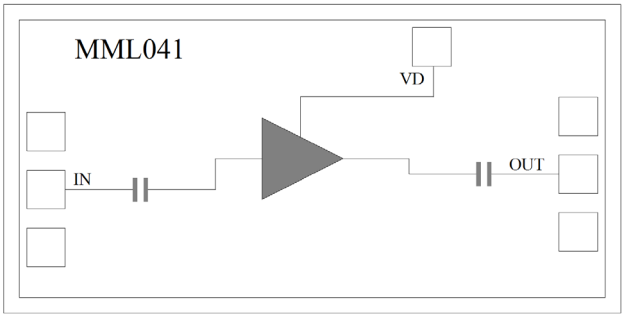
Features

- Single Biasing Voltage (Self Biased)
- Frequency: 6-18GHz
- Small Signal Gain: 21dBTypical
- Gain Flatness: ±0.5dB Typical
- Noise Figure:1.5dB Typical
- P1dB: 17dBm Typical
- Power Supply:VD=+5V@85mA
- Input/Output: 50Ω
- Chip Size: 1.6 x 0.8 x 0.1mm

Functional Block Diagram



Typical Applications

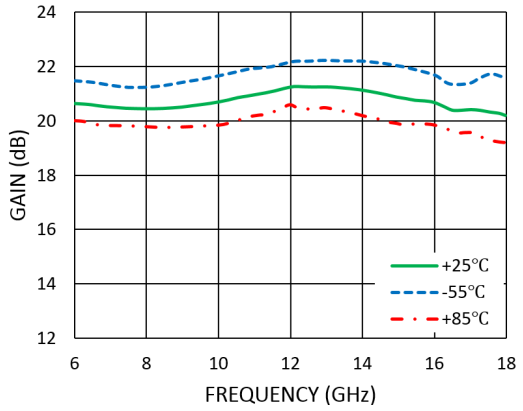
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

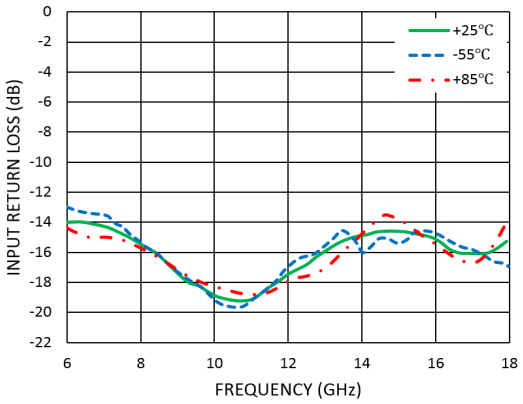
Electrical Specifications

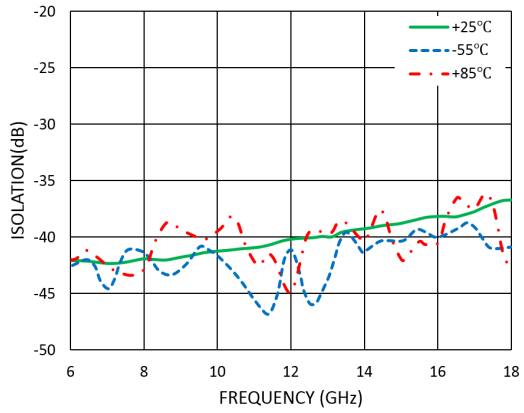
TA = +25°C, VD = +5V , IDD = 85mA Typical

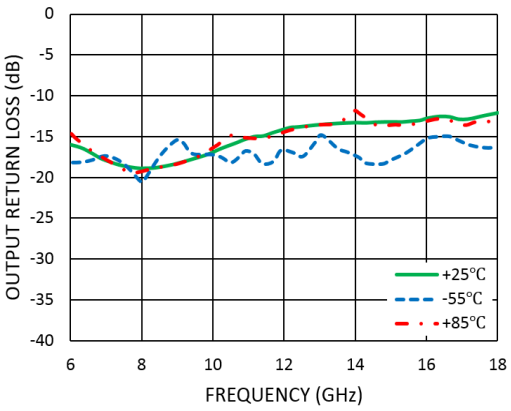
Parameters	Min.	Typ.	Max.	Units
Frequency	6		18	GHz
Small Signal Gain	20	21		dB
Gain Flatness		±0.5		dB
Noise Figure		1.5	1.7	dB
P1dB - Output 1dB Compression	16	17		dBm
Psat - Saturated Output Power		18		dBm
OIP3 - Output Third Order Intercept		27		dBm
Input Return Loss		-16		dB
Output Return Loss		-15		dB

Measurement Plots: S-parameters

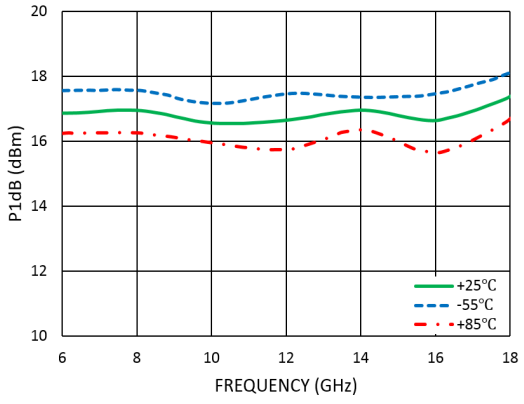




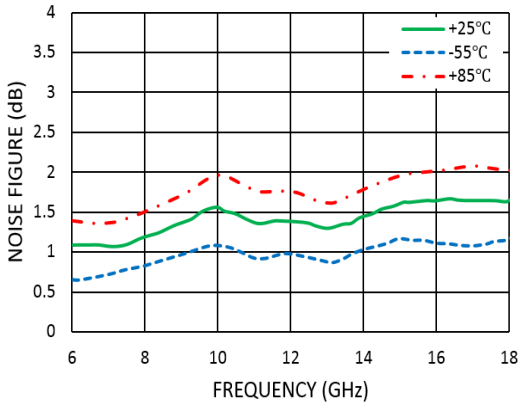




Measurement Plots: P1dB



Measurement Plots: Noise Figure



Absolute Maximum Ratings

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN))@(+5V)	+20dBm
Channel Temperature	175°C
Continuous Pdiss (T = 85 °C) (derate 7.2mW/°C above 85 °C)	0.65W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150 °C

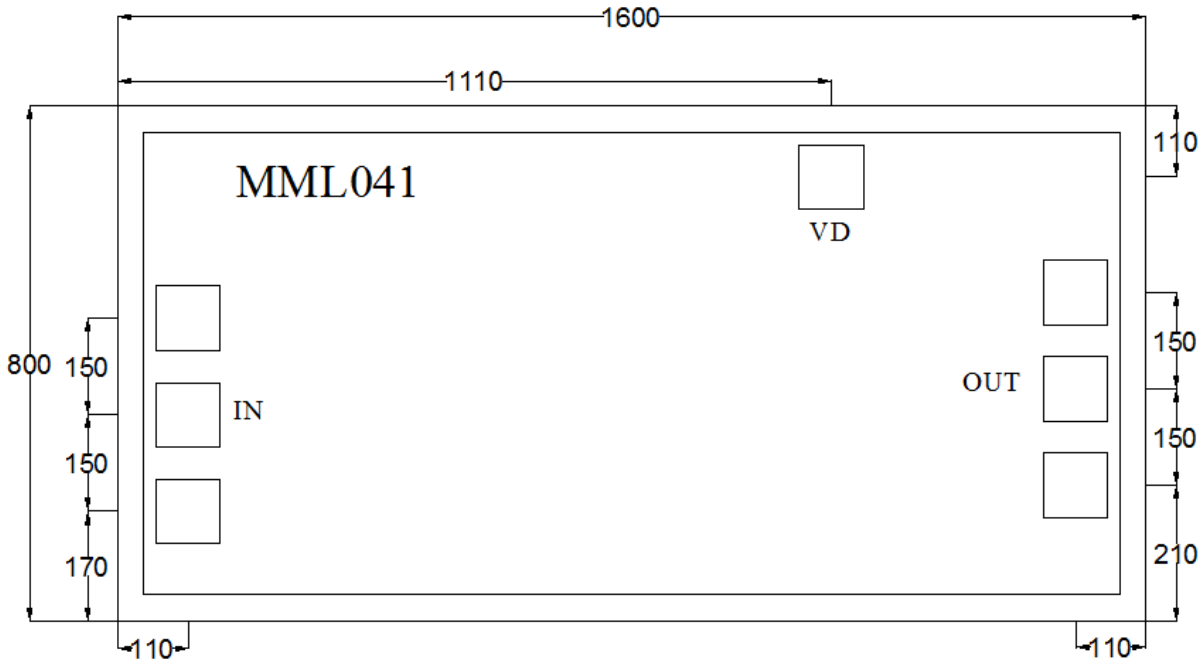
Typical Supply Current vs. VD

VD (V)	IDD (mA)
+5	85

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing:

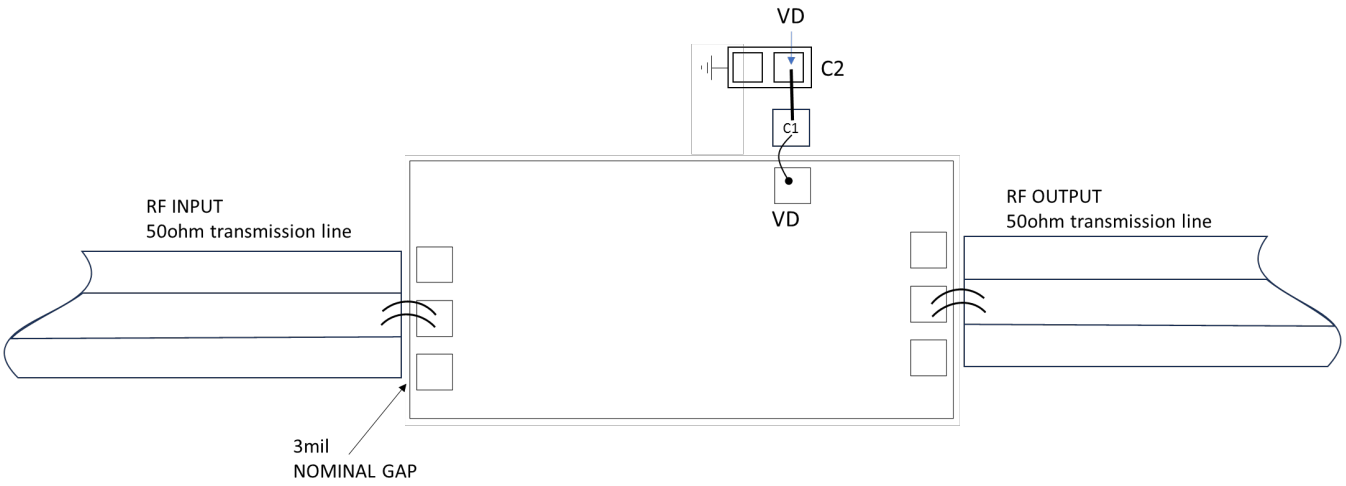
All Dimensions in µm



Notes:

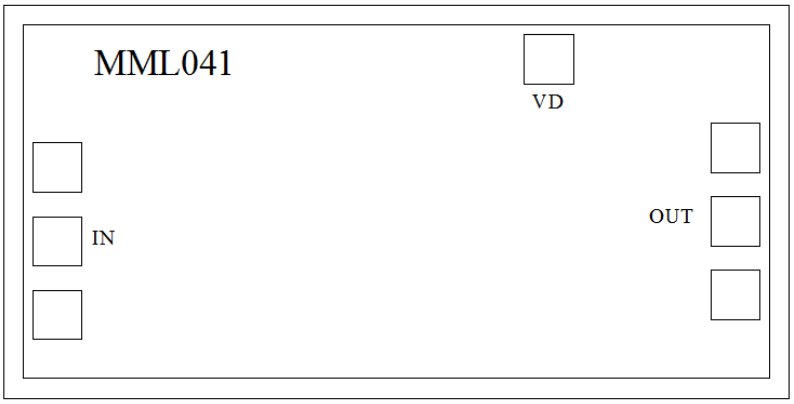
1. **Die thickness: 100µm**
2. **DC bond pad is 100*100µm^2**
3. **RF IN/OUT bond pad is 100*100µm^2**
4. **Bond pad metalization: Gold**
5. **Backside metalization: Gold**

Assembly Drawing



Item	Description
C1	100pF Example: Presidio Part: MVB3030X103M2H5C1
C2	1µF Example: KYOCERA AVX Part:116XK102M100TT

No	Function	Description
1	RF IN	RF signal input terminal; no blocking capacitor required.
2	RF OUT	RF signal output terminal; no blocking capacitor required.
3	VD	Drain Biases for the Amplifier. External bypass capacitors of 1µf and 100pf are required for these pads.
4	Die Bottom	Die bottom must be connected to RF and 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 +5V .
3. Apply RF signal.

Turn OFF procedure:

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