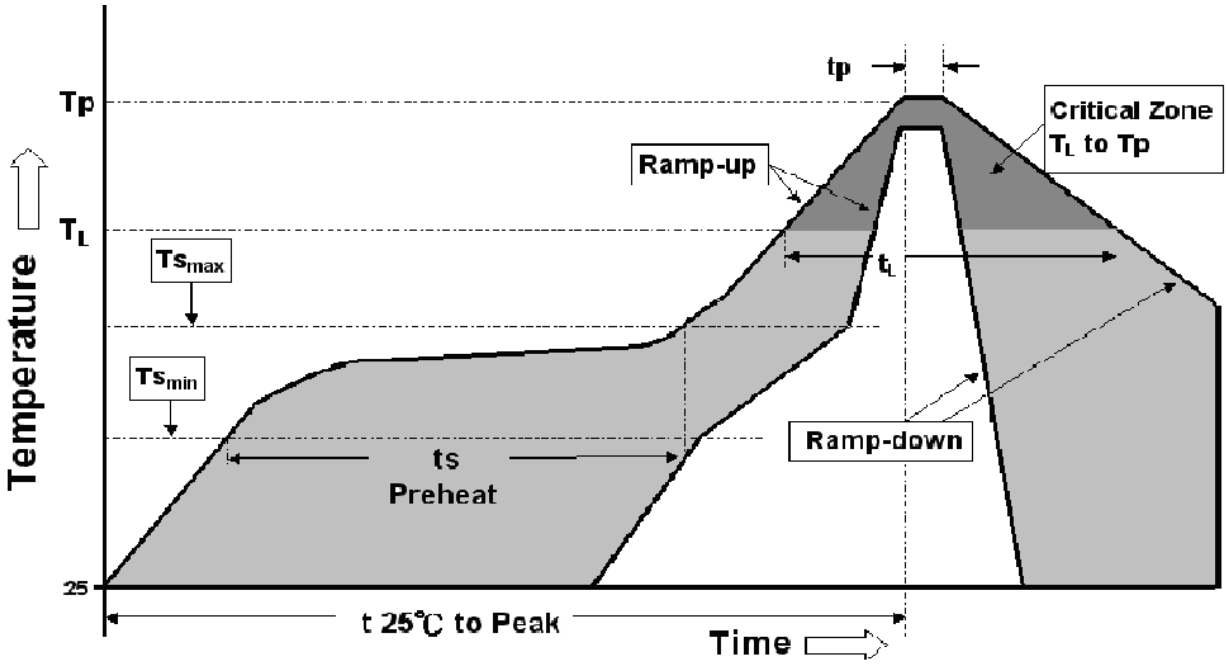
Pad Layouts

The dimension in the table below provide the recommended pad layout for each XMD1812 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
Average Ramp-Up Rate (Tsmax to Tp)	3 ℃/second max.
Preheat : -Temperature Min (Tsmin) -Temperature Max (Tsmax) -Time (tsmin to tsmax)	 150 ℃ 200 ℃ 60-180 seconds
Time maintained above: -Temperature(T_L) -Time (t_L)	 217 ℃ 60-150 seconds
Peak/Classification Temperature(Tp)	260 ℃
Time within 5℃ of actual Peak : Temperature (tp)	 20-40 seconds
Ramp-Down Rate :	6 ℃/second max.
Time 25 ℃ 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℃ / 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.