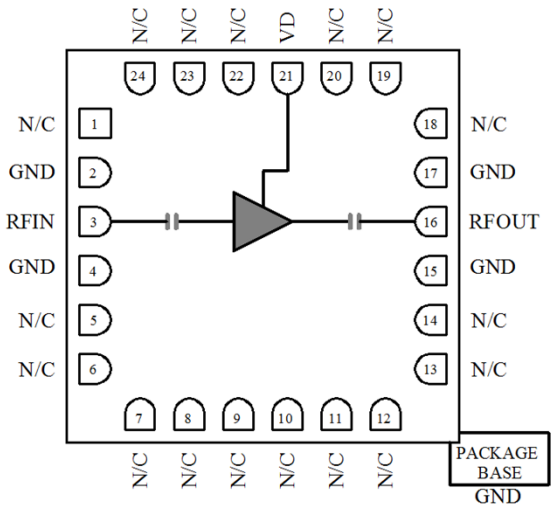
## Features

- Single Biasing Voltage (Self Biased)
- Frequency: 6 - 18GHz
- Small Signal Gain: 24dB Typical
- Gain Flatness: ±1.0dB Typical
- Noise Figure:1.5dB Typical
- P1dB: 14dBm Typical
- Power Supply: +5V/35mA
- Input/Output: 50Ω
- Package Size : 4 x 4x 0. 8mm

## Functional Block Diagram




## Typical Applications

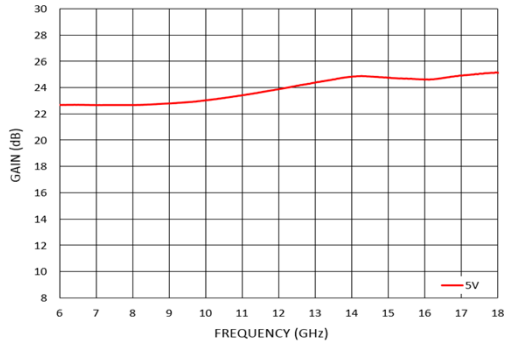
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

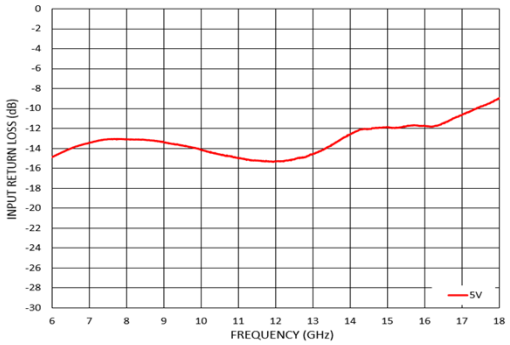
## Electrical Specifications

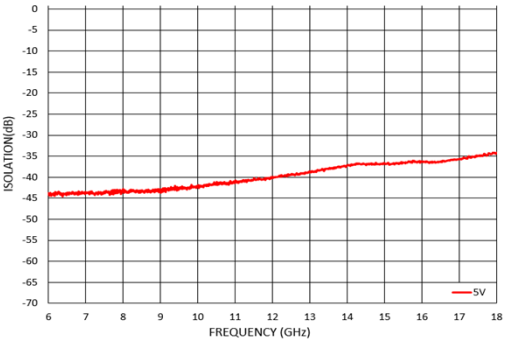
**TA = +25°C, VD = +5V, IDD = 35mA Typical**

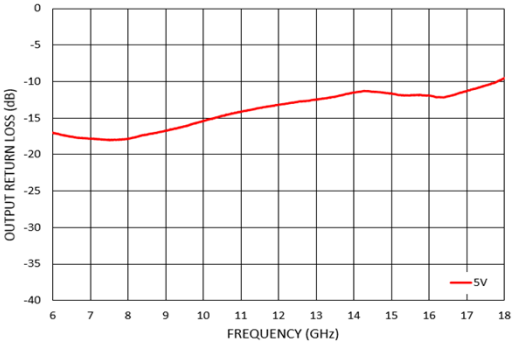
| Parameters | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| Frequency | 6 | | 18 | GHz |
| Small Signal Gain | 21.5 | 24 | | dB |
| Gain Flatness | | ±1.0 | | dB |
| Noise Figure | | 1.5 | | dB |
| P1dB - Output 1dB Compression | 12 | 14 | | dBm |
| Past - Saturated Output Power | | 15 | | dBm |
| OIP3 - Output Third Order Intercept | | 23 | | dBm |
| Input Return Loss | | 12 | | dB |
| Output Return Loss | | 10 | | dB |

## Measurement Plots: S-parameters

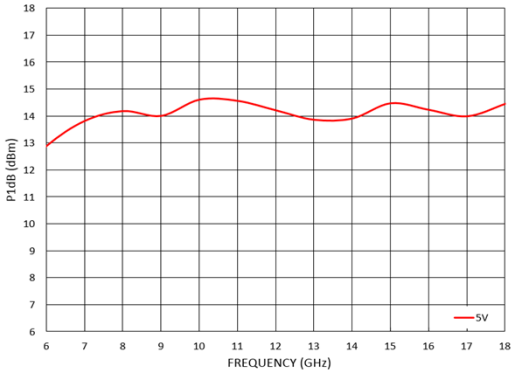


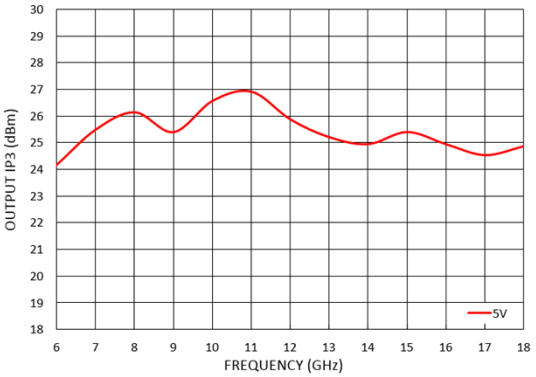



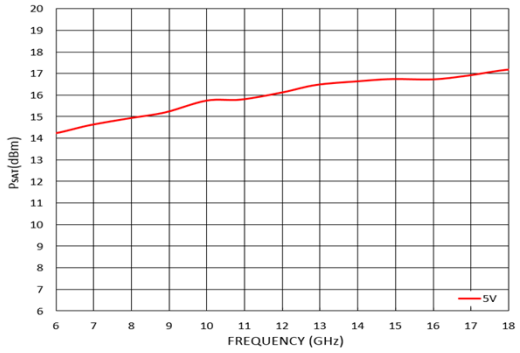

## Measurement Plots: P1dB



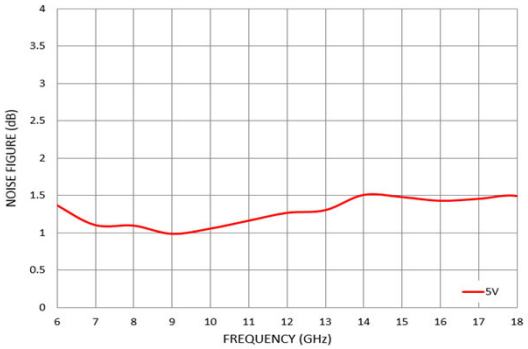

## Measurement Plots: OIP3



## Measurement Plots: PSAT




## Measurement Plots: Noise Figure




## Absolute Maximum Ratings

| | |
|---|---|
| Drain Bias Voltage (VD) | +7V |
| RF Input Power (RFIN)(VDD=+5V) | +20dBm |
| Channel Temperature | 175°C |
| Continuous Pdiss (T = 85 °C) (derate 3.3mW/°C above 85 °C) | 0.3W |
| Thermal Resistance (channel to die bottom) | 50°C/W |
| Operating Temperature | -55°C to +85 °C |
| Storage Temperature | -55°C to +150 °C |

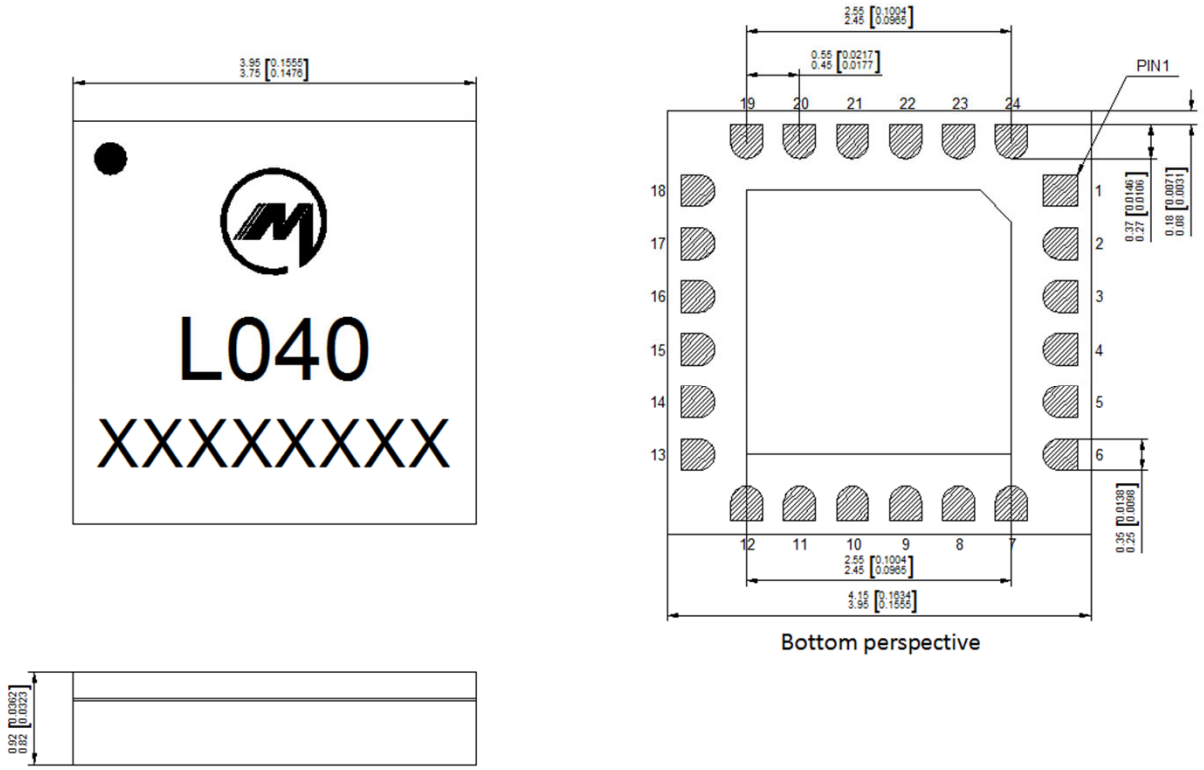
## Typical Supply Current vs. VD

| VD (V) | IDD (mA) |
|---|---|
| +5 | 35 |

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

## Outline Drawing:

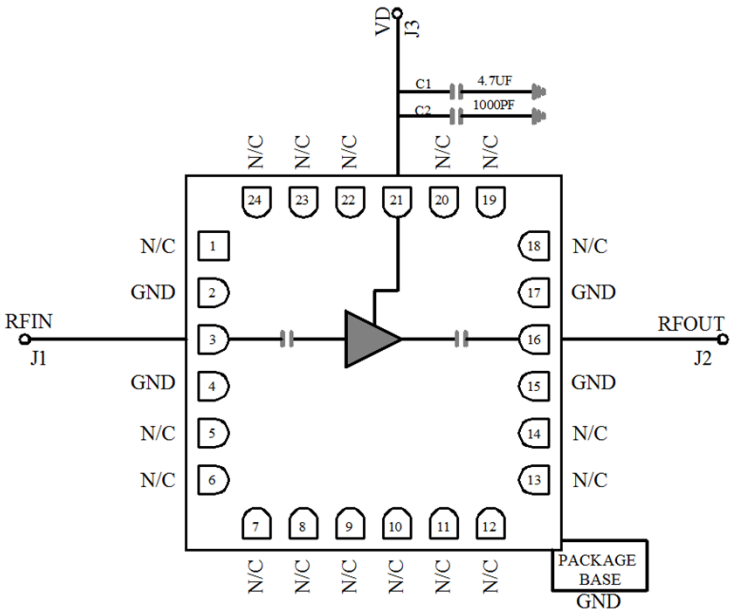
All Dimensions in mm[inches]




**Notes:**

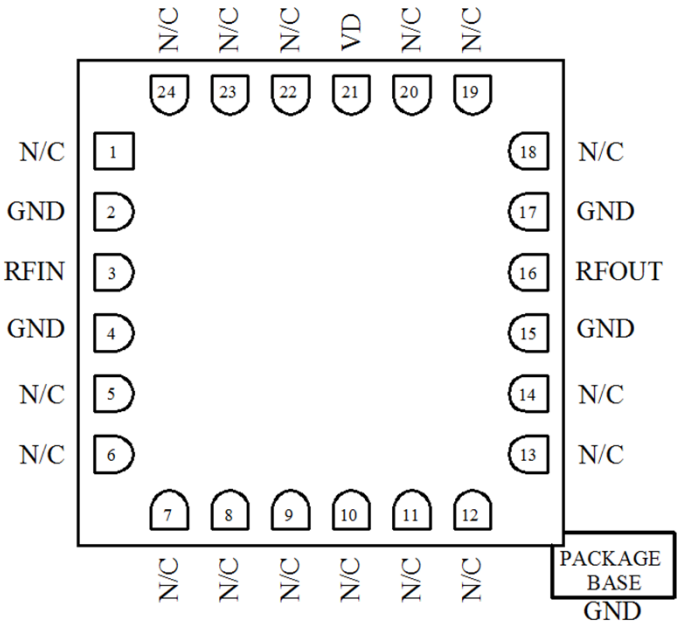
1. Package body material : Alumina.
2. Lead and ground paddle plating: Gold flash over nickel.
3. Dimensions are in millimeters(inches).
4. Lead spacing tolerance is non-cumulative.

## Assembly Drawing




## Pin Descriptions

| No | Function | Description |
|---|---|---|
| 1,5,6,7,8,9,10,11,12,13, 14,18,19,20,22,23,24 | 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. |
| 21 | VD | 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 |
| | 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 VD 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.