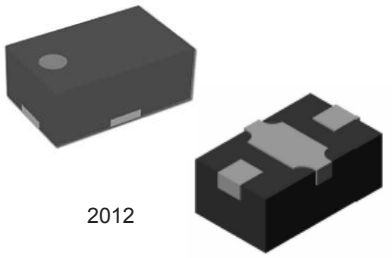
MSAT-N25

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



2012

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	—

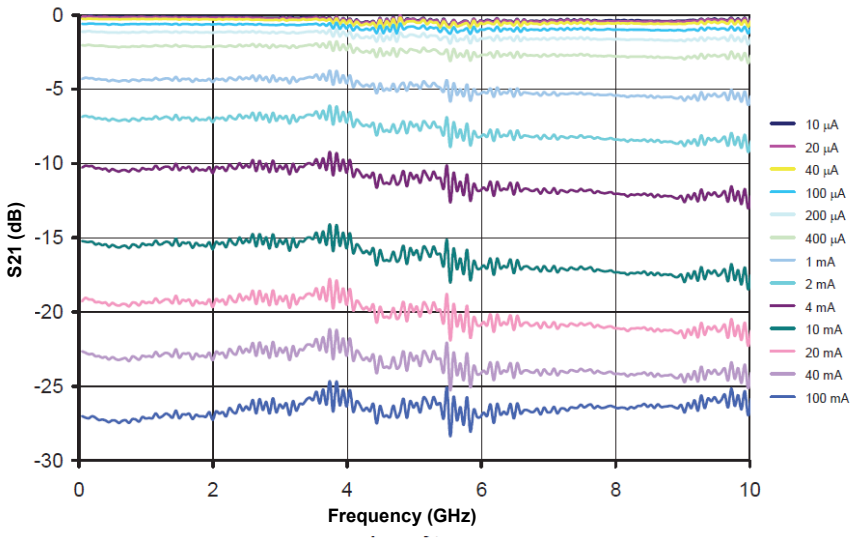
Absolute Maximum Ratings

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

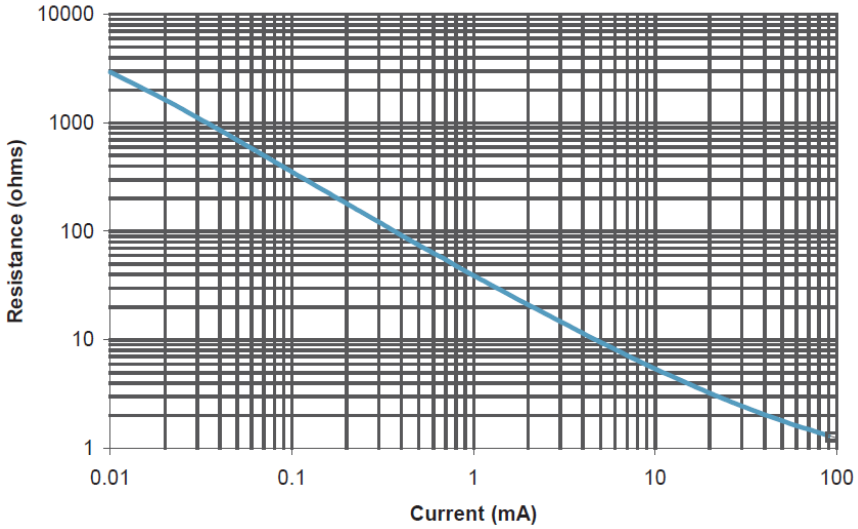
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Performance Curves

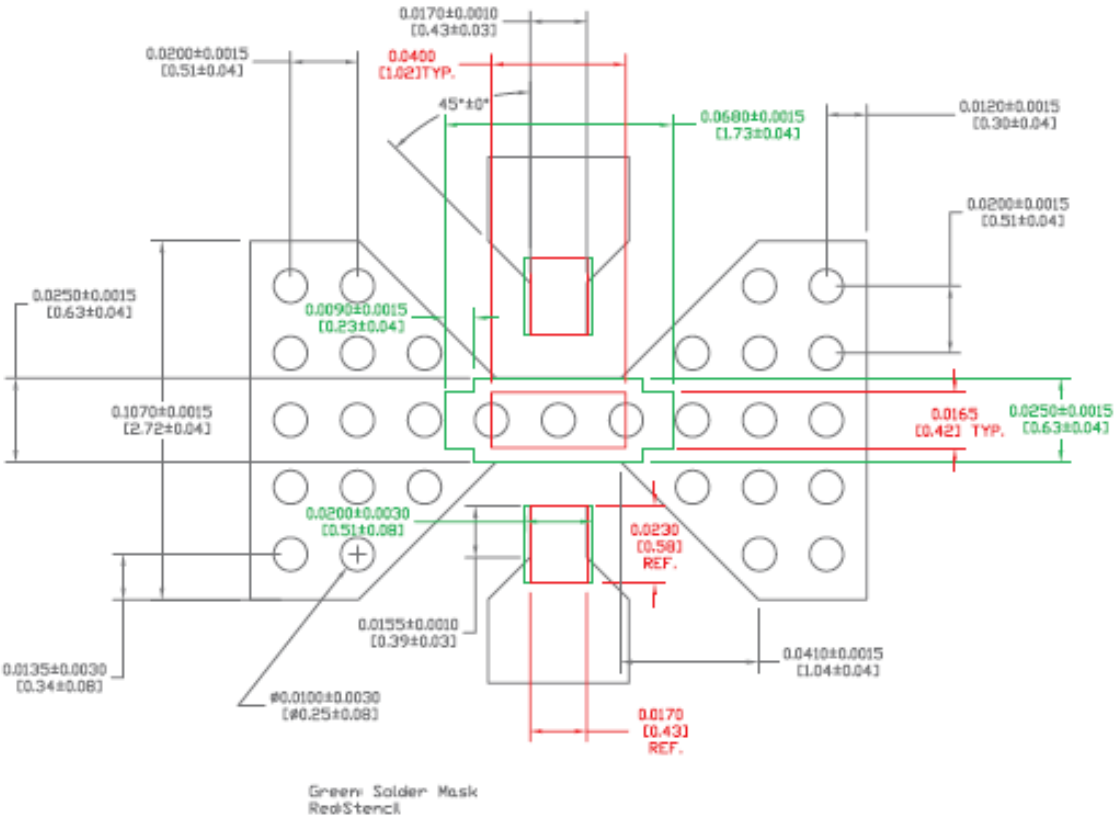
Attenuation vs. Current



Resistance vs. Current

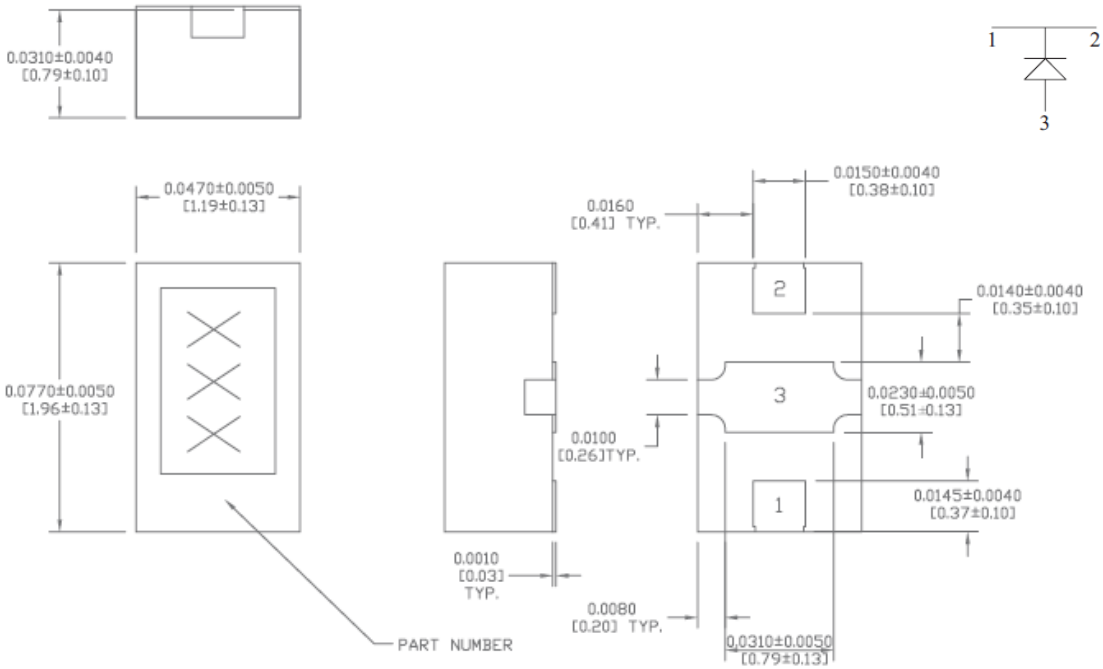


Recommended PCB Layout[1,2]



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.

Outline (2012)



Dimensions do not include mold flashing.
Burrs and dumbar shall not exceed 0.002” per surface.
Lead co-planarity is 0.003” maximum.

Dimensions: inches [mm]