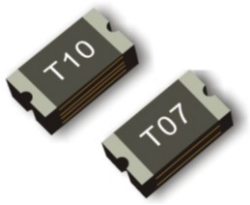
Prisemi®

PPNM SERIES

Surface Mount -Positive temperature coefficient fuse

Description

The PPNM series are designed specifically to provide over current protection for sensitive electronic equipment, the over current events are usually caused by voltage transients induced by lightning and other transient overvoltage.



SMD1206

Feature

- For surface mounted application to optimize board space
- Low profile package
- Lead free device size 0.12*0.06 inch/3.2*1.6 mm
- High temperature soldering guaranteed:260℃/40 seconds at terminals

Applications

PPNM series are ideal for the over current protection of I/O interfaces, VCC bus and other vulnerable circuits used in telecom, computer industrial and consumer electronic application, When the current reaches its trip current, its internal impedance will increase rapidly, so as to reduce the over current.

Environmental Specifications

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

Performance Specification

Model	I_{hold} @25℃	I_{trip} @25℃	V_{max}	I_{max}	Maximum Time to Trip		P_d typ.	Resistance (Ω)	
	(A)	(A)	(Vdc)	(A)	Current (A)	Time (Sec)	(W)	Ri_{min}	$R1_{max}$
PPNM005	0.05	0.15	60	10	0.25	1.50	0.40	2.500	40.00
PPNM010	0.10	0.25	30	10	0.50	1.20	0.40	1.400	15.00
PPNM012	0.12	0.29	30	10	1.00	0.20	0.40	1.350	8.500
PPNM020	0.20	0.46	24	10	1.00	0.60	0.60	0.600	2.600
PPNM025	0.25	0.55	16	10	1.25	0.60	0.60	0.400	2.400
PPNM035/6	0.35	0.75	6	40	8.00	0.10	0.60	0.300	1.200
PPNM035/24	0.35	0.75	24	40	8.00	0.10	0.60	0.300	1.200
PPNM050	0.50	1.00	13.2	40	8.00	0.10	0.40	0.150	0.750
PPNM050/16	0.50	1.00	16	40	8.00	0.10	0.40	0.150	0.750
PPNM075	0.75	1.50	6	100	8.00	0.10	0.40	0.100	0.400
PPNM100	1.00	2.00	6	100	8.00	0.10	0.60	0.060	0.280
PPNM110	1.10	2.20	6	100	8.00	0.10	0.60	0.060	0.280
PPNM150	1.50	3.00	6	100	8.00	0.30	0.60	0.030	0.170
PPNM175	1.75	3.50	6	100	8.00	1.00	0.70	0.020	0.120
PPNM200	2.00	4.00	6	100	8.00	1.00	0.70	0.020	0.120

I_{hold} = Hold Current. Maximum current device will not trip in 25℃ still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25℃ still air.

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

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

P_d = Power dissipation when device is in the tripped state in 25℃ still air environment at rated voltage.

$Ri_{min/max}$ = Minimum/Maximum device resistance prior to tripping at 25℃.

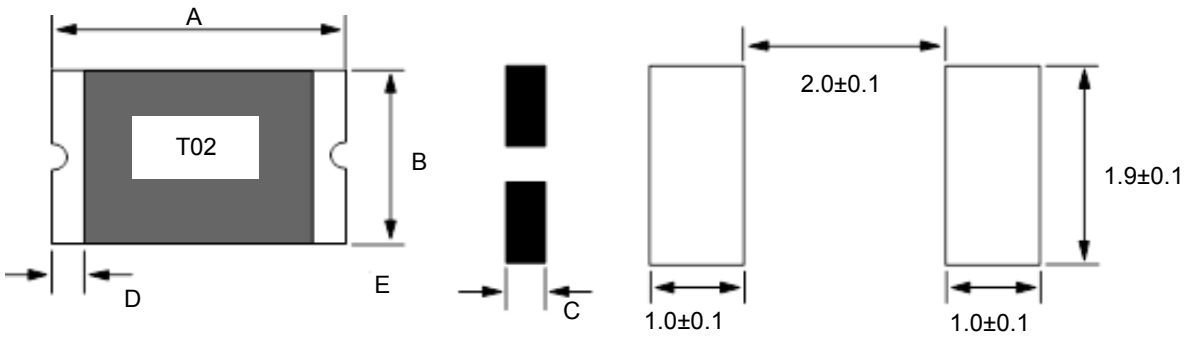
$R1_{max}$ = Maximum device resistance is measured one hour post reflow.

CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

I_{hold} Versus Temperature

Model	Hold current (I_{hold}/A) versus maximum ambient operating temperature (T_{mao}/℃)								
	-40	-20	0	25	40	50	60	70	85
PPNM005	0.08	0.07	0.06	0.05	0.05	0.04	0.04	0.03	0.02
PPNM010	0.16	0.14	0.13	0.10	0.09	0.08	0.08	0.07	0.06
PPNM012	0.19	0.17	0.15	0.12	0.11	0.10	0.09	0.08	0.07
PPNM020	0.30	0.27	0.24	0.20	0.18	0.16	0.14	0.12	0.11
PPNM025	0.38	0.34	0.30	0.25	0.23	0.20	0.18	0.15	0.14
PPNM035/6/24	0.51	0.46	0.40	0.35	0.30	0.27	0.24	0.22	0.18
PPNM050	0.76	0.68	0.59	0.50	0.44	0.40	0.35	0.32	0.26
PPNM075	1.11	1.00	0.85	0.75	0.67	0.61	0.52	0.50	0.42
PPNM100	1.60	1.40	1.30	1.00	0.90	0.80	0.75	0.70	0.60
PPNM110	1.64	1.46	1.30	1.10	0.92	0.83	0.80	0.65	0.52
PPNM150	2.20	1.99	1.77	1.50	1.34	1.23	1.10	1.01	0.84
PPNM175	2.57	2.32	2.07	1.75	1.56	1.44	1.28	1.18	0.98
PPNM200	2.88	2.61	2.28	2.00	1.80	1.66	1.51	1.39	1.19

Construction And Dimension (Unit: mm)



Recommended Pad Layout (mm)

T：PPTC
02：Holding Current 0.2A

Model	Marking	A		B		C		D
		Min	Max	Min	Max	Min	Max	Min
PPNM005	T0	3.00	3.40	1.40	1.80	0.80	1.20	0.25
PPNM010	T1	3.00	3.40	1.40	1.80	0.80	1.20	0.25
PPNM012	T01	3.00	3.40	1.40	1.80	0.80	1.20	0.25
PPNM020	T02	3.00	3.40	1.40	1.80	0.60	1.00	0.25
PPNM025	T03	3.00	3.40	1.40	1.80	0.60	1.00	0.25
PPNM035/6/24	T04	3.00	3.40	1.40	1.80	0.60	1.00	0.25
PPNM050	T05	3.00	3.40	1.40	1.80	0.60	1.00	0.25
PPNM075	T07	3.00	3.40	1.40	1.80	0.45	0.85	0.25
PPNM100	T10	3.00	3.40	1.40	1.80	0.80	1.20	0.25
PPNM110	T10	3.00	3.40	1.40	1.80	0.80	1.20	0.25
PPNM150	T15	3.00	3.40	1.40	1.80	0.80	1.20	0.25
PPNM175	T20	3.00	3.50	1.40	1.80	0.80	1.20	0.25
PPNM200	T20	3.00	3.50	1.40	1.80	0.80	1.20	0.25

Termination Pad Characteristics

Terminal pad material: Gold-plated Nickel-Copper or Tin- plated Nickel-Copper

Terminal pad solderability: Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

Rework

Use standard industry practices, the removal device must be replaced with a fresh one

Package information

Model	Q'ty/Reel
PPNM005 ~ PPNM012；PPNM100~PPNM200	3500 pcs
PPNM020 ~ PPNM075	4000 pcs

Note: Reel packaging per EIA-481-1 standard

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