

X=2200 μm Y=650 μm

Applications

- ◆ Point-to-Point Digital Radios
- ◆ Point-to-Multipoint Digital Radios

Features

- ◆ GaAs HBT
- ◆ Output Frequencies: 20 to 30 GHz
- ◆ Fundamental Frequencies: 10 to 15 GHz
- ◆ Conversion Gain: -13 dB (Typ.)
- ◆ Input Drive Level: 13 dBm (Typ.)
- ◆ Die Size: 1.3 sq. mm

Product Description

The XDB112 is a monolithic HBT passive multiplier designed for use in commercial digital radios and wireless LANs. To ensure rugged and reliable operation, HBT 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.

Performance Characteristics (T_{OP}= 25°C)

Specification	Min	Typ	Max	Unit
Input Frequency	10		15	GHz
Output Frequency	20		30	GHz
Input Power		13		dBm
Output Power		0		dBm

Absolute Maximum Ratings (T_{OP} = 25°C)

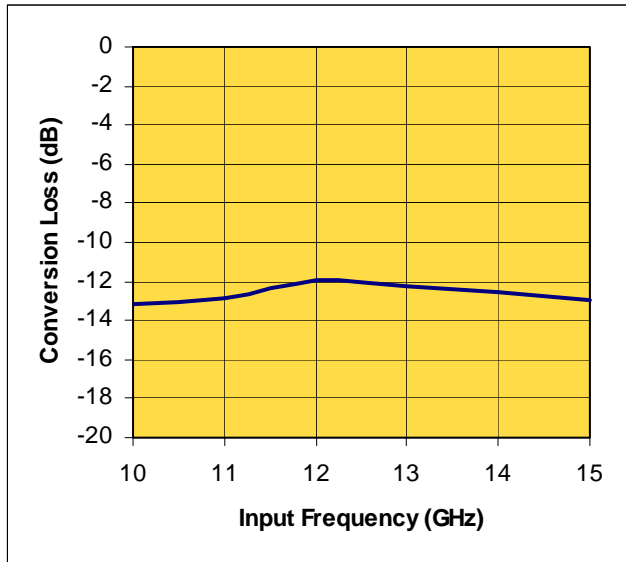
Parameter	Min	Max	Unit
Assy. Temperature (60 seconds)		300	°C

Note: The data contained in this document is for information only. Northrop Grumman reserves the right to change without notice the specifications, designs, prices or conditions of sale, 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.



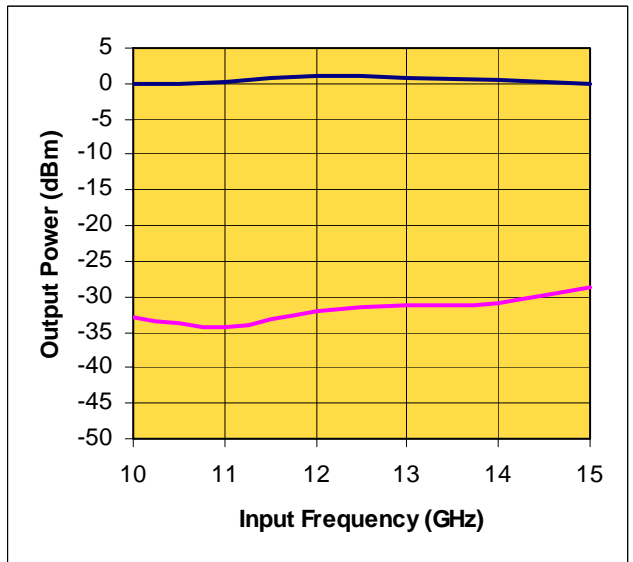
Measured Performance Characteristics ($T_{OP} = 25^{\circ}C$)

Conversion Loss*



*RF Input = 13 dBm

Output Power*



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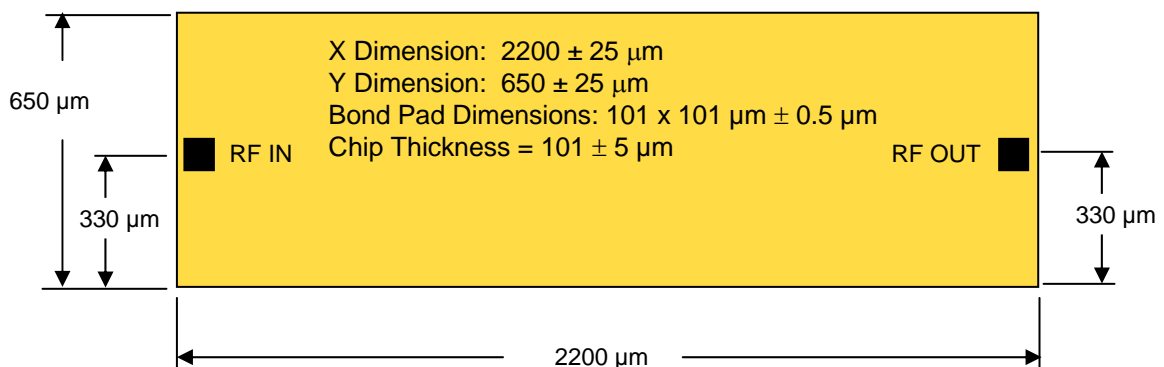
Product Datasheet

Revision: May 2007

Measured Performance Characteristics ($T_{OP} = 25^{\circ}C$)
RF Input = 13 dBm

Freq (GHz)	S11 Mag	S11 Ang	S21 Mag	S21 Ang	S12 Mag	S12 Ang	S22 Mag	S22 Ang
10.0	0.65	-52.65	0.01	-157.65	0.01	-63.72	0.96	-139.13
11.0	0.44	-60.73	0.01	144.22	0.05	-142.64	0.88	-151.61
12.0	0.30	-52.61	0.01	96.59	0.02	86.97	0.95	-158.23
13.0	0.35	-32.94	0.01	54.11	0.00	74.25	0.96	-171.28
14.0	0.41	-42.42	0.01	23.21	0.01	133.91	0.97	176.45
15.0	0.41	-66.42	0.01	-5.83	0.01	108.19	0.97	164.03
16.0	0.34	-105.67	0.01	-45.87	0.01	76.56	0.98	151.53
17.0	0.35	-165.11	0.01	-51.24	0.02	42.53	0.97	138.74
18.0	0.48	136.94	0.01	-39.94	0.02	10.84	0.97	125.53
19.0	0.66	98.00	0.02	-42.49	0.01	-12.16	0.96	111.84
20.0	0.78	68.48	0.02	-49.33	0.02	-28.39	0.95	97.73
21.0	0.86	47.57	0.02	-48.87	0.02	-48.60	0.93	80.44
22.0	0.88	28.79	0.02	-68.45	0.02	-67.13	0.92	67.88
23.0	0.90	13.19	0.03	-91.38	0.03	-90.90	0.90	51.78
24.0	0.89	-1.41	0.03	-117.97	0.03	-117.84	0.88	35.06
25.0	0.87	-16.76	0.03	-144.85	0.03	-145.02	0.85	17.46
26.0	0.82	-34.13	0.03	-173.77	0.04	-174.83	0.83	-0.64
27.0	0.76	-55.16	0.04	153.52	0.04	153.25	0.80	-18.32
28.0	0.67	-84.29	0.03	119.00	0.03	119.12	0.78	-36.39
29.0	0.57	-125.79	0.02	81.84	0.02	81.34	0.76	-54.35
30.0	0.55	179.48	0.02	37.74	0.02	38.39	0.75	-71.17

Die Size and Bond Pad Locations



Recommended Assembly Notes

1. Best performance obtained from use of <10 mil (long) by 3 by 0.5 mil ribbons on input and output.

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