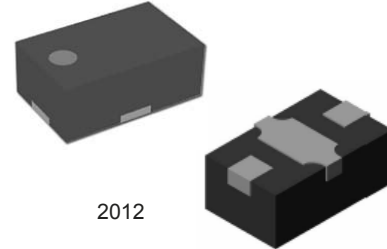


### Features

- 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.



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### Electrical Specifications: $T_A = +25^\circ\text{C}$

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

### Absolute Maximum Ratings

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

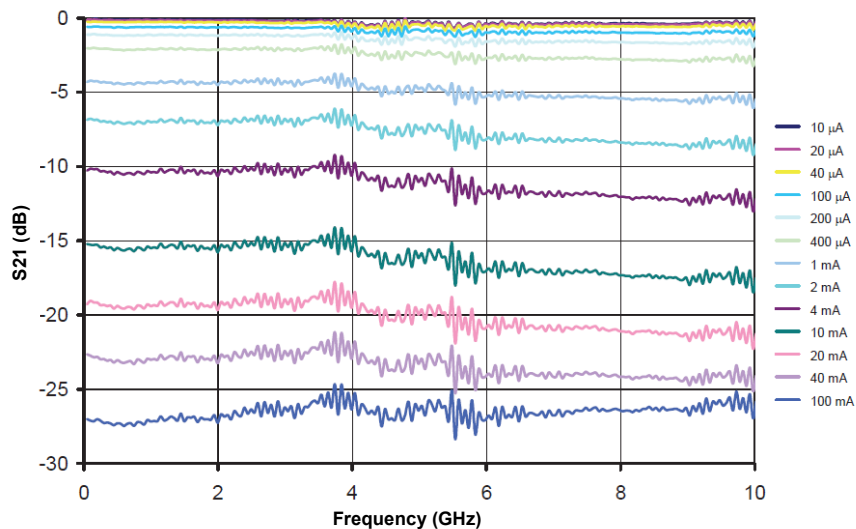
\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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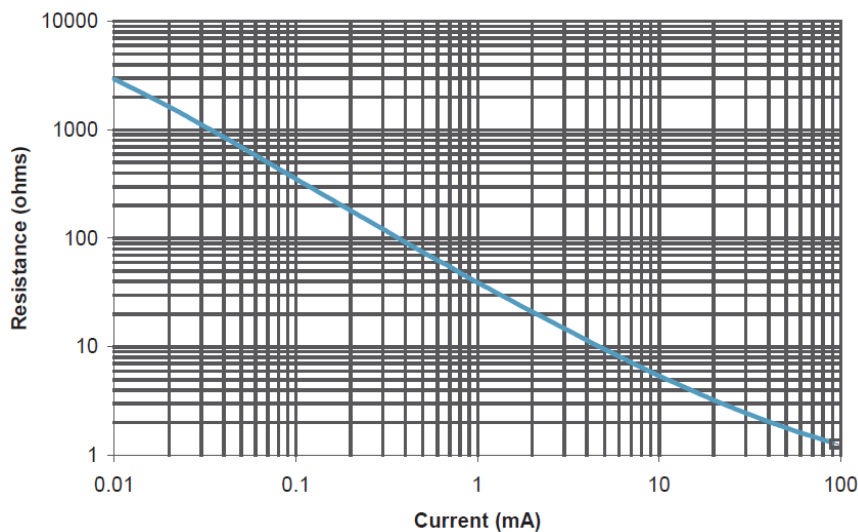
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### Performance Curves

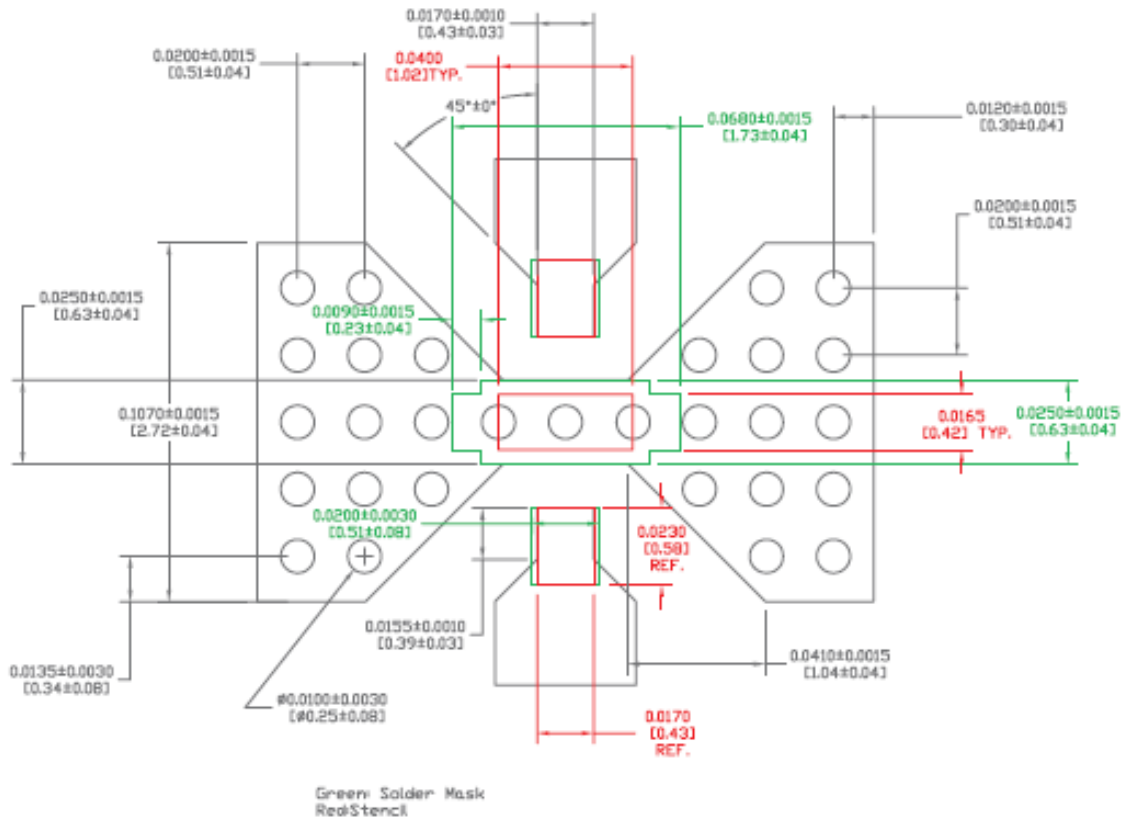
**Attenuation vs. Current**



**Resistance vs. Current**

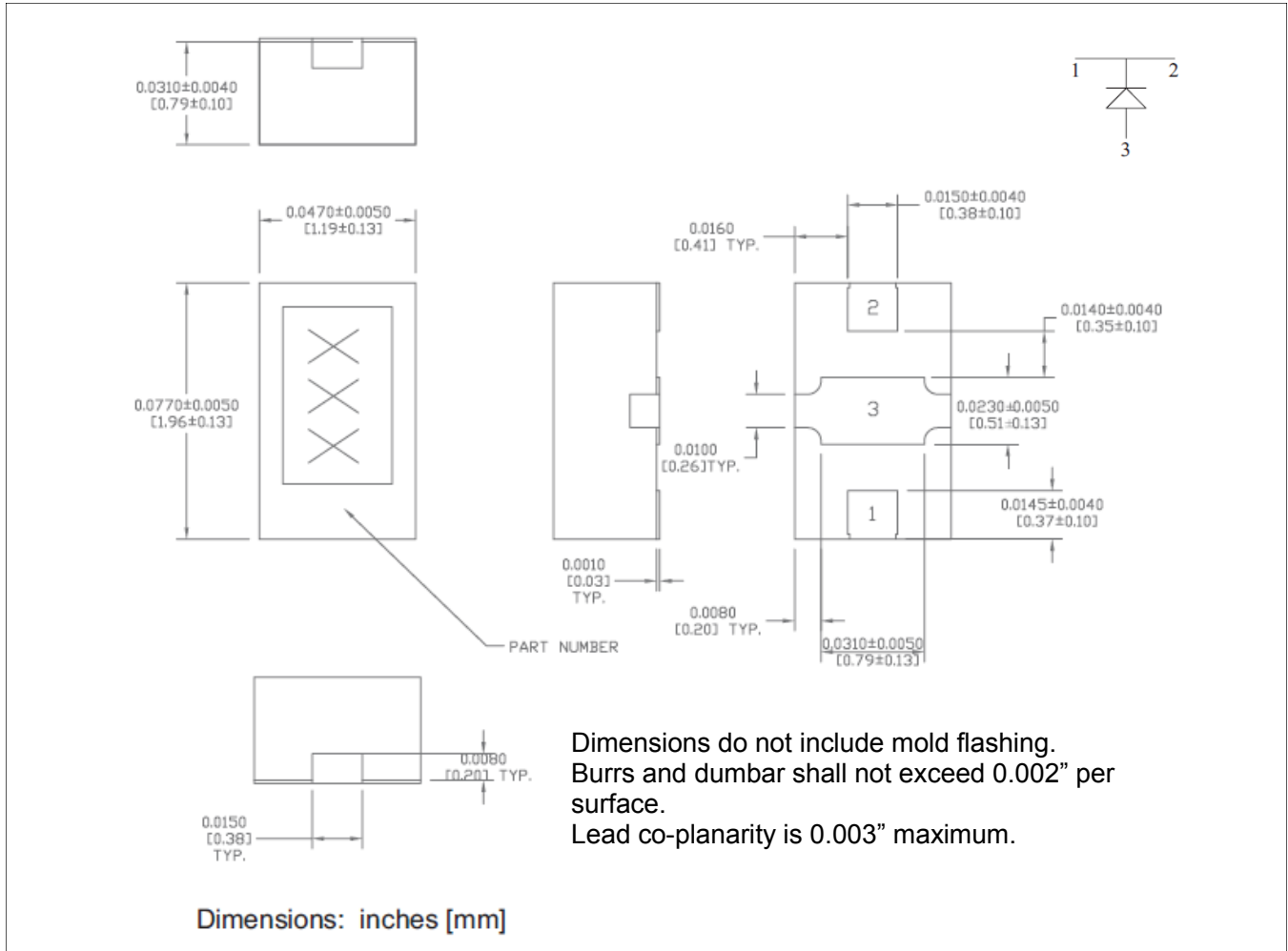


### Recommended PCB Layout<sup>1,2</sup>



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)



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