High IIP3 AlGaAs PIN Diode
Series / Shunt Switch Element

MADP-011207-2012
Rev. V1

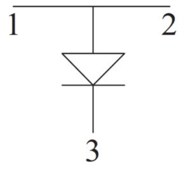
Features
- Cost Effective Choice for Switch Applications
- Broadband Performance up to 3 GHz
- IIP3: 80 dBm
- Low Insertion Loss: 0.25 dB
- Supports Power up to 3 W
- Small Size: 1.9 x 1.1 mm (DFN-2012)
- RoHS* Compliant

Applications
- Wireless Telecommunications Infrastructure & Test Instrument Applications

Description
The MADP-011207 is a high linearity, medium power AlGaAs PIN diode Shunt Switch element offered in a Lead-free, surface mount plastic package.

This AlGaAs PIN diode is designed for wireless telecommunications infrastructure & test instrument applications. It is also well suited for other applications in 0.1~ 3.0 GHz.

Pin Out / Schematic



(2012)

Pin Configuration (2012)[1]

Pin #	Pin Name	Description
1	RF_{IN}	RF Input
2	RF_{OUT}	RF Output
3	Paddle[2]	Ground

1. MACOM recommends connecting unused package pins to ground.
2. The exposed pad centered on the package bottom must be connected to RF, DC and thermal ground.

Electrical Specifications: T_A = +25°C

Parameter	Test Conditions	Min.	Typ.	Max.	Units
Breakdown Voltage (V_B)	I_R = 10 µA	150	—	—	V
Forward Voltage (V_F)	I_F = 50 mA	—	1.4	1.5	V
Total Capacitance (C_T)	V_R = -10 V, 1 MHz	—	0.57	0.62	pF
Minority Carrier Lifetime (T_L)	I_F = 10 mA, I_R = 6 mA @ 90% Recovery	—	122	—	ns

Absolute Maximum Ratings[3,4]

Parameter	Absolute Maximum
Breakdown Voltage	150 V
Forward Current	100 mA
Thermal Resistance	28 °C/W
Junction Temperature	+175°C
Storage Temperature	-65°C to +150°C
Assembly Temperature	+260°C, Per JEDEC STD-J-20C

3. Exceeding any one or combination of these limits may cause permanent damage to this device.
4. MACOM does not recommend sustained operation near these survivability limits.

Ordering Information

Part Number	Packaging
MADP-011207-2012	1,000 pc Reel

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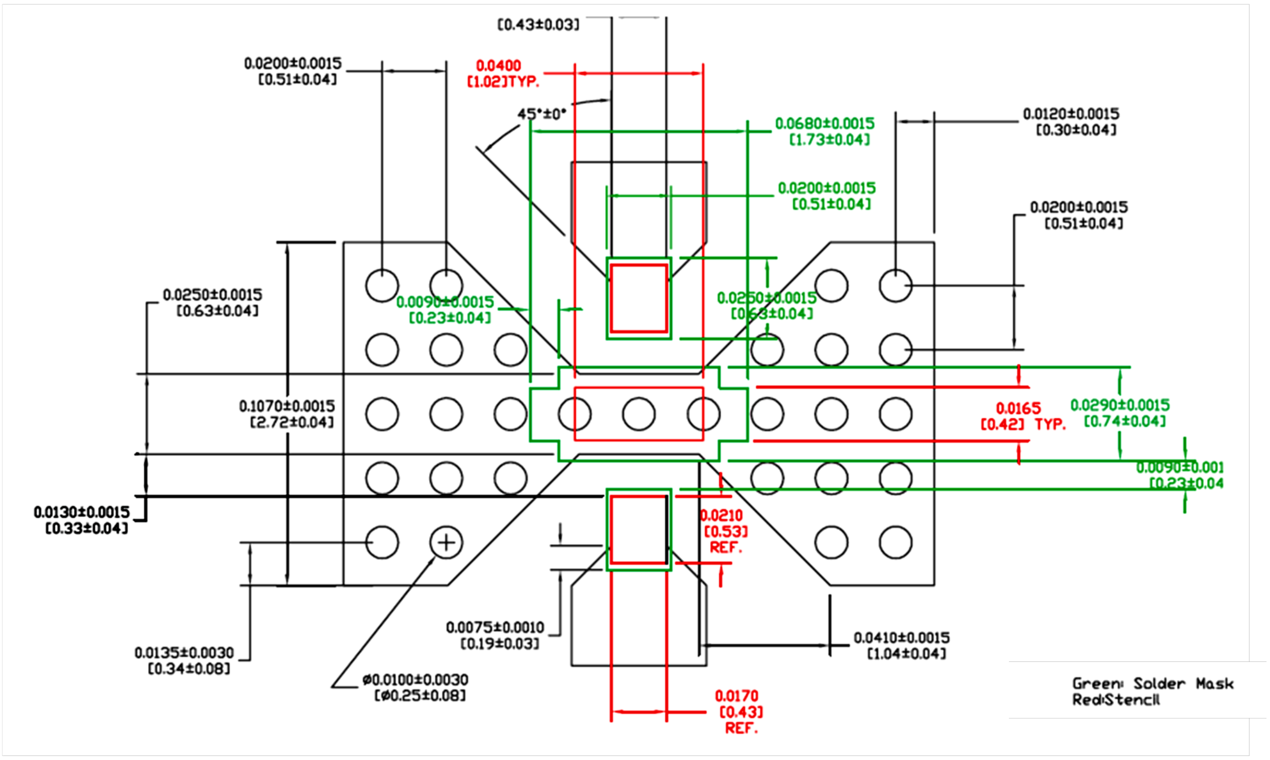
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Printed Circuit Board Layouts (2012)

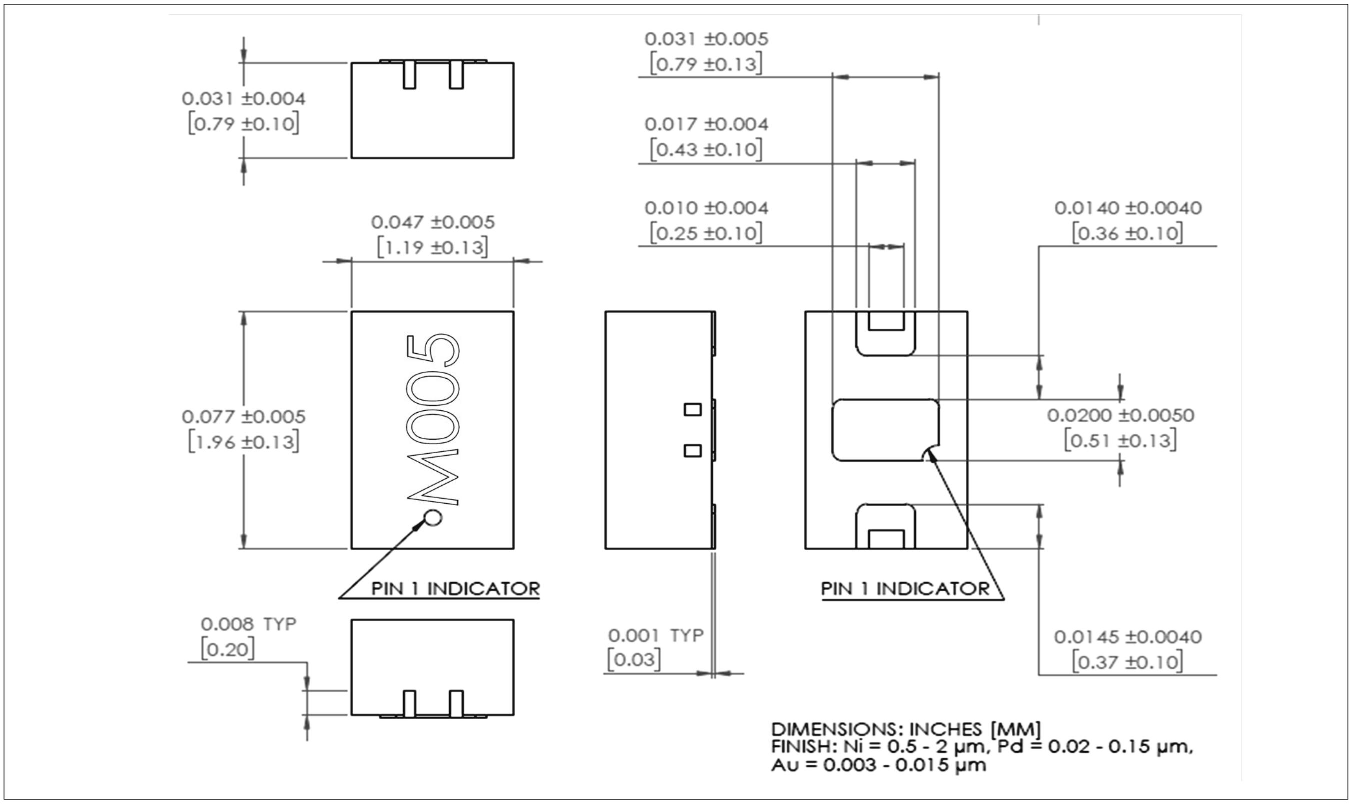


NOTE: If possible, use copper filled vias underneath pin 3 for better thermals; otherwise, use vias that are plated through, filled and plated over.

Solder mask should provide a 60 um clearance between copper pad and solder mask. Rounded pkg pads should have matching rounded solder mask openings.

Use circles or squares for the thermal land stencil such that only get 50% to 80% solder paste coverage.

Outline (2012)



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