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PRODUCT DATASHEET

Surface Mount PTC Devices

ASMD0805 Series Surface Mount PTC Devices

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Description

The ASMD0805 series provides miniature surface mount resettable overcurrent protection with holding current from 0.1A to 1.25A.

This series is suitable for ultra portable applications where space is at a premium and the device current is low..

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
TÜV Rheinland Product Safety — BAUART GEPRÜFT TYPE APPROVED	pending

Regulation	Standard
RoHS	2002/95/EC
Halogen Free	EN14582

Applications

- Mobile phones and PDAs
- IC VCC protection
- Portable MP3 and media player
- Set-top-box and HDMI
- Mobile Internet Device (MID)
- Game console port protection
- USB peripherals

Performance Specification

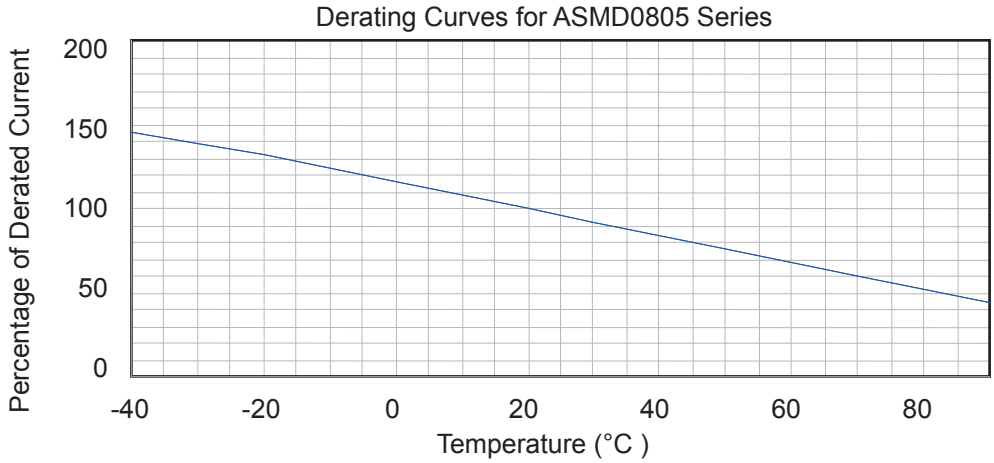
Model	V max (V dc)	I max (A)	I hold @25°C (A)	I trip @25°C (A)	P d Typ. (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	R i min (Ω)	R1max (Ω)
ASMD0805-010	15.0	100	0.10	0.30	0.5	0.5	1.50	1.000	6.000
ASMD0805-020	9.0	100	0.20	0.50	0.5	8.0	0.02	0.650	3.500
ASMD0805-035	6.0	100	0.35	0.75	0.5	8.0	0.10	0.250	1.200
ASMD0805-050	6.0	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850
ASMD0805-075	6.0	40	0.75	1.50	0.6	8.0	0.20	0.090	0.385
ASMD0805-100	6.0	100	1.00	1.95	0.6	8.0	0.30	0.060	0.230
ASMD0805-110	6.0	100	1.10	2.20	0.6	8.0	0.30	0.060	0.210
ASMD0805-125	6.0	100	1.25	2.50	1.5	8.0	0.60	0.030	0.140

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.

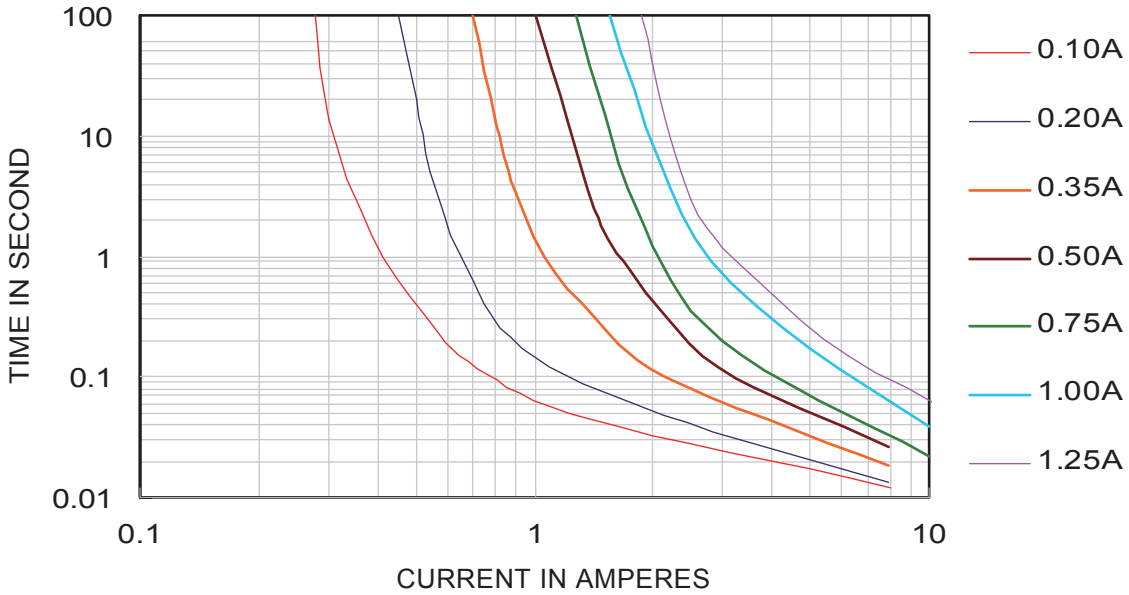
Environmental Specifications

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



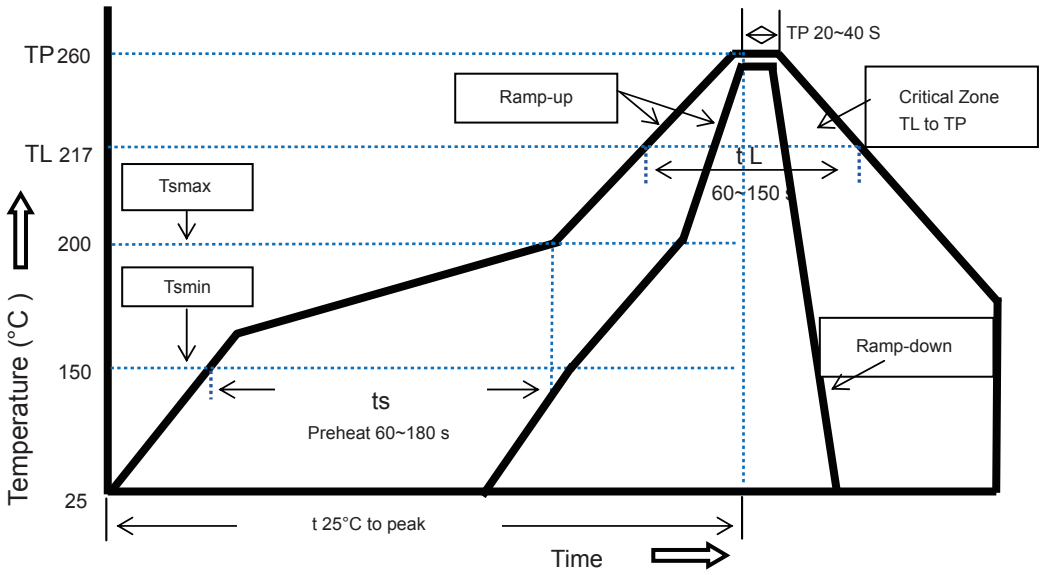
Average Time-Current Curve



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
ASMD0805-010	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
ASMD0805-020	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
ASMD0805-035	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
ASMD0805-050	0.68	0.62	0.55	0.50	0.40	0.37	0.33	0.29	0.23
ASMD0805-075	1.00	0.90	0.79	0.75	0.63	0.57	0.53	0.41	0.34
ASMD0805-100	1.35	1.25	1.15	1.00	0.82	0.74	0.65	0.55	0.42
ASMD0805-110	1.45	1.35	1.20	1.10	0.92	0.84	0.75	0.65	0.52
ASMD0805-125	1.65	1.53	1.36	1.25	1.05	0.95	0.85	0.74	0.59

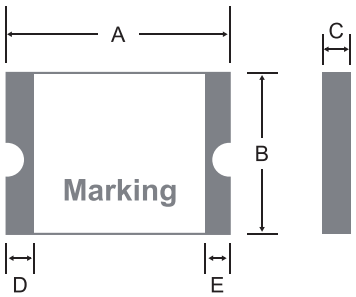
Soldering Parameters



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

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.

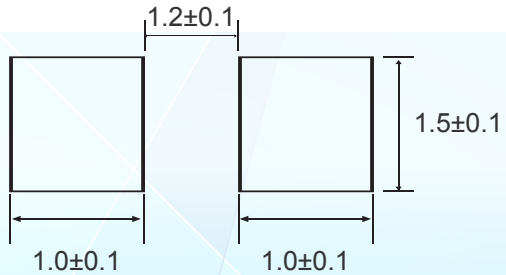
Physical Dimensions(mm.)



Model	A		B		C		D	E
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
ASMD0805-010	2.00	2.20	1.20	1.50	0.50	1.00	0.20	0.10
ASMD0805-020	2.00	2.20	1.20	1.50	0.45	1.00	0.20	0.10
ASMD0805-035	2.00	2.20	1.20	1.50	0.45	1.00	0.20	0.10
ASMD0805-050	2.00	2.20	1.20	1.50	0.30	0.60	0.20	0.10
ASMD0805-075	2.00	2.20	1.20	1.50	0.40	1.00	0.20	0.10
ASMD0805-100	2.00	2.20	1.20	1.50	0.50	1.10	0.20	0.10
ASMD0805-110	2.00	2.20	1.20	1.50	0.50	1.20	0.20	0.10
ASMD0805-125	2.00	2.20	1.20	1.50	0.50	1.20	0.20	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

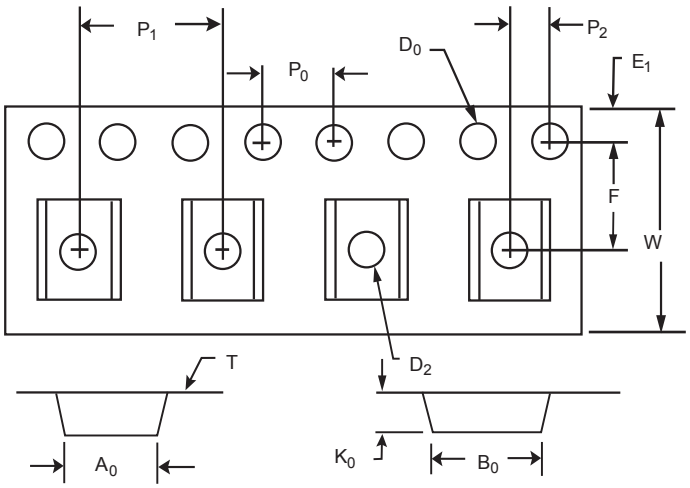
Packaging Quantity and Marking

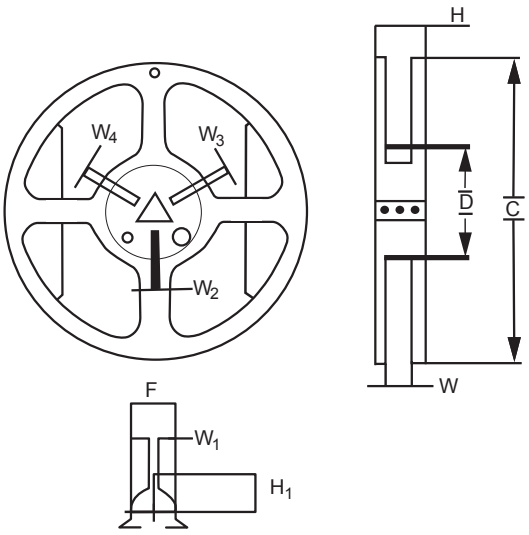


Part Number	Quantity
ASMD0805-010.020.035.050.	5,000 pcs/reel
ASMD0805-075.100.110.125.	4,000 pcs/reel
Tape & reel packaging per EIA481-1	

Tape And Reel Specifications (mm)

Governing Specifications	EIA 481-1
W	8.0 ± 0.3
P0	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.05
A0	1.45 ± 0.10
B0	2.30 ± 0.10
B1max.	4.35
D0	1.55 + 0.1, -0
F	3.5 ± 0.05
E1	1.75 ± 0.10
E2min.	6.25
T	0.25
T1max.	0.1
K0	0.74 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A max.	178
N min.	60
W1	9.0 ± 0.5
W2	12.0 ± 0.05

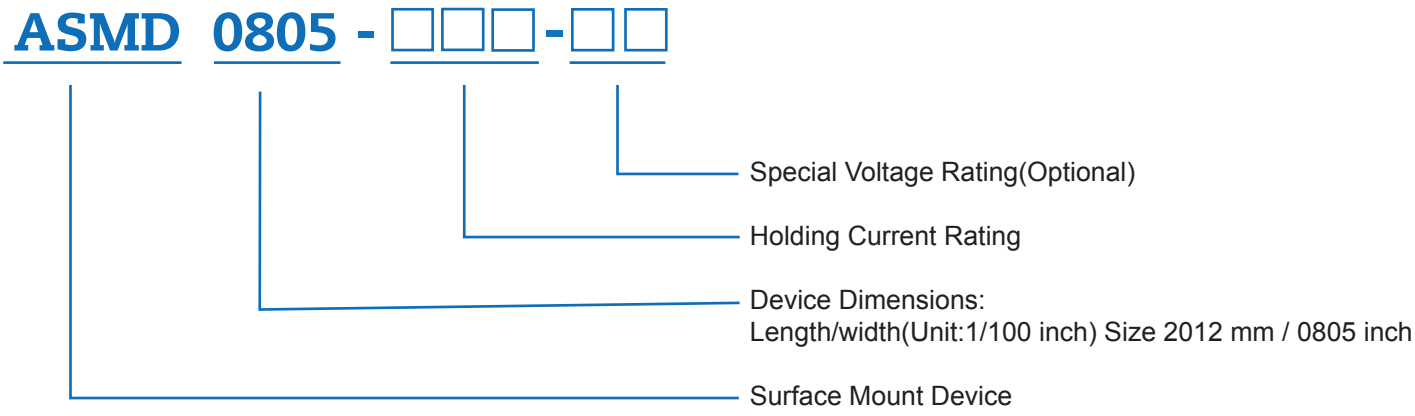




Storage And Handling

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

Part Number System



Cross Reference

Model	Cross Reference		
	Tyco / PolySwitch®	Littelfuse / POLY-FUSE®	Polytronics / EVERFUSE®
ASMD0805-010	-	0805L010	SMD0805P010TF
ASMD0805-020	-	0805L020	SMD0805P020TF
ASMD0805-035	picoSMDC035F	0805L035	SMD0805P035TF
ASMD0805-050	-	0805L050	SMD0805P050TF
ASMD0805-075	-	0805L075	SMD0805P075TF
ASMD0805-100	-	0805L100	SMD0805P100TF
ASMD0805-110	-	0805L110	SMD0805P110TF
ASMD0805-125	-	-	-

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"POLY-FUSE" is a registered trademark of Littelfuse,Inc.
"EVERFUSE" is a registered trademark of Polytronics Technology Corp.

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