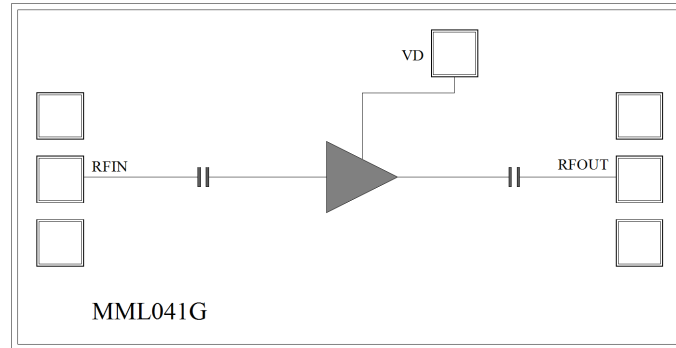




Features

- Single Biasing Voltage (Self Biased)
- Frequency: 3-18GHz
- Small Signal Gain: 20dB Typical
- Gain Flatness: ± 0.5 dB Typical
- Noise Figure: 1.5dB Typical
- P1dB: 17dBm Typical
- Power Supply: +5V@89mA
- Input/Output: 50 Ω
- Chip Size: 1.6 x 0.82 x 0.1mm

Functional Block Diagram



Typical Applications

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

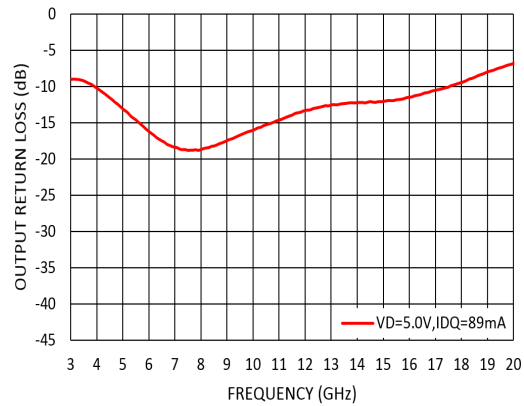
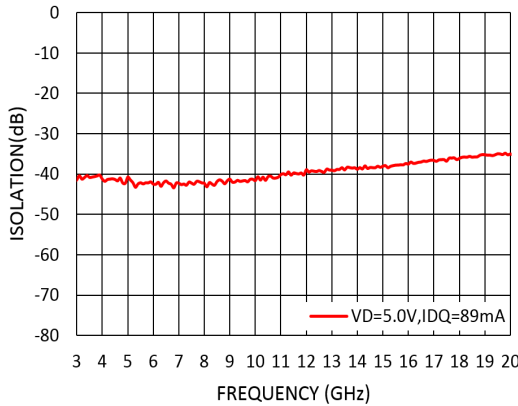
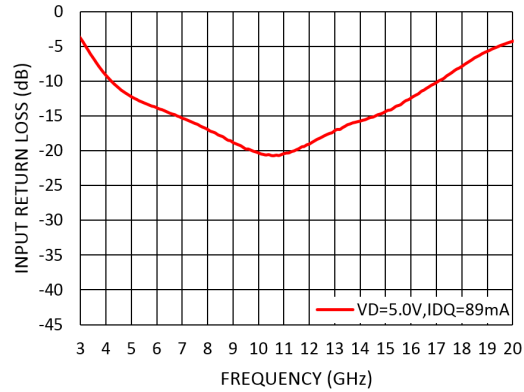
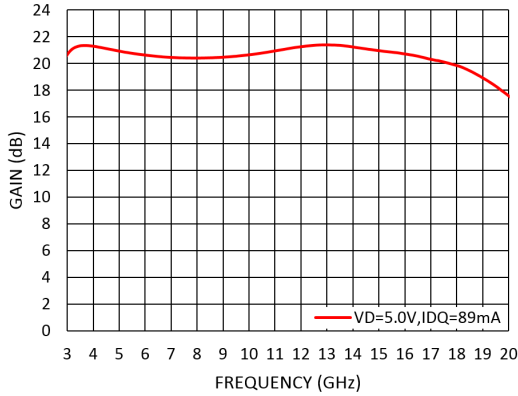
Electrical Specifications

TA = +25°C, VD = +5V, IDD = 89mA Typical

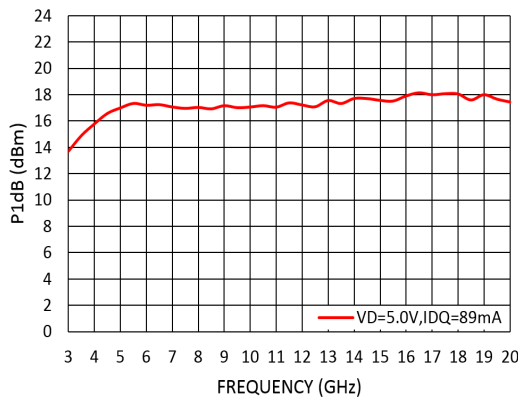
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	3		6	6		18	GHz
Small Signal Gain	19	20		18	20		dB
Gain Flatness		± 0.5			± 0.75		dB
Noise Figure		1.5	2.8		1.5	1.8	dB
P1dB - Output 1dB Compression	12	15		15	17		dBm
Psat - Saturated Output Power		16			18		dBm
OIP3 - Output Third Order Intercept		27			27		dBm
Input Return Loss		-8			-14		dB
Output Return Loss		-12			-14		dB



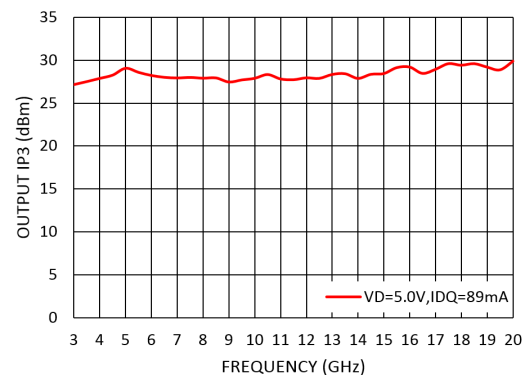
Measurement Plots: S-parameters

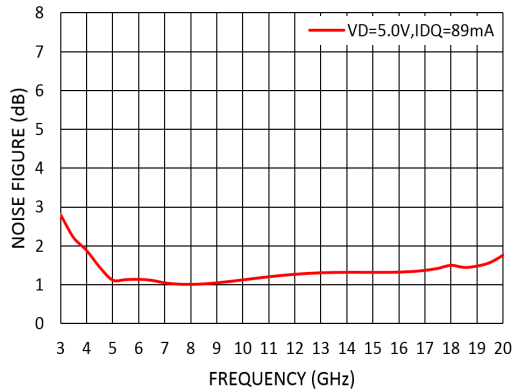


Measurement Plots: P1dB



Measurement Plots: OIP3



Measurement Plots: Noise Figure

Absolute Maximum Ratings

Drain Bias Voltage (VD)	+6V
RF Input Power (RFIN)	+18dBm
Channel Temperature	175°C
Continuous P _{diss} (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

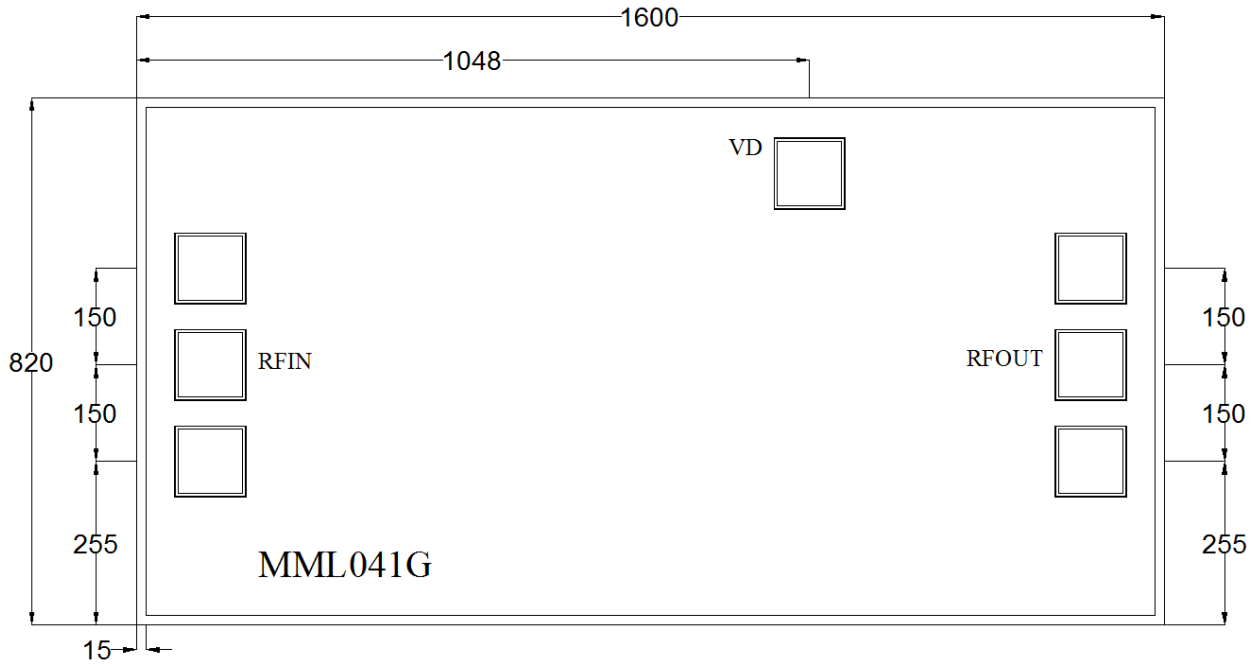
Typical Supply Current vs. VD

VD (V)	IDD (mA)
+5.0	89


**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**



Outline Drawing:
All Dimensions in μm



Notes:

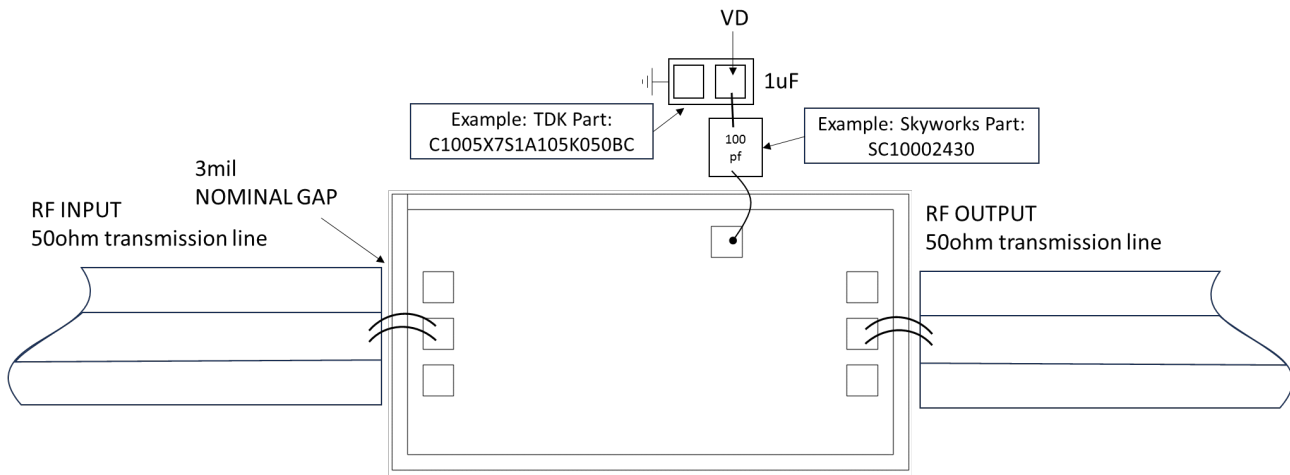
1. Die thickness: 100 μm
2. DC bond pad is 100*100 μm^2
3. RF IN/OUT bond pad is 100*100 μm^2
4. Bond pad metalization: Gold
5. Backside metalization: Gold



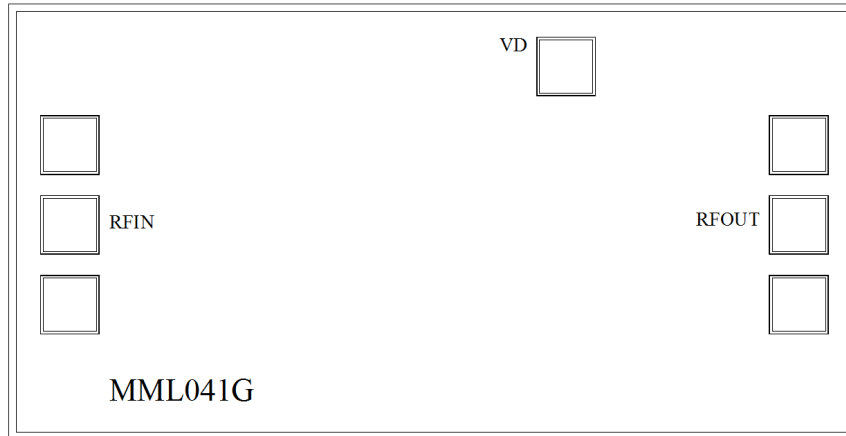
Assembly Drawing

MML041G

GaAs Low Noise Amplifier MMIC 3 - 18GHz



No	Function	Description
1	RF IN	RF Signal Input. This pad is ac-coupled and matched to 50 Ω.
2	RF OUT	RF Signal Output. This pad is ac-coupled and matched to 50 Ω.
3	VD	Connect to external 100pf and 1uf bypass capacitors.
4	Die Bottom	Die bottom must be connected to RF and dc ground.



Biassing and Operation

Turn ON procedure:

1. Connect GND to RF and dc ground.
2. Apply positive drain voltage V_D and set to +5V .
3. Apply RF signal.

Turn OFF procedure:

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

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