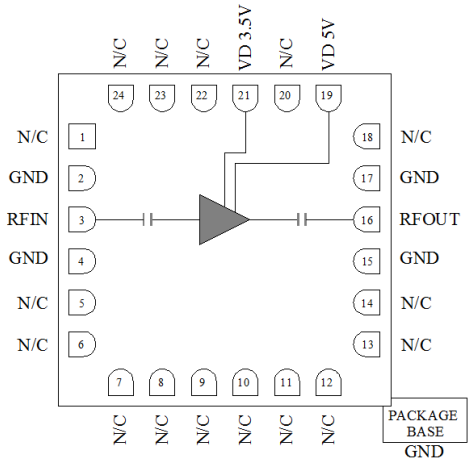
Features

- Single Biasing Voltage (Self Biased)
- Frequency: 5-20GHz
- Small Signal Gain Typical :
  24.5dB@6GHz
  20.5dB@18GHz
- Gain Flatness: ±2.5dB Typical
- Noise Figure: 1.8dB Typical
- P1dB: 16dBm Typical
- Power Supply: +3.5V@77mA;+5V@80mA
- Input/Output: 50Ω
- Package Size : 4 x 4 x 0.8mm

Typical Applications

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

Functional Block Diagram

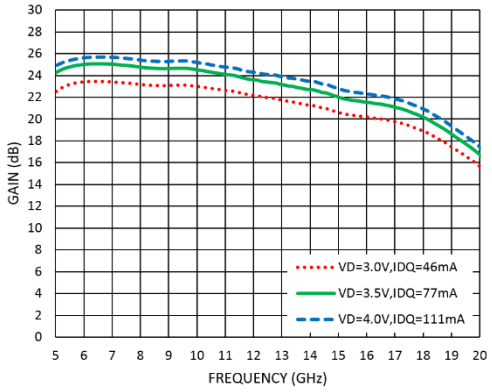


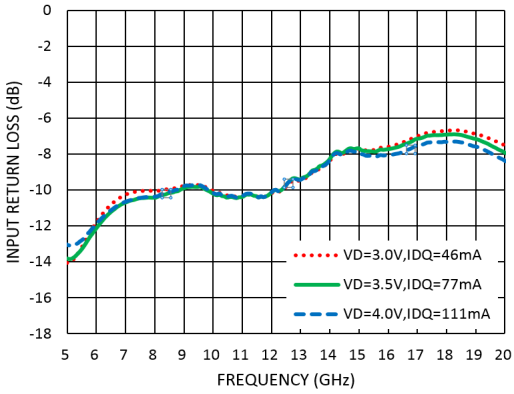
Electrical Specifications

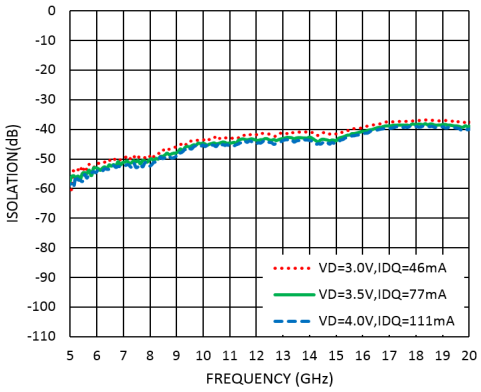
TA = +25°C, VD =+3.5V/+5V, IDD = 77/80mA Typical

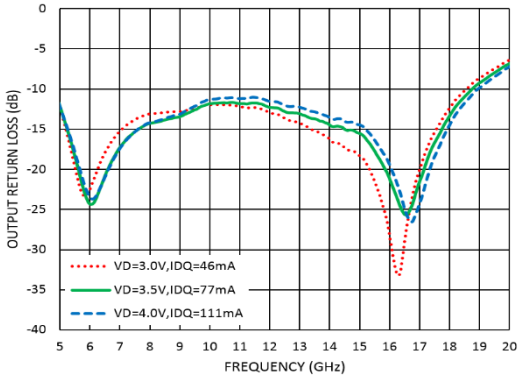
Parameters	VD=3.5V						VD=5V						Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency	5-12			12-20			5-12			12-20			GHz
Small Signal Gain	23	24		16	20		23	24.5		16.5	20.5		dB
Gain Flatness		±1.0			±3.0			±1.0			±3.0		dB
Noise Figure		1.8	2.3		2.1	3.0		1.8	2.3		2.3	3.0	dB
P1dB-Output 1dB Compression	13	14.5		15	16.5		13	15.5		12	15.5		dBm
Psat - Saturated Output Power		15.5			16.5			16.5			17.5		dBm
OIP3- Output Third Order Intercept		25			28			26			29		dBm
Input Return Loss		-10			-7			-9			-7		dB
Output Return Loss		-12			-12			-15			-10		dB

Measurement Plots: S-parameters
VD=3.5V

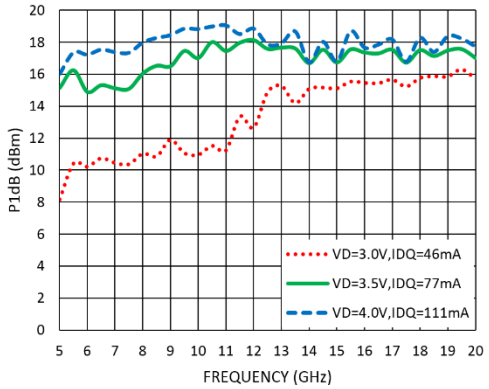




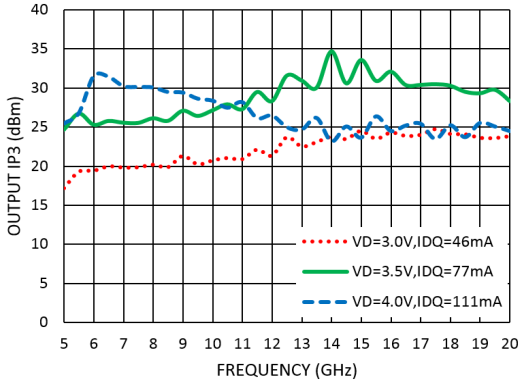




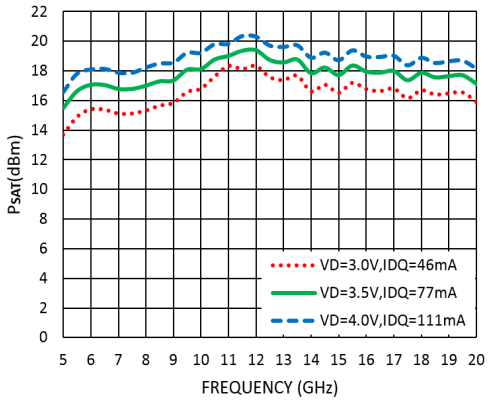
Measurement Plots: P1dB
VD=3.5V



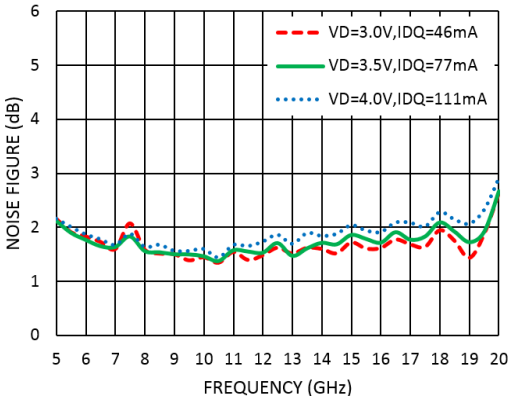
Measurement Plots: OIP3
VD=3.5V



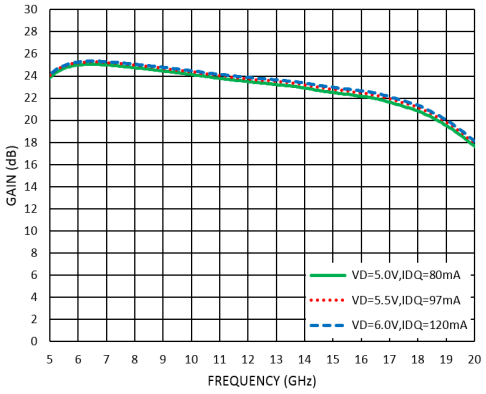
Measurement Plots: PSAT
VD=3.5V

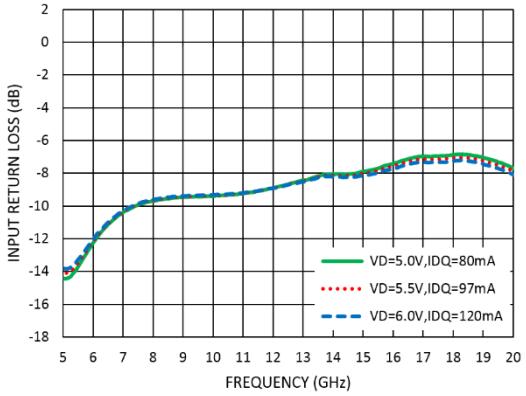


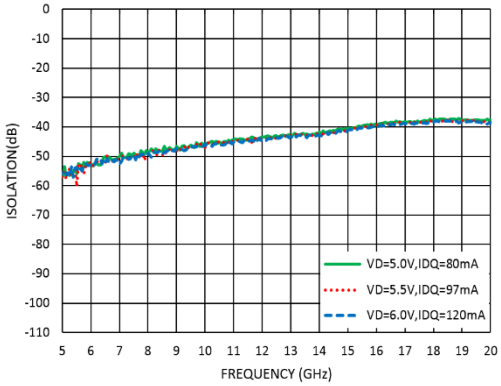
Measurement Plots: Noise Figure
VD=3.5V

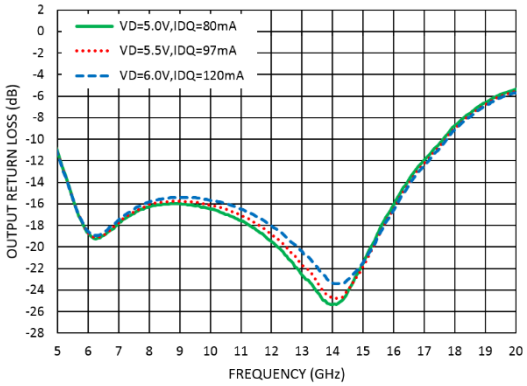


Measurement Plots: S-parameters
VD=5V

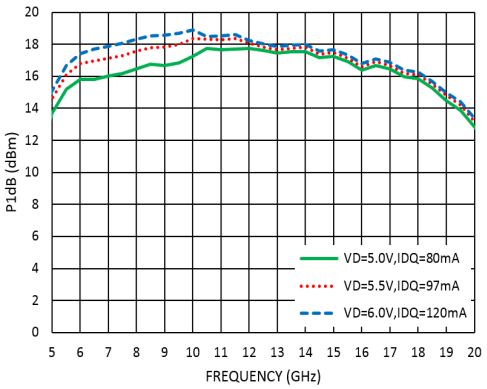




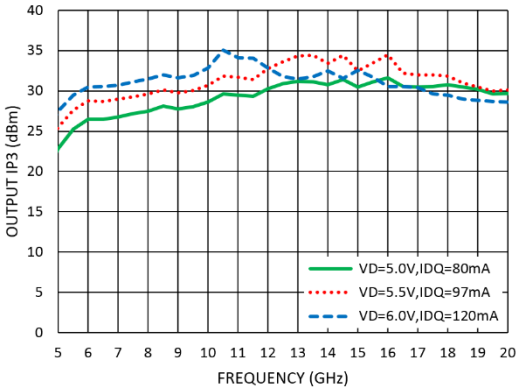




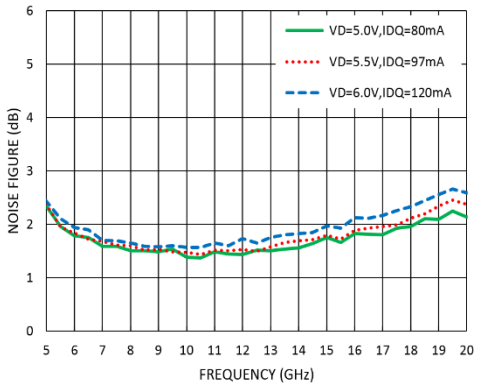
Measurement Plots: P1dB VD=5V



Measurement Plots: OIP3 VD=5V



Measurement Plots: Noise Figure VD=5V



Absolute Maximum Ratings

Drain Bias Voltage (VD)	+3.5V	+6V
	+5V	+7V
RF Input Power (RFIN)(VD)		+20dBm
Channel Temperature		150 °C
Continuous Pdiss (T = 85 °C)(derate 11.7 mW/°C above 85 °C)		1.05W
Thermal Resistance (channel to die bottom)		50°C/W
Operating Temperature		-55 to +85 °C
Storage Temperature		-65 to +150 °C

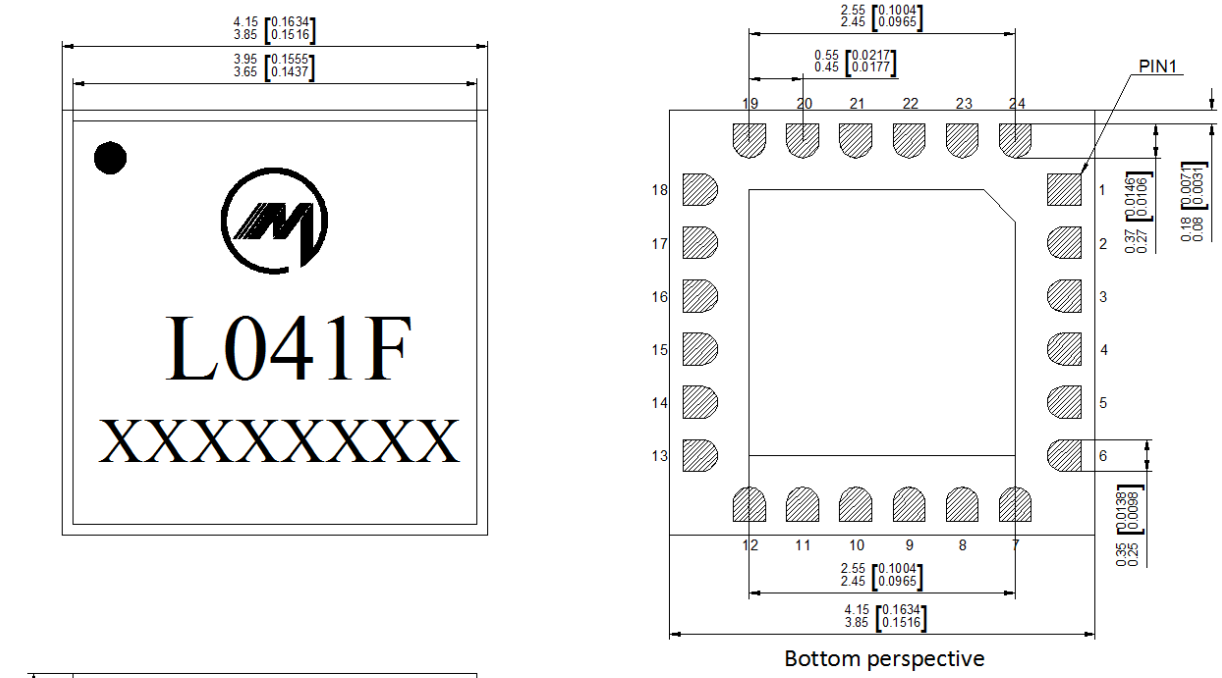
Typical Supply Current vs. VD

VD (3.5V)	IDD (mA)	VD (5V)	IDD (mA)
+3.0	46	+5.0	80
+3.5	77	+5.5	97
+4.0	111	+6.0	120

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing:

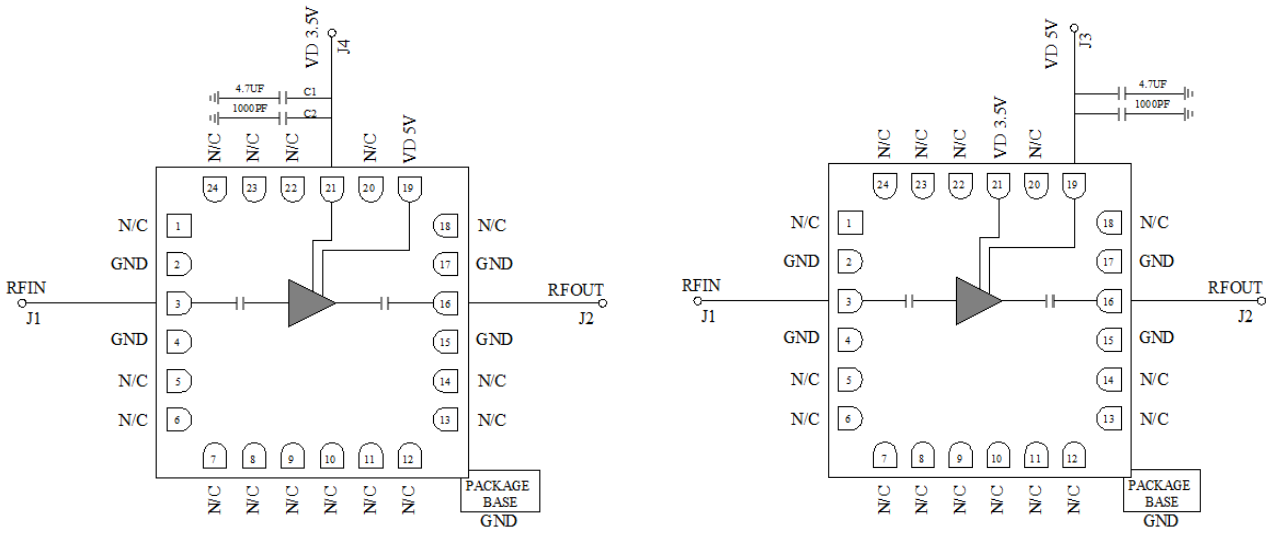
All Dimensions in mm[inches]



Notes:

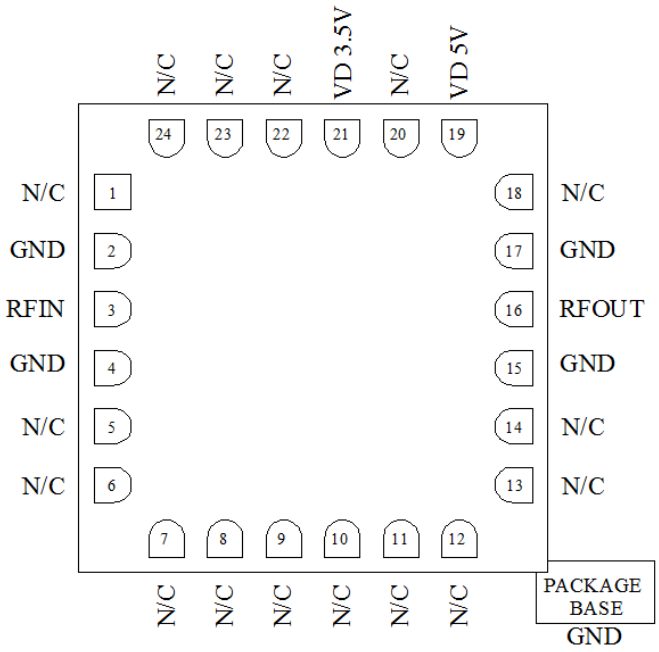
1. Package body material : Alumina.
2. Lead and ground paddle plating: Gold flash over nickel.
3. Dimensions are in millimeters(inches).
4. Lead spacing tolerance is non-cumulative.

Assembly Drawing



Pin Descriptions

No	Function	Description
1,5,6,7,8,9,10,11,12,13, 14,18,20,22,23,24	NC	No connection. These pins may be connected to RF ground. Performance will not be affected.
3	RF IN	RF Signal Input. This pad is ac-coupled and matched to 50 Ω.
16	RF OUT	RF Signal Output. This pad is ac-coupled and matched to 50 Ω.
19	VD 5V	Connect to external 1000pf and 4.7uf bypass capacitors.
21	VD 3.5V	Connect to external 1000pf and 4.7uf bypass capacitors.
2,4,15,17	GND	These pins & exposed ground paddle must be connected to RF/DC ground
25	GND	Package bottom must be connected to RF/DC ground



Biasing and Operation

Turn ON procedure:

1. Connect Input and Output with 50 Ohm source/load.
2. Apply positive drain voltage to +3.5V(VD) or +5.0 V (VD)
3. Apply RF signal.

Turn OFF procedure:

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