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PRODUCT DATASHEET

PTC Devices · Surface Mount

ASMD1210 Series Surface Mount PTC Devices

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Description

The ASMD1210 series provides surface mount resettable overcurrent protection with holding current from 0.05A to 2.00A.

This series is suitable for wide range of applications in modern electronics where space is limited.

Features

- RoHS compliant and lead-free
- Low profile
- Halogen-free
- Fast response to fault current
- Compact design saves board space
- Compatible with high temperature solders

Agency Approvals

Agency	File Number
c UL us	pending
BAUART GEPRUFT TYPE APPROVED	pending

Regulation	Standard
RoHS	2002/95/EC
Halogen Free	EN14582

Applications

- Battery PCM
- Game console port protection
- USB hubs, ports and peripherals
- Optical disk drives
- Set-top-box and HDMI
- General electronics

Performance Specification

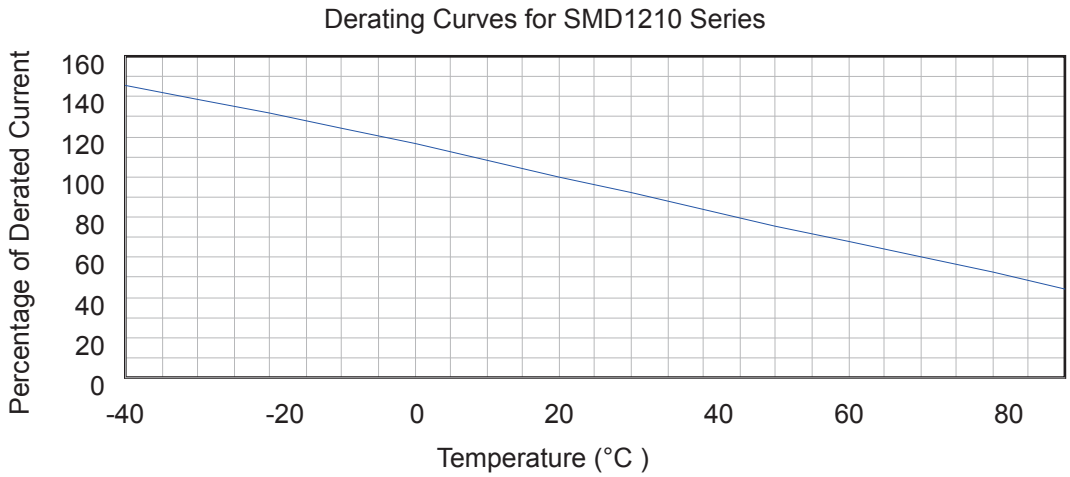
Model	V max (V dc)	I max (A)	I hold @25°C (A)	I trip @25°C (A)	P d Typ. (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	R i min (Ω)	R1max (Ω)
ASMD1210-005	30.0	100	0.05	0.15	0.6	0.25	1.50	2.800	50.000
ASMD1210-010	30.0	100	0.10	0.30	0.6	0.50	0.60	0.800	15.000
ASMD1210-020	30.0	100	0.20	0.40	0.6	8.0	0.02	0.400	5.000
ASMD1210-035	6.0	100	0.35	0.75	0.6	8.0	0.20	0.200	1.300
ASMD1210-050	13.2	100	0.50	1.00	0.6	8.0	0.10	0.180	0.900
ASMD1210-075	6.0	100	0.75	1.50	0.6	8.0	0.10	0.070	0.400
ASMD1210-110	6.0	100	1.10	2.20	0.6	8.0	0.30	0.050	0.210
ASMD1210-150	6.0	100	1.50	3.00	0.6	8.0	0.50	0.030	0.110
ASMD1210-175	6.0	100	1.75	3.50	0.8	8.0	0.60	0.020	0.080
ASMD1210-200	6.0	100	2.00	4.00	0.8	8.0	1.00	0.015	0.070

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.
I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.
V_{max} = Maximum operating voltage device can withstand without damage at rated current (Imax).
I_{max} = Maximum fault current device can withstand without damage at rated voltage (V max).
P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.
$R_{i\ min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.
R_{1max} = Maximum device resistance is measured one hour post reflow.
CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

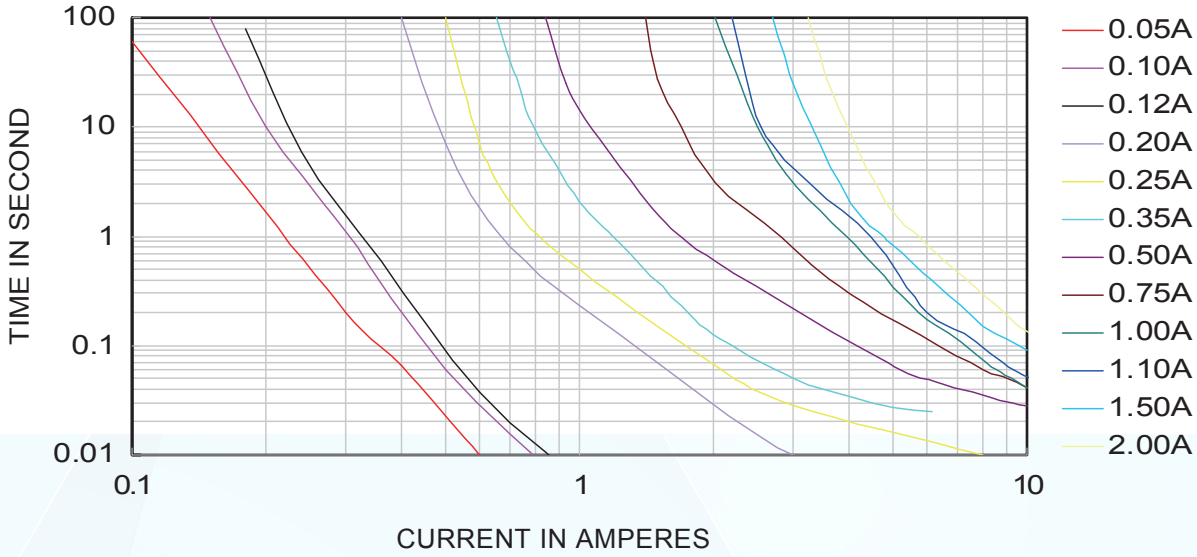
Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to solvent	MIL-STD-202,Method 215	No change
Vibration	MIL-STD-202,Method 201	No change
Ambient operating conditions : - 40 °C to +85 °C		
Maximum surface temperature of the device in the tripped state is 125 °C		

Thermal Derating Curve



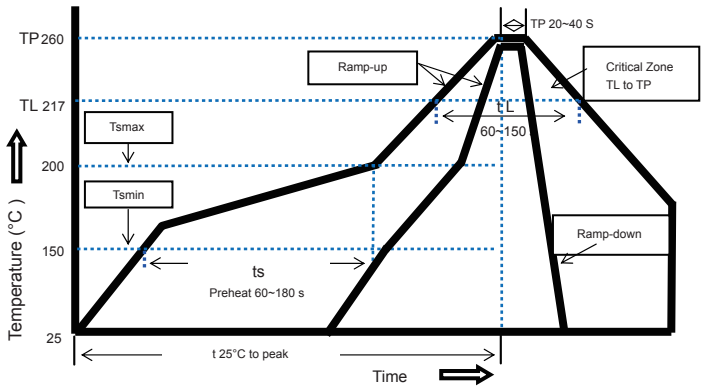
Average Time-Current Curve



Thermal Derading Chart

Model	Maximum ambient operating temperature (T_{mao}) vs. hold current (I_{hold})								
	- 40°C	- 20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
ASMD1210-005	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02
ASMD1210-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
ASMD1210-020	0.29	0.26	0.22	0.20	0.16	0.14	0.13	0.11	0.08
ASMD1210-035	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
ASMD1210-050	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
ASMD1210-075	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
ASMD1210-110	1.69	1.48	1.29	1.10	0.88	0.76	0.65	0.57	0.43
ASMD1210-150	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71
ASMD1210-175	2.54	2.30	2.02	1.75	1.47	1.33	1.18	1.05	0.86
ASMD1210-200	2.90	2.63	2.31	2.00	1.68	1.52	1.35	1.20	0.98

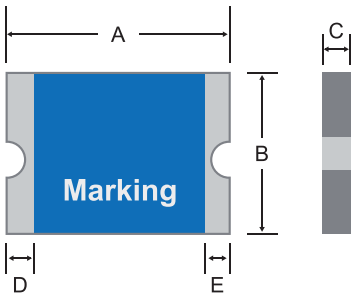
Soldering Parameters



Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free
Recommended maximum paste thickness is 0.25mm
Devices can be cleaned using standard industry methods and solvents.
Note 1:All temperature 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.

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Ts max to T p)	3℃/second mac.
Preheat	
-Temperature Min(Ts min)	150℃
-Temperature Max(Ts max)	200℃
-Time(Ts min to Ts max)	60~180 seconds
Time maintained above:	
-Temperature(TL)	217℃
-Time(tL)	60~150 seconds
Peak Temperature(Tp)	260℃
Ramp-Down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max
Storage Condition	0℃~35℃,≤70%RH

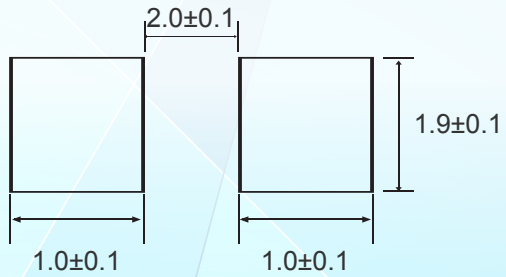
Physical Dimensions(mm.)



Model	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
ASMD1210-005	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-010	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-020	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-035	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-050	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-075	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-110	3.00	3.43	2.35	2.80	0.30	0.80	0.30	0.10
ASMD1210-150	3.00	3.43	2.35	2.80	0.40	0.80	0.30	0.10
ASMD1210-175	3.00	3.43	2.35	2.80	0.50	1.20	0.30	0.10
ASMD1210-200	3.00	3.43	2.35	2.80	0.50	1.20	0.30	0.10

Termination Pad Characteristics
Terminal pad materials: Tin-plated Nickel-Copper
Terminal pad solder ability: Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

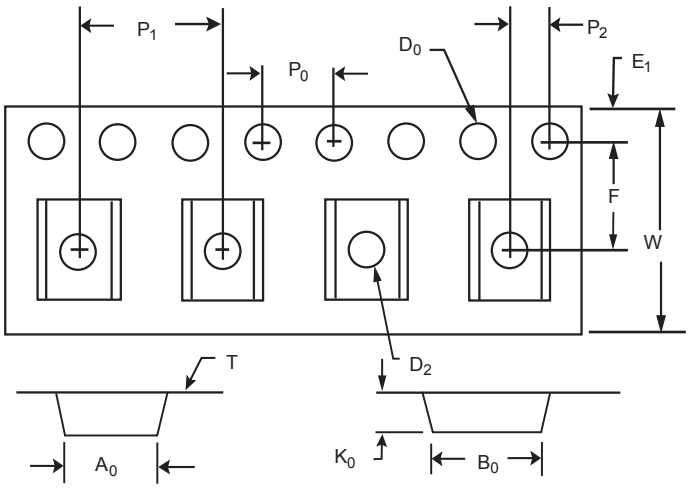
Packaging Quantity and Marking

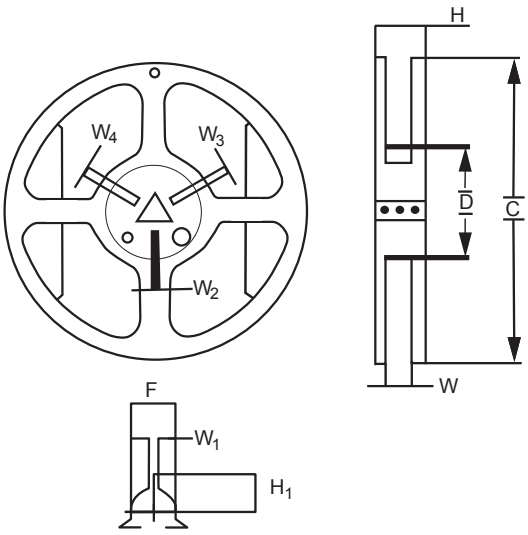


Part Number	Quantity
ASMD1210-050.075	4000 pcs/reel
The others	4500 pcs/reel

Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	8.15 ± 0.2
P0	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.05
A0	2.82 ± 0.10
B0	3.52 ± 0.10
B1max.	4.35
D0	1.50 + 0.1, -0
F	3.5 ± 0.05
E1	1.75 ± 0.10
E2min.	6.25
T	0.6
T1max.	0.1
K0	1.04 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	9 ± 0.5
W2	12.6 ± 0.5





Storage And Handling

- Storage conditions: 40°C max, 70% R.H.
- Devices may not meet specified performance if storage conditions are exceeded.Technology Corp.

Part Number System

ASMD 1210 - □□□ - □□

- Special Voltage Rating(Optional)
- Holding Current Rating
- Device Dimensions:
  Length/width(Unit:1/100 inch) Size 3225 mm / 1210 inch
- Surface Mount Device

Cross Reference

Model	Cross Reference		
	Tyco / PolySwitch®	Littelfuse / POLY-FUSE®	Polytronics / EVERFUSE®
ASMD1210-005	MicroSMD005F	1210L005	SMD1210P005TF
ASMD1210-010	MicroSMD010F	1210L010	SMD1210P010TF
ASMD1210-020	-	1210L020	SMD1210P020TF
ASMD1210-035	MicroSMD035F	1210L035	SMD1210P035TF
ASMD1210-050	MicroSMD050F	1210L050	SMD1210P050TF
ASMD1210-075	MicroSMD075F	1210L075	SMD1210P750TF
ASMD1210-110	MicroSMD110F	1210L110	SMD1210P110TF
ASMD1210-150	MicroSMD150F	1210L150	SMD1210P150TF
ASMD1210-175	MicroSMD175F	1210L175	SMD1210P175TF
ASMD1210-200	MicroSMD200F	1210L200	SMD1210P200TF

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