

X=1470 μm Y=1500 μm

Product Features

- ◆ Frequency: 36 to 50 GHz
- ◆ Insertion Loss: 2 dB Max
- ◆ Dynamic Range: >19 dB
- ◆ Voltage Range: 0 to +4V
- ◆ Biasable from either side
- ◆ Die Size: 2.2 sq. mm

Performance Characteristics (Ta = 25°C)

Specification	Min	Typ	Max	Unit
RF Frequency	36		50	GHz
Insertion Loss		19	2	dB
Dynamic Range			4	V
Voltage Range	0			
IM3 @ Pin = 0dBm/tone	30			dBc

Applications

- ◆ Point-to-Point Digital Radios
- ◆ Point-to-Multipoint Digital Radios
- ◆ Military Communication Systems

Product Description

The VVD106 is a monolithic PIN Diode broadband voltage variable attenuator. To ensure rugged and reliable operation, PIN Diode devices are fully passivated. Both bond pad and backside metallization are Ti/Au, which is compatible with conventional die attach, thermocompression and thermosonic wire bonding assembly techniques.

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Min	Max	Unit
Vd	-6	6	V
Id		20	mA
Input drive level		TBD	dBm
Assy. Temperature (60 seconds)		300	deg. C

Preliminary Information: The data contained in this document describes new products in the sampling or preproduction phase of development and is for information only. Northrop Grumman reserves the right to change without notice the characteristic data and other specifications as they apply to this product. The product represented by this datasheet is subject to U.S. Export Law as contained in ITAR or the EAR regulations.

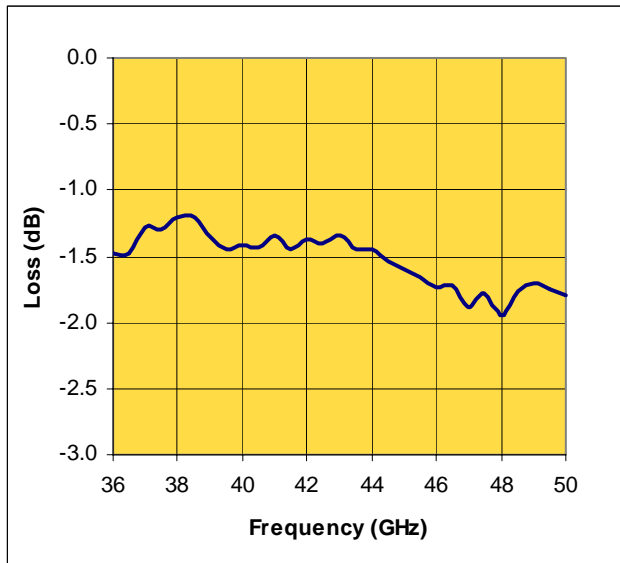


Preliminary Datasheet

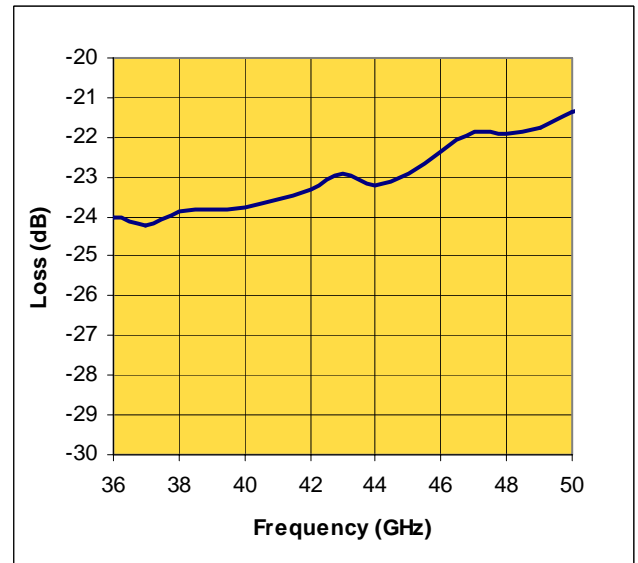
Revision: May 2007

Measured Performance Characteristics (Typical Performance at 25°C)
Pin = -20 dBm

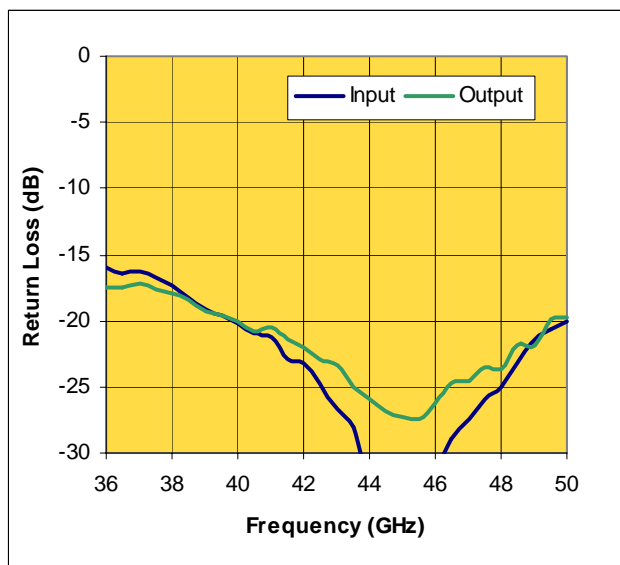
Min. Attenuation Versus Frequency



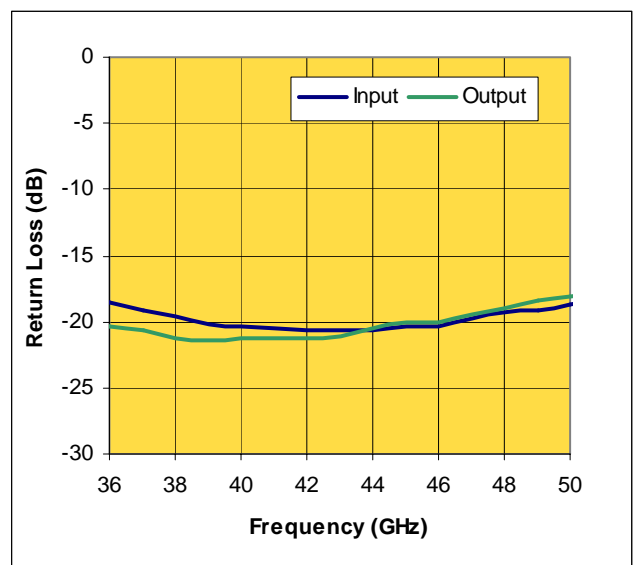
Max. Attenuation Versus Frequency



Return Loss Vs. Frequency @ Min. Atten.



Return Loss Vs. Frequency @ Max. Atten.



Preliminary Information: The data contained in this document describes new products in the sampling or preproduction phase of development and is for information only. Northrop Grumman reserves the right to change without notice the characteristic data and other specifications as they apply to this product. The product represented by this datasheet is subject to U.S. Export Law as contained in ITAR or the EAR regulations.

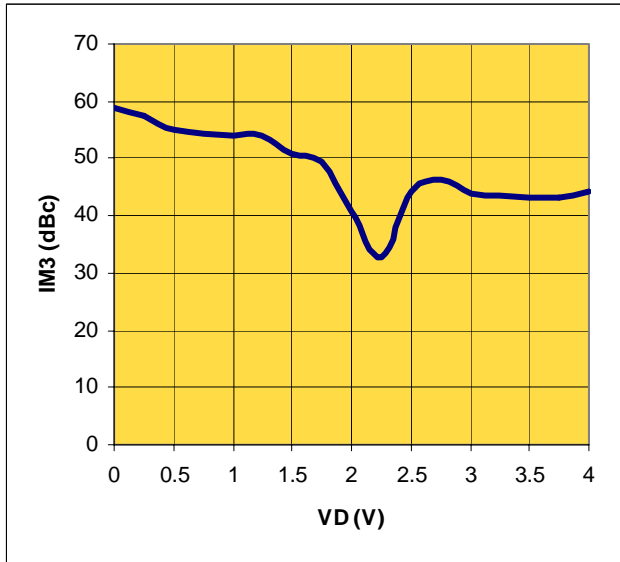


Preliminary Datasheet

Revision: May 2007

Measured Performance Characteristics (Typical Performance at 25°C)
Two-Tone measurement @ 0 dBm / tone

IM3 Vs. VD1 (or Vd2) at 38.5 GHz



Preliminary Information: The data contained in this document describes new products in the sampling or preproduction phase of development and is for information only. Northrop Grumman reserves the right to change without notice the characteristic data and other specifications as they apply to this product. The product represented by this datasheet is subject to U.S. Export Law as contained in ITAR or the EAR regulations.

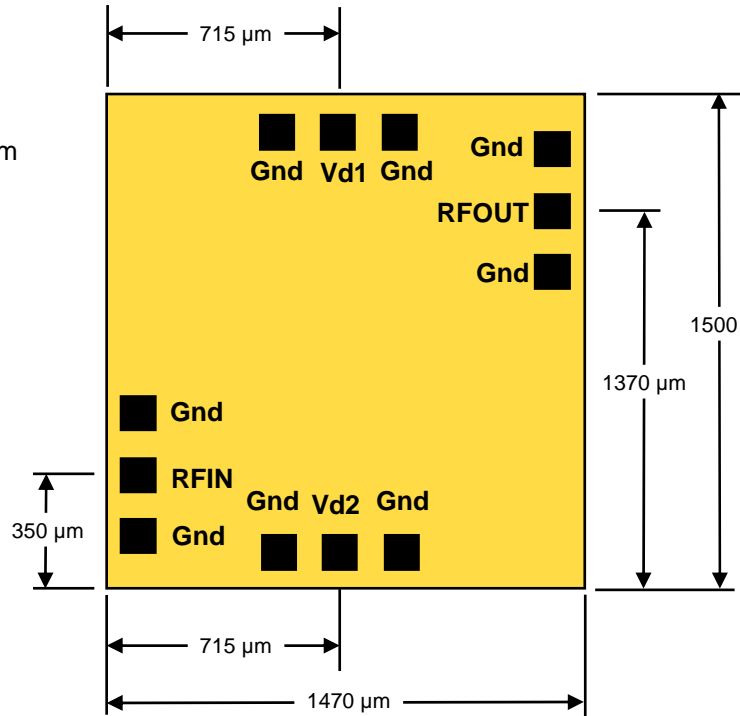


Preliminary Datasheet

Revision: May 2007

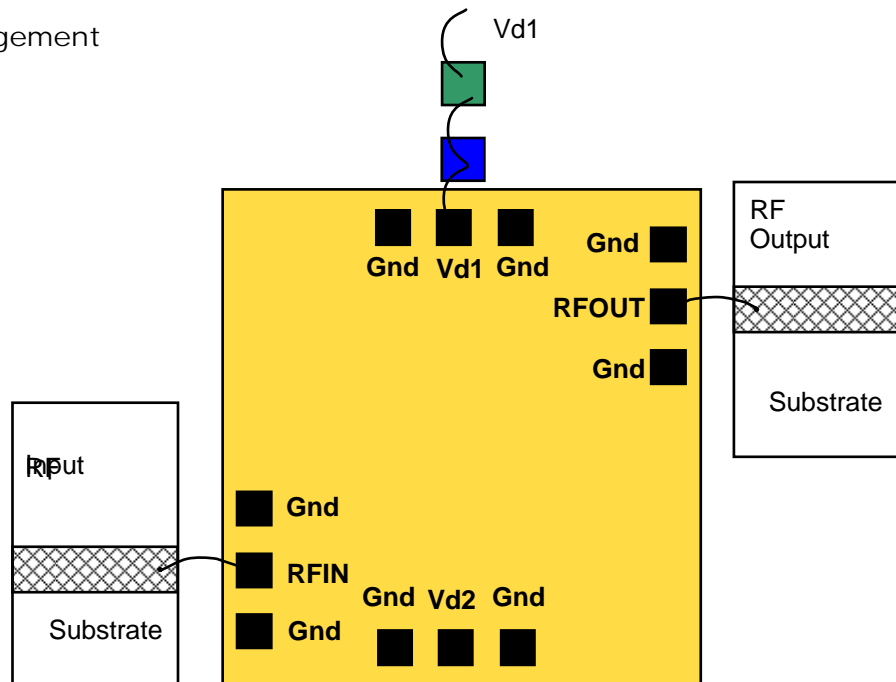
Die Size and Bond Pad Locations

X Dimension: $1470 \pm 25 \mu\text{m}$
 Y Dimension: $1500 \pm 25 \mu\text{m}$
 Bond Pad Dimension: $101 \times 101 \mu\text{m} \pm 0.5 \mu\text{m}$
 Chip Thickness: $101 \pm 5 \mu\text{m}$



Suggested Bonding Arrangement

= 0.1uF
 = 100 pF



Recommended Assembly Notes

1. Bypass caps should be 100 pF (approximately) ceramic (single-layer) placed no farther than 30 mils from the amplifier.
2. Best performance obtained from use of <10 mil (long) by 1.5 by 0.5 mil ribbons on input and output.
3. Part can be biased from either side.

Preliminary Information: The data contained in this document describes new products in the sampling or preproduction phase of development and is for information only. Northrop Grumman reserves the right to change without notice the characteristic data and other specifications as they apply to this product. The product represented by this datasheet is subject to U.S. Export Law as contained in ITAR or the EAR regulations.