



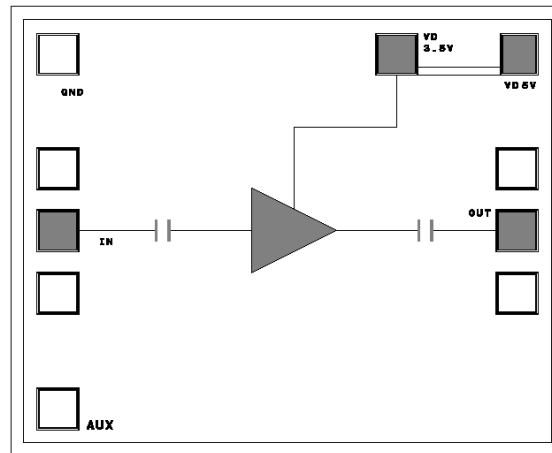
Features

- Single Biasing Voltage (Self Biased)
- Frequency: 5 - 20GHz
- Small Signal Gain Typical :
25dB@6GHz
21dB@18GHz
- Gain Flatness: ± 2.0 dB Typical
- Noise Figure: 1.5dB Typical
- P1dB: 16dBm Typical
- Power Supply: +5V/80mA
- Input/Output: 50 Ω
- Chip Size: 1.3 x 1.05 x 0.1mm

Typical Applications

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Functional Block Diagram

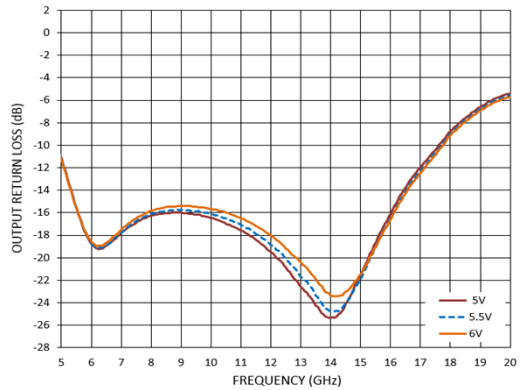
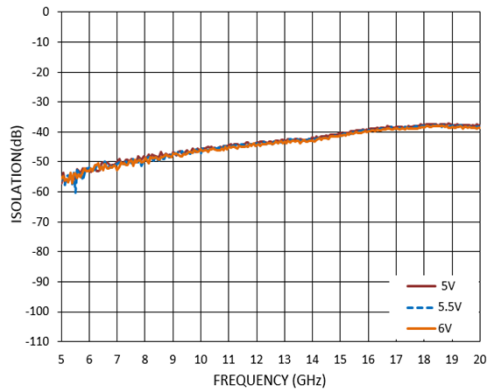
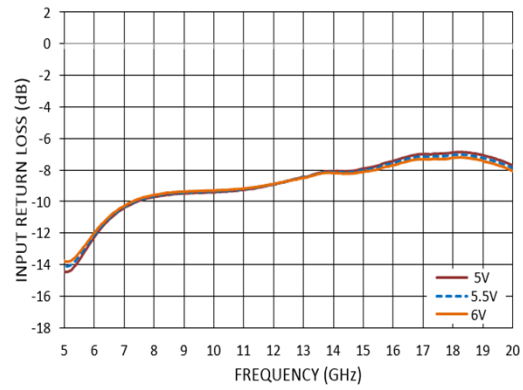
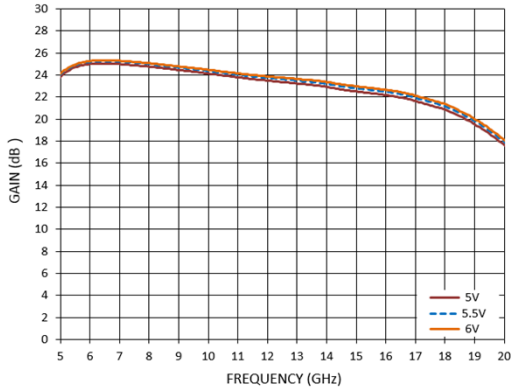


Electrical Specifications

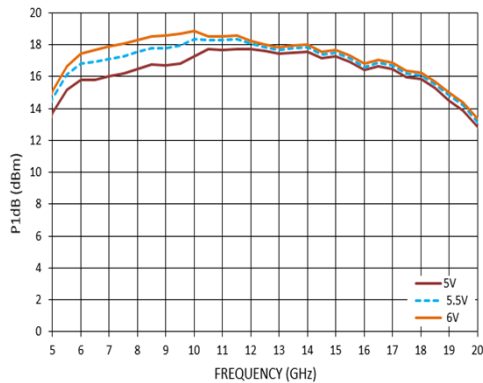
TA = +25°C, VD = +5V, IDD = 80mA Typical

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	5-12			12-20			GHz
Small Signal Gain	23	24		17	22		dB
Gain Flatness		± 1.5			± 1.7		dB
Noise Figure	1.4	1.5	2.5		1.5	2	dB
P1dB-Output 1dB Compression	14	16	18	12	17	18	dBm
Past - Saturated Output Power		19			19		dBm
OIP3- Output Third Order Intercept		30			30		dBm
Input Return Loss		8			8		dB
Output Return Loss		14			14		dB

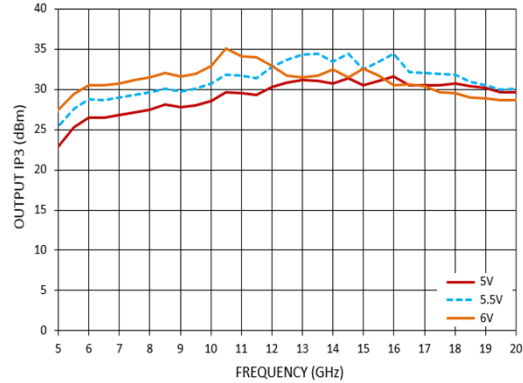
Measurement Plots: S-parameters



Measurement Plots: P1dB

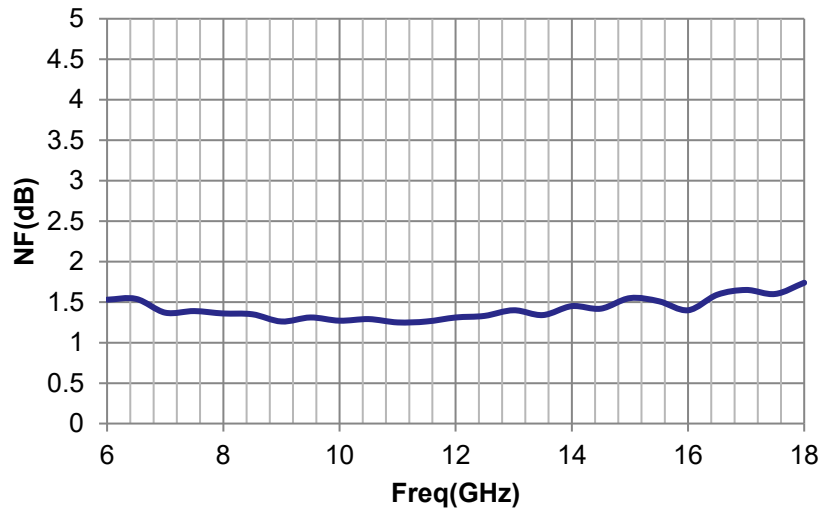


Measurement Plots: OIP3





Measurement Plots: Noise Figure



Absolute Maximum Ratings

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)(VD=+5V)	+20dBm
Channel Temperature	150 °C
Continuous P _{diss} (T = 85 °C)(derate 24 mW/°C above 85 °C)	25dBm
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55 to +85 °C
Storage Temperature	-65 to +150 °C

Typical Supply Current vs. V_{dd}

VD (V)	IDD (mA)
+5	80
+5.5	97
+6	120

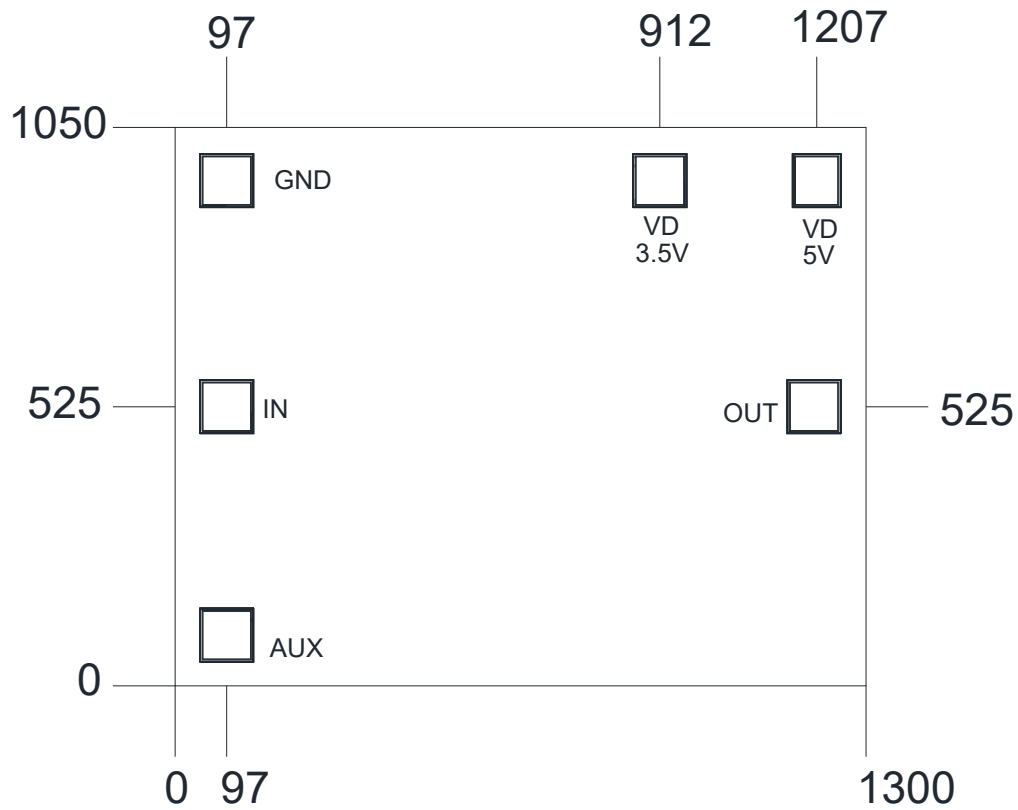


ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS



Outline Drawing:

All Dimensions in μm

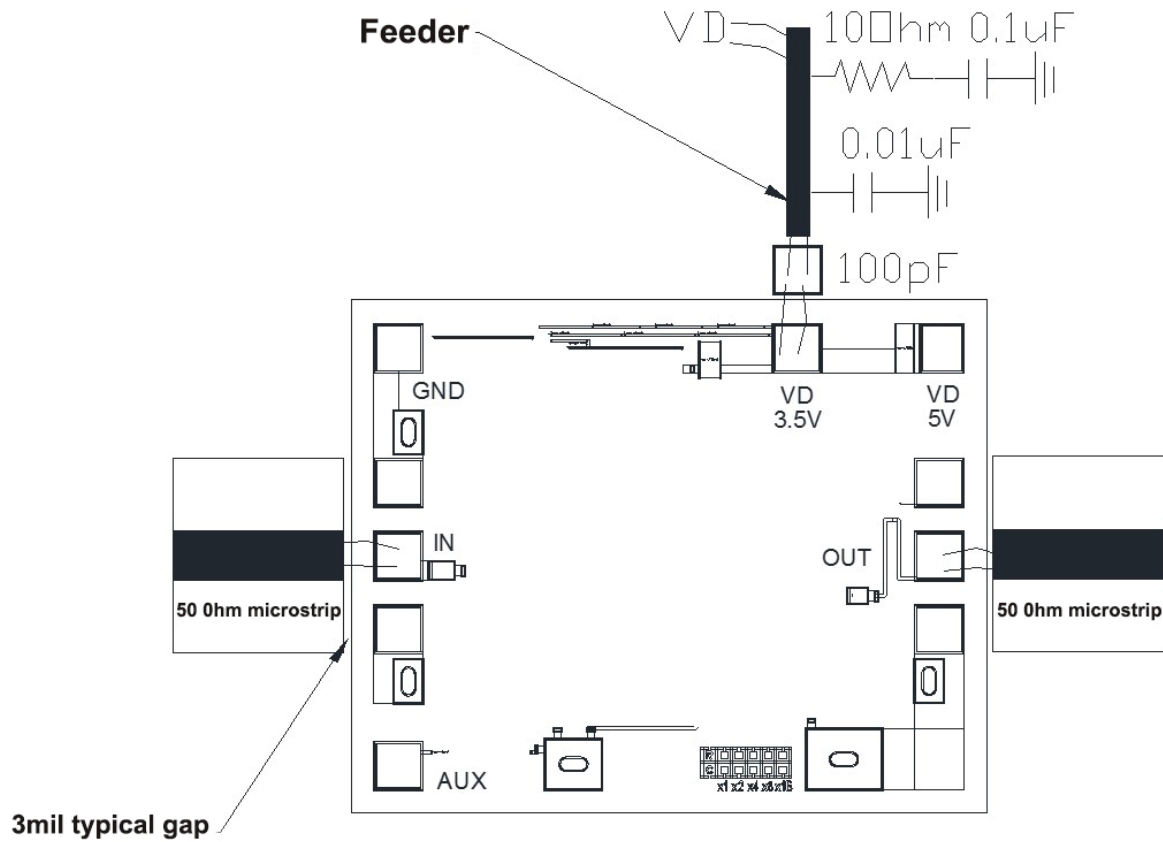


Notes:

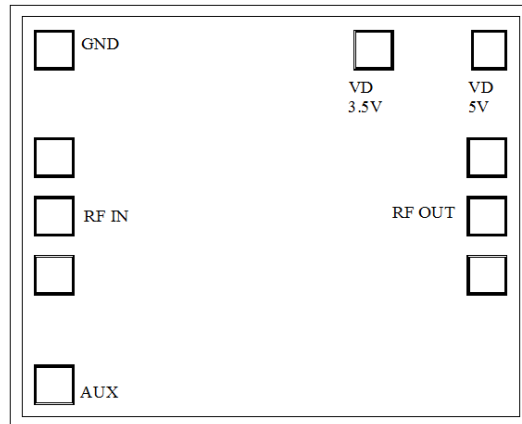
1. Die thickness: 100 μm
2. DC bond pad is 100 x 100 μm^2
3. RF IN/OUT bond pad is 100 x 100 μm^2
4. DC bond pad is 100 x 100 μm^2
5. No DC Blocking Capacitor needed for RF input & RF output
6. Bond pad metalization: Gold
7. Backside metalization: Gold
8. Backside of the die (GND)



Assembly Drawing



No	Function	Description
1	RF IN	Signal input terminal, connected to 50Ω circuit
2	RF OUT	Signal output terminal, connected to 50Ω circuit
3	VD	Connect to external 100pF and 0.01uF bypass capacitors.
9	GND1	Ground pad.



Biasing and Operation

Performance is optimized when the drain voltage VD set to +5.0 V

Turn ON procedure:

1. Connect Input and Output with 50 Ohm source/load.
2. Apply positive drain voltage VD set to +5.0 V
3. Apply RF signal.

Turn OFF procedure:

1. Turn off RF signal
2. Turn off positive drain voltage VD

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