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	In Process	

XMD1210 Series — Surface Mount Devices

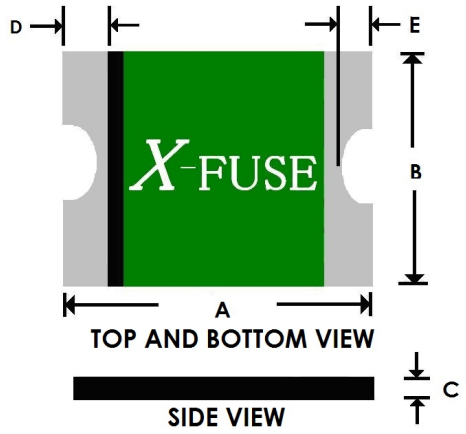
Electrical Characteristics

Part Number	I_H	I_T	T_{Trip}	I_{MAX}	V_{MAX}	$P_{D\ Typ}$	R_{MIN}	$R1_{MAX}$
	A	A	sec/A	A	V	W	Ω	Ω
XMD1210-005	0.05	0.15	3.00/0.25	100	60	0.6	3.600	50.000
XMD1210-010	0.10	0.25	1.50/0.50	100	60	0.6	1.600	15.000
XMD1210-020	0.20	0.40	0.02/8.00	100	30	0.6	0.800	5.000
XMD1210-035	0.35	0.70	0.20/8.00	100	16	0.6	0.320	1.300
XMD1210-050	0.50	1.00	0.10/8.00	100	16	0.6	0.250	0.900
XMD1210-075	0.75	1.50	0.10/8.00	100	8	0.6	0.130	0.400
XMD1210-110	1.10	2.20	0.30/8.00	100	8	0.8	0.060	0.210
XMD1210-150	1.50	3.00	0.50/8.00	100	6	0.8	0.040	0.110
XMD1210-175	1.75	3.50	0.60/8.00	100	6	0.8	0.020	0.080
XMD1210-200	2.00	4.00	1.00/8.00	100	6	0.8	0.015	0.070

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
XMD1210-005	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
XMD1210-010	3.00	3.43	2.35	2.80	0.60	1.15	0.25	0.75	0.10	0.45
XMD1210-020	3.00	3.43	2.35	2.80	0.40	0.85	0.25	0.75	0.10	0.45
XMD1210-035	3.00	3.43	2.35	2.80	0.40	0.80	0.25	0.75	0.10	0.45
XMD1210-050	3.00	3.43	2.35	2.80	0.30	0.75	0.25	0.75	0.10	0.45
XMD1210-075	3.00	3.43	2.35	2.80	0.30	0.70	0.25	0.75	0.10	0.45
XMD1210-110	3.00	3.43	2.35	2.80	0.60	1.00	0.25	0.75	0.10	0.45
XMD1210-150	3.00	3.43	2.35	2.80	0.50	0.90	0.25	0.75	0.10	0.45
XMD1210-175	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45
XMD1210-200	3.00	3.43	2.35	2.80	0.80	1.40	0.25	0.75	0.10	0.45

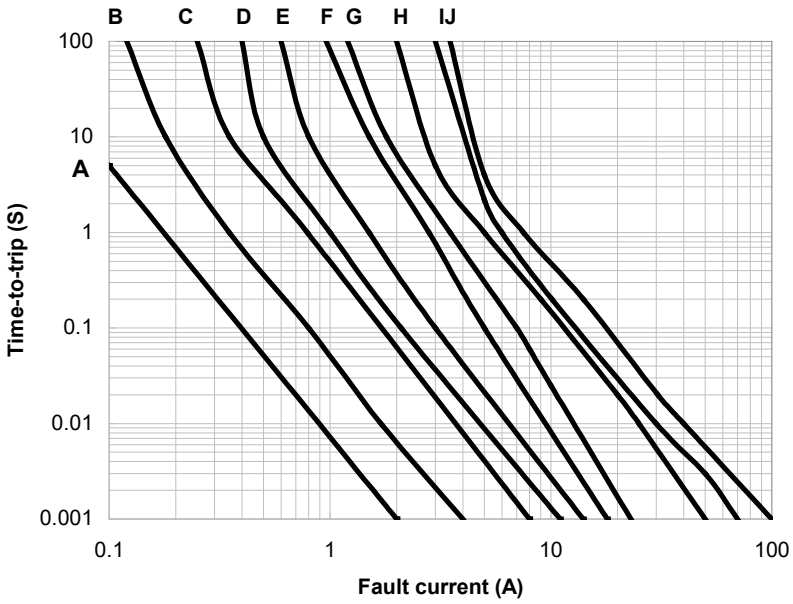


Thermal Derating Chart-I_H (A)

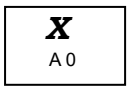
Part Number	Maximum ambient operating Temperature(℃)									
	-40	-20	0	23	30	40	50	60	70	85
XMD1210-005	0.07	0.07	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.02
XMD1210-010	0.15	0.13	0.12	0.10	0.09	0.08	0.08	0.06	0.06	0.05
XMD1210-020	0.29	0.26	0.23	0.20	0.18	0.17	0.15	0.13	0.12	0.09
XMD1210-035	0.51	0.46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

Typical Time-To-Trip at 23℃

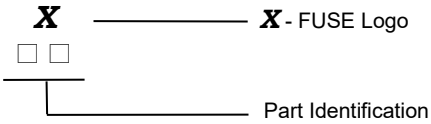
A = XMD1210-005
B = XMD1210-010
C = XMD1210-020
D = XMD1210-035
E = XMD1210-050
F = XMD1210-075
G = XMD1210-110
H = XMD1210-150
I = XMD1210-175
J = XMD1210-200



Marking System



Example



Package Information

Tape & Reel:

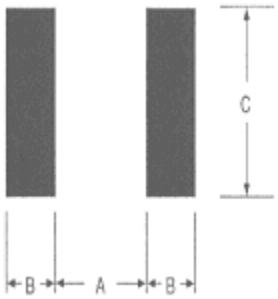
XMD1210-005~XMD1210-020 ----------3000pcs per reel

XMD1210-035~XMD1210-075 ----------4000pcs per reel

XMD1210-110~XMD1210-200 ----------3000pcs per reel

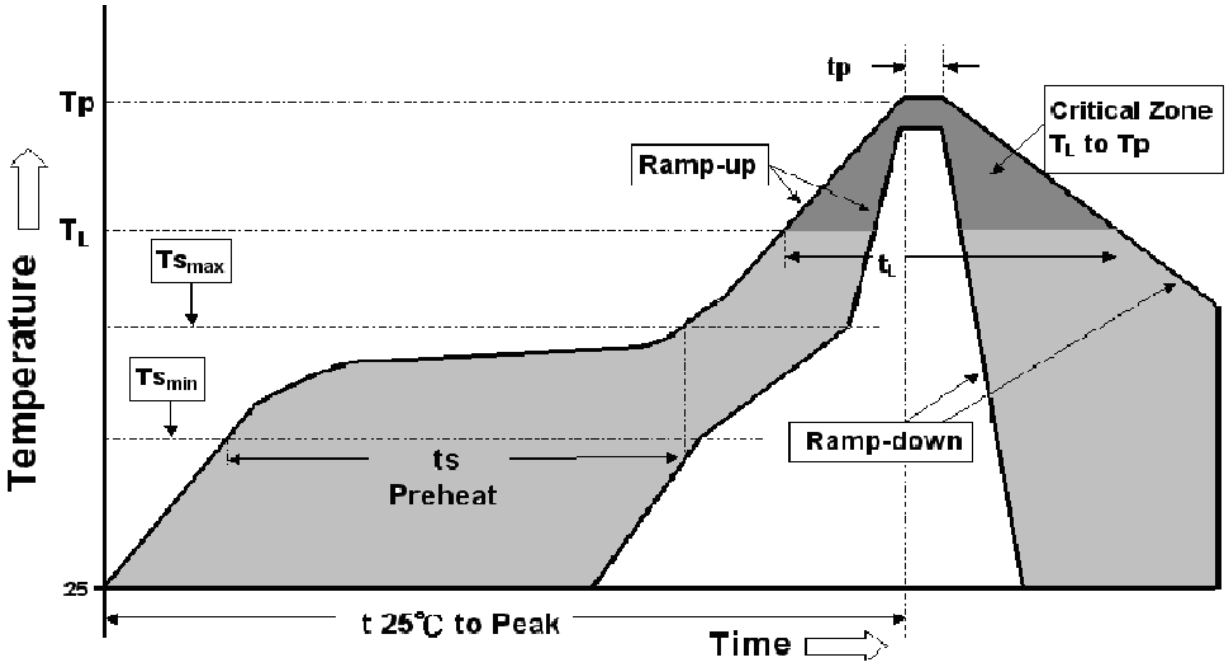
Pad Layouts

The dimension in the table below provide the recommended pad layout for each XMD1210 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
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.