

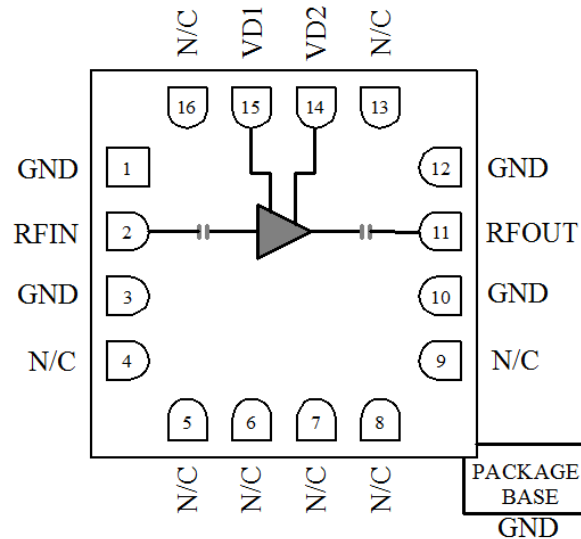
## Features

- Single Biasing Voltage (Self Biased)
- Frequency: 6 - 20GHz
- Small Signal Gain: 15dB Typical
- Gain Flatness:  $\pm 1.0$ dB Typical
- Noise Figure: 5.5dB Typical
- P1dB: 19dBm Typical
- Supply voltage: VD1&VD2=+5V
- Input/Output: 50 $\Omega$
- Package Size : 3 x 3x 0.7mm

## Typical Applications

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

## Functional Block Diagram



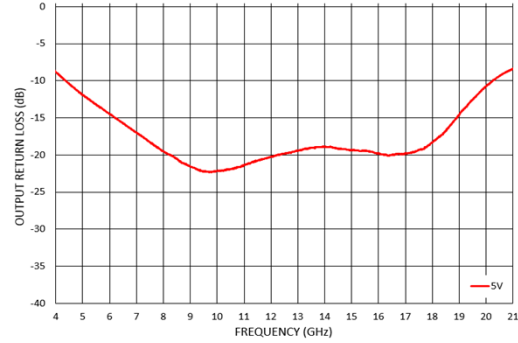
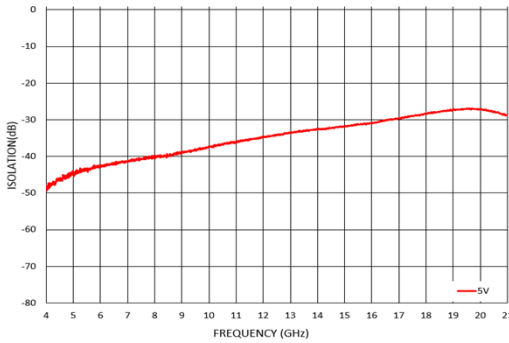
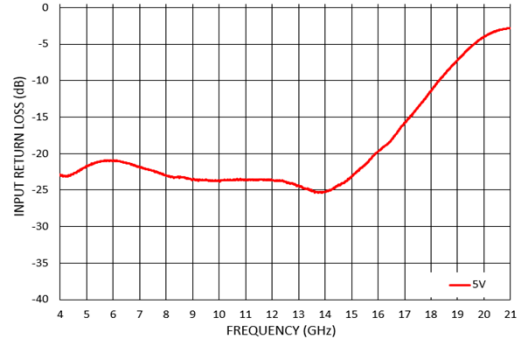
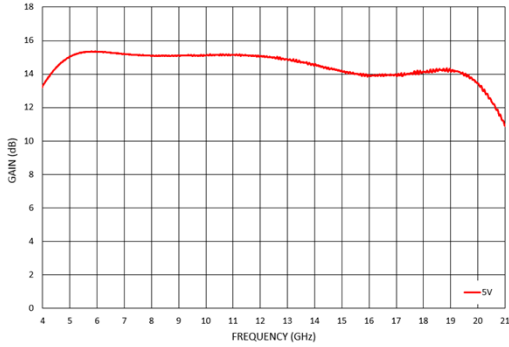
## Electrical Specifications

TA = +25°C, VD1&VD2 = +5V, IDD = 107mA Typical

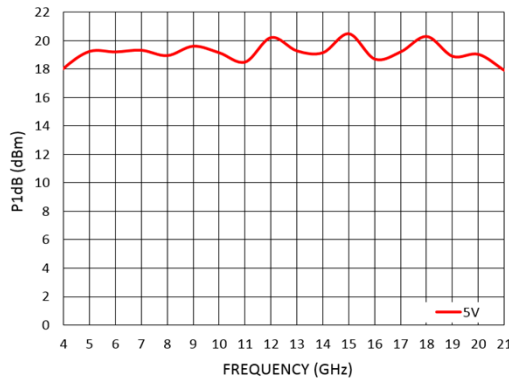
Parameters	Min.	Typ.	Max.	Units
Frequency	6		20	GHz
Small Signal Gain	12	14.5		dB
Gain Flatness		$\pm 1.0$		dB
Noise Figure		5.5		dB
P1dB - Output 1dB Compression	17	19		dBm
Past - Saturated Output Power		20		dBm
OIP3 - Output Third Order Intercept		29		dBm
Input Return Loss		12		dB
Output Return Loss		14		dB



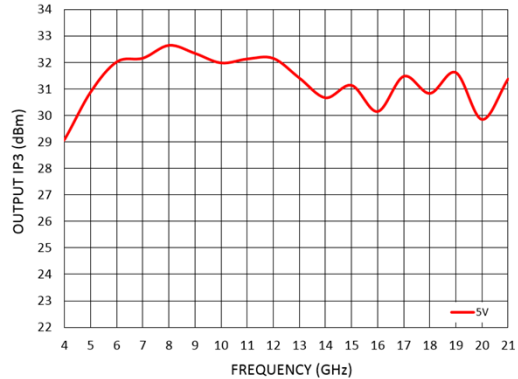
### Measurement Plots: S-parameters



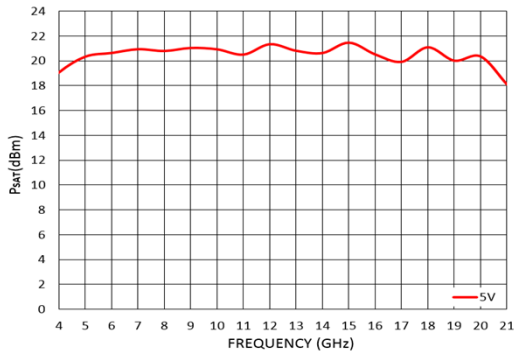
### Measurement Plots: P1dB



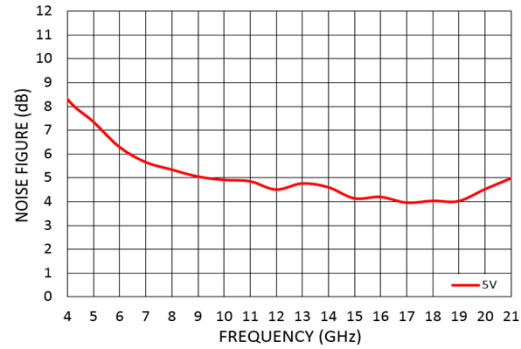
### Measurement Plots: OIP3



### Measurement Plots: PSAT



### Measurement Plots: Noise Figure



### Absolute Maximum Ratings

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)(VD=+5V)	+20dBm
Channel Temperature	175°C
Continuous P <sub>diss</sub> (T = 85 °C) (derate 8.3mW/°C above 85 °C)	0.75W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-55°C to +150 °C

### Typical Supply Current vs. VD

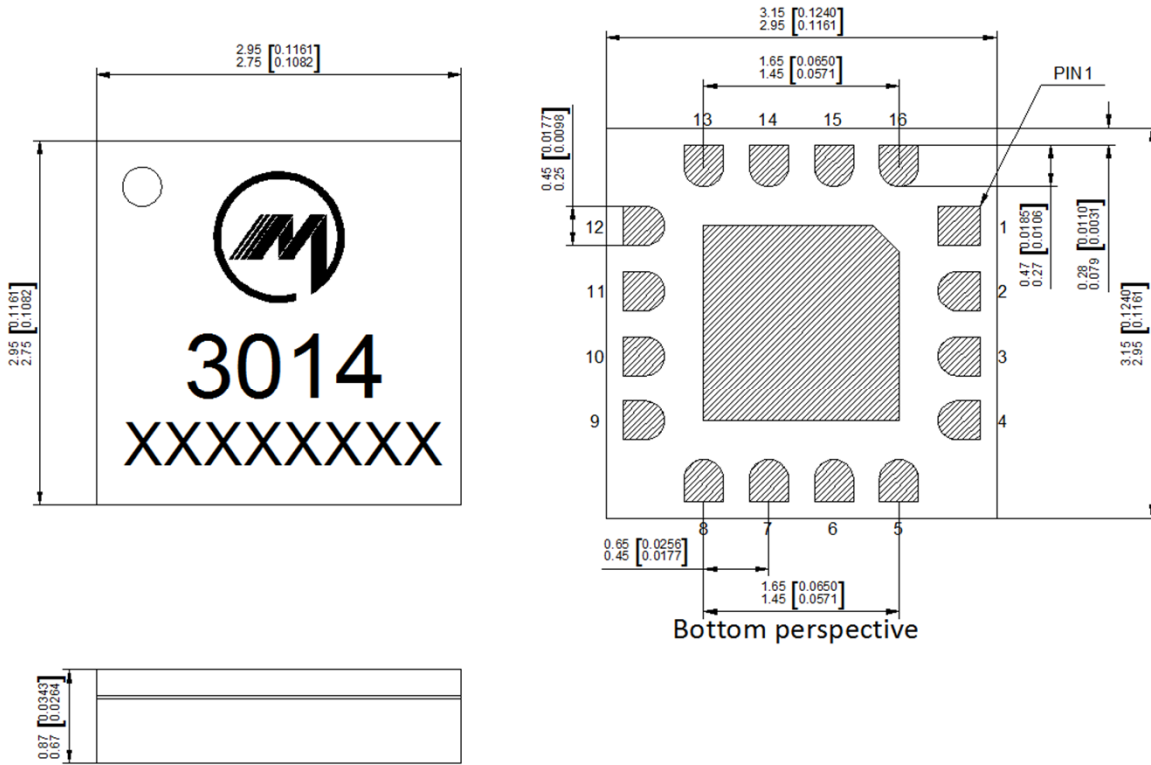
VD(V)	IDD (mA)
+5	107



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



### Outline Drawing: All Dimensions in mm[inches]

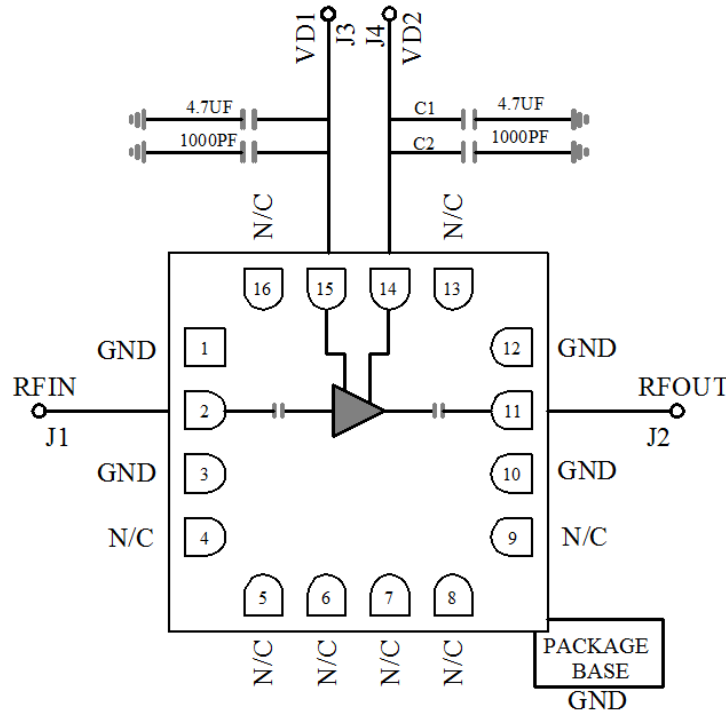


#### Notes:

1. Package body material : Alumina.
2. Lead and ground paddle plating: Gold flash over nickel.
3. Dimensions are in millimeters(inches).
4. Lead spacing tolerance is non-cumulative.

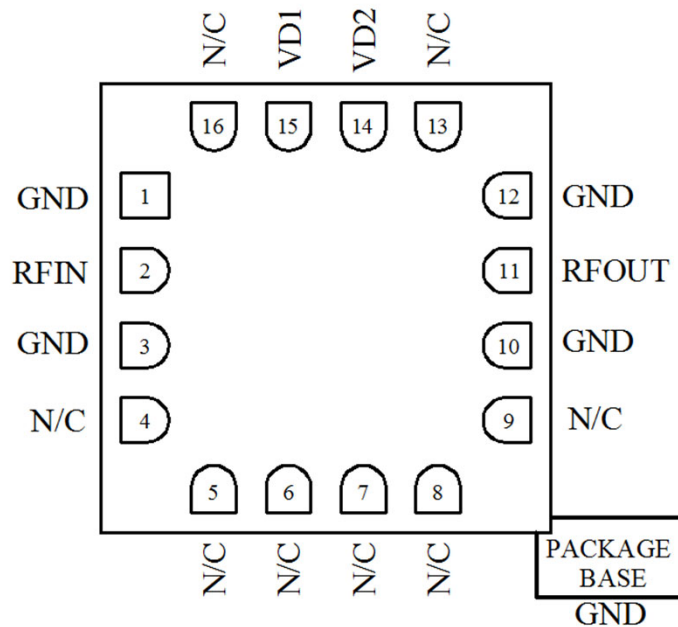


### Assembly Drawing



### Pin Descriptions

No	Function	Description
4,5,6,7,8,9,13,16	NC	No connection. These pins may be connected to RF ground. Performance will not be affected.
2	RF IN	RF Signal Input. This pad is ac-coupled and matched to 50 Ω.
11	RF OUT	RF Signal Output. This pad is ac-coupled and matched to 50 Ω.
14,15	VD1&VD2	Connect to external 1000pF and 4.7uF bypass capacitors.
1,3,10,12	GND	These pins & exposed ground paddle must be connected to RF/DC ground
	GND	Package bottom must be connected to RF/DC ground



## Biasing and Operation

### Turn ON procedure:

1. Connect GND to RF and dc ground.
2. Apply positive drain voltage VD1&VD2 and set to +5.0 V .
3. Apply RF signal.

### Turn OFF procedure:

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

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