MSAT-N25

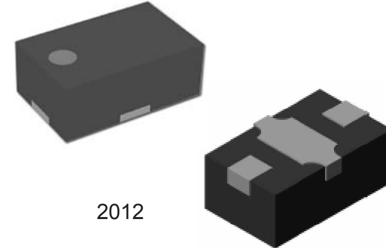
MACOM

NIP Diode Attenuator Shunt Element

Rev. V1

Features

- Low Distortion Harmonics, -85 dBc
- Broadband Performance, >10 GHz
- Low Insertion Loss
- High Attenuation, 27 dB
- RoHS* Compliant



Description

MSAT-N25 is a broadband, high linearity, medium power shunt NIP attenuator packaged in a 1.9 x 1.1 mm DFN package. This device is designed for wireless telecommunication infrastructure and test instrument applications and it is also suited for other applications in 0.1 ~ 10 GHz range.

Electrical Specifications: T_A = +25°C

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage (V_{BR})	I_R = 10 µA	V	200	—	—
Lifetime (L_T)	I_F = 10 mA, I_R = 6 mA, 10% / 90%	ns	2000	3000	5000
Minimum Series Resistance (R_S)	I = 100 mA, 500 MHz	Ω	—	1.5	2.5
High Series Resistance (R_S)	I = 10 µA, 500 MHz	Ω	2000	3000	4000
Low Series Resistance (R_S)	I = 1 mA, 500 MHz	Ω	30	40	50
Attenuation	I = 100 mA, ≤10 GHz	dB	20	25	—

Absolute Maximum Ratings

Parameter	Absolute Maximum
Forward Current (I_F)	200 mA
Reverse Voltage (V_R)	200 V
Thermal Resistance (θ_{JC})	+20°C/W
Junction Temperature (T_J)	+175°C
Storage Temperature (T_{STG})	-65°C to +125°C
Assembly Temperature (T_{SOLDER})	+260°C

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

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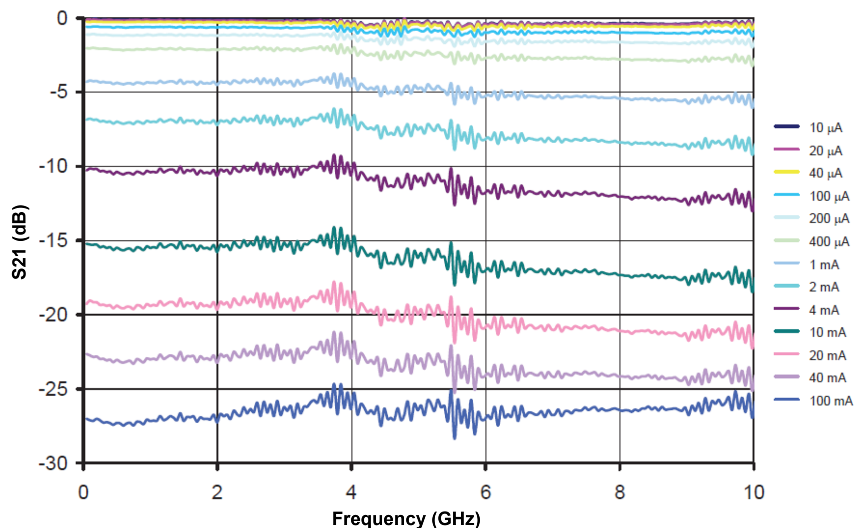
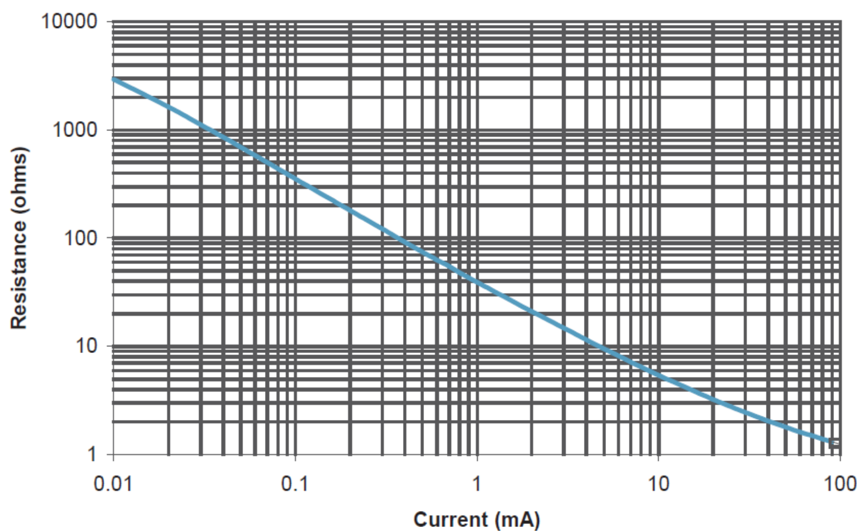
Performance Curves

Attenuation vs. Current



Resistance vs. Current



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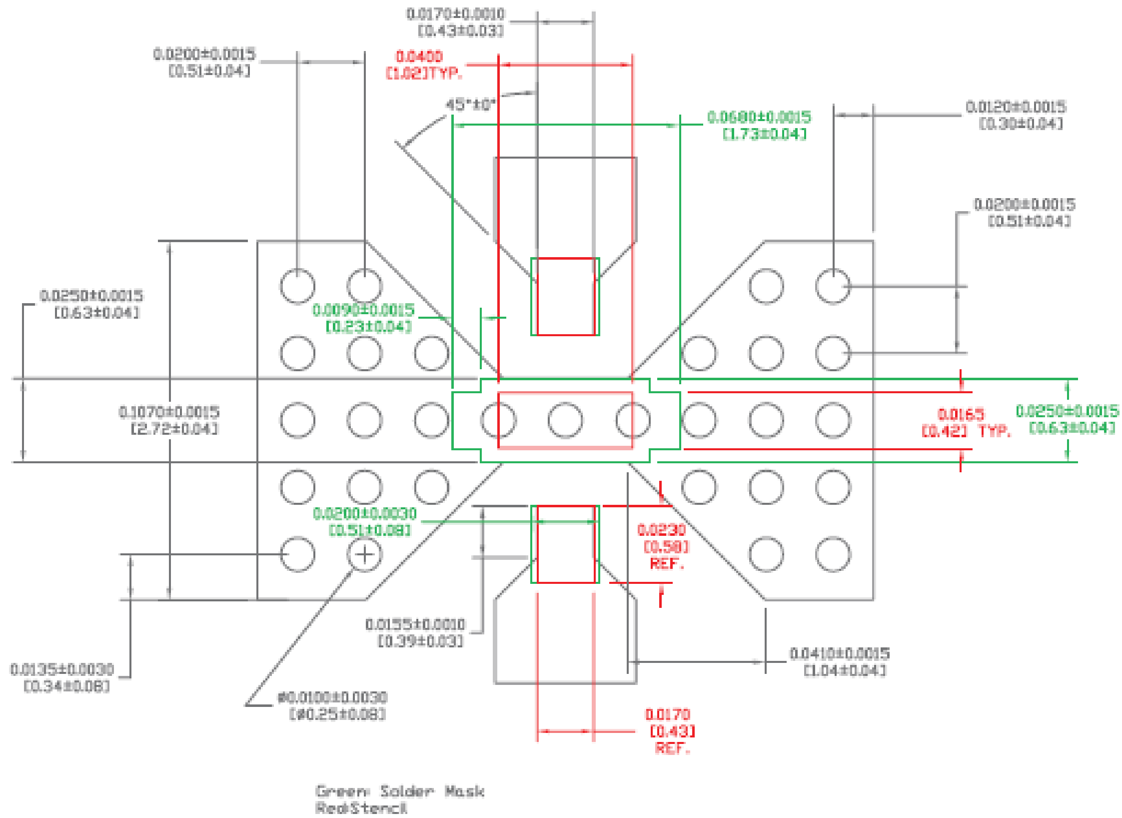
Recommended PCB Layout[1,2]



1. If possible, use copper filled vias underneath pin 3 for better thermal performance; otherwise, use vias that are plated through, filled and plated over.
2. Solder mask should provide a 60 µm clearance between copper pad and solder mask. Rounded package pads should have matching rounded solder mask openings.

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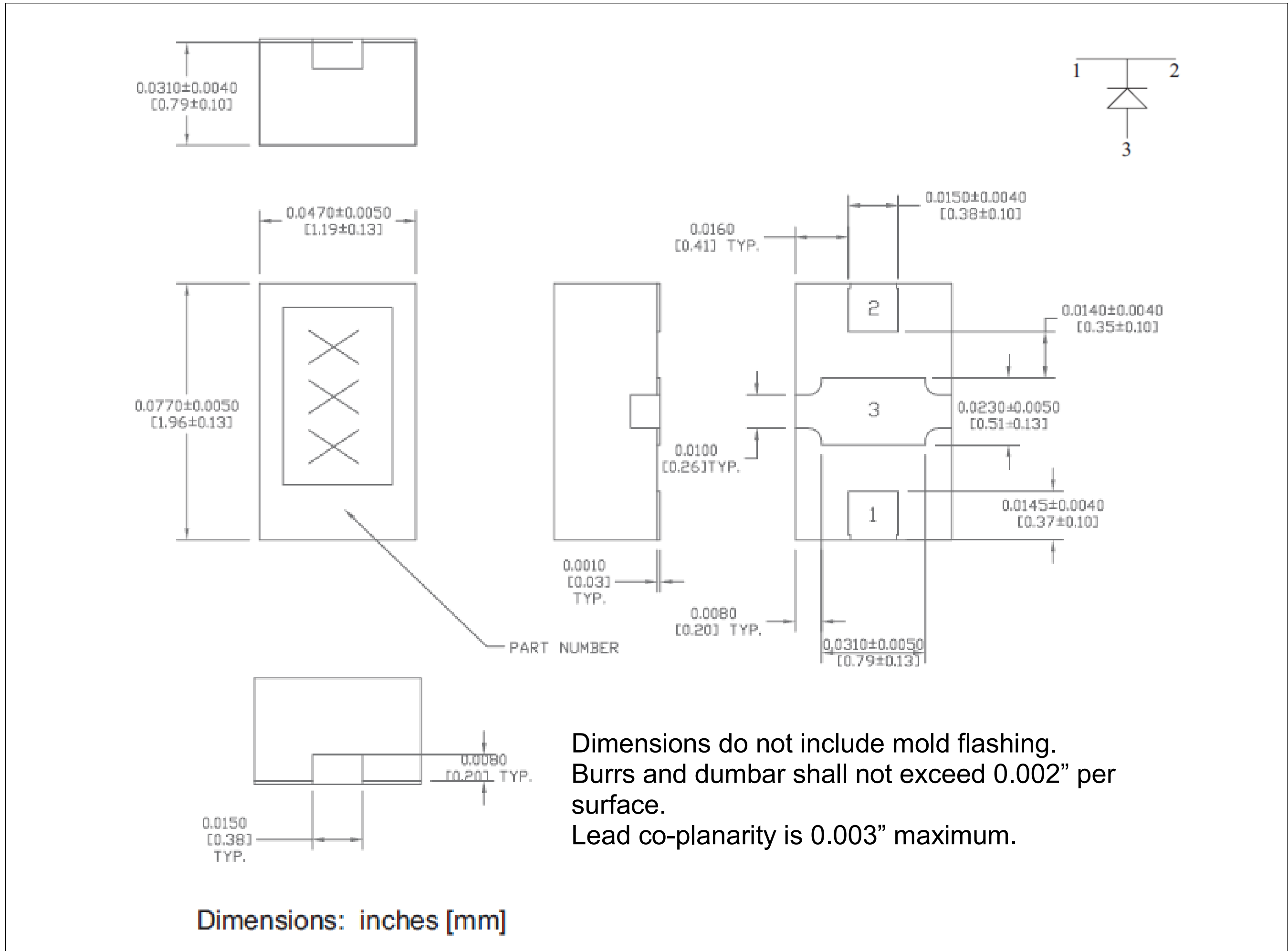
Outline (2012)



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