MILLER MMIC

MML088

V1.0.0

GaAs pHEMT MMIC
Low Noise Amplifier
2-4GHz

MML088

LOW NOISE AMPLIFIER – MMIC 2-4GHz

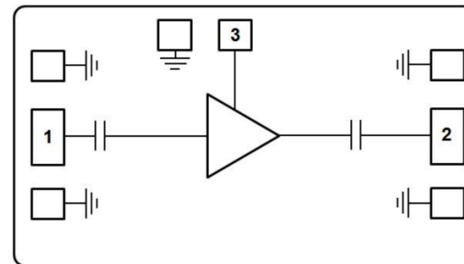
Features

- Singles Basing Voltage (Self Biased)
- Operating Frequency: 2-4GHz
- Noise Figure: 0.9dB
- Gain: 25dB
- Power Supply: +5V @ 60 mA
- P1dB: +16dBm
- OIP3: +28dBm
- Reverse Isolation:36dB
- Die Size: 1.5 x 1.3 x 0.075 mm

Typical Applications

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

Functional Block Diagram

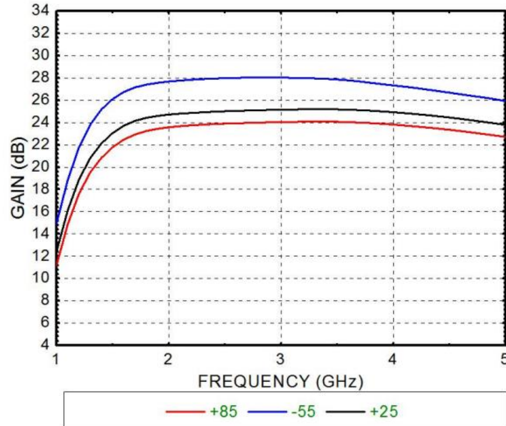


Electrical Specifications

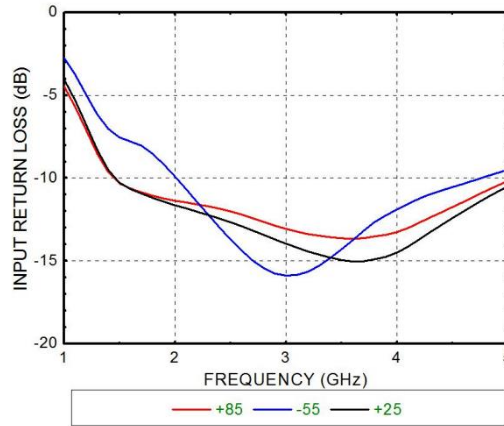
TA = +25°C, Vdd = +5V, Idd = 60mA

Parameters	Min.	Typ.	Max.	Units
Frequency		2-4		GHz
Gain		25		dB
Input Return Loss		12		dB
Output Return Loss		15		dB
Output 1dB Compression (P1dB)		16		dBm
Reverse Isolation		36		dB
Output Third Order Intercept (IP3)		28		dBm
Noise Figure		0.9		dB
Operating Current	40	60	80	mA

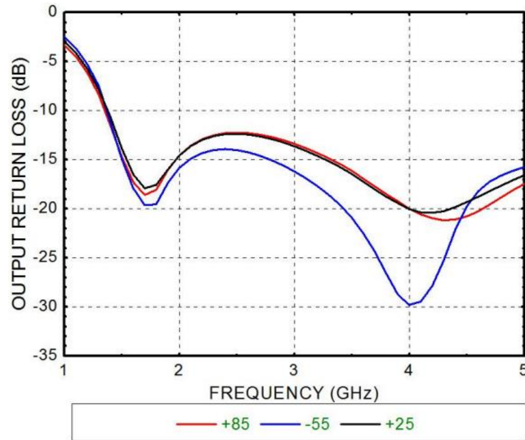
Gain vs. Temperature



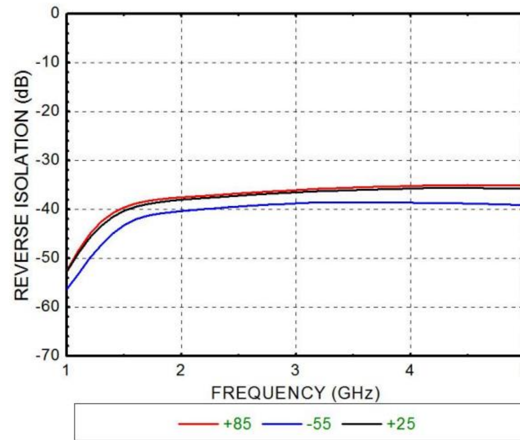
Input Return Loss vs. Temperature



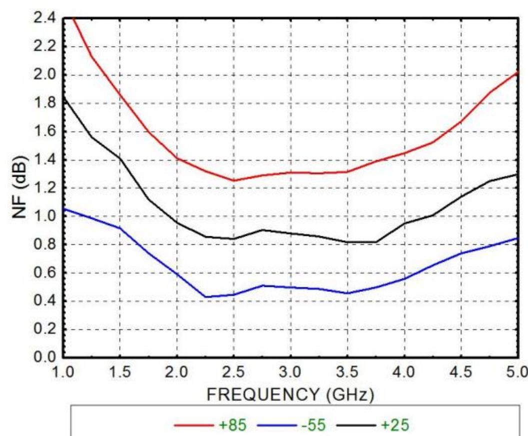
Output Return Loss vs. Temperature



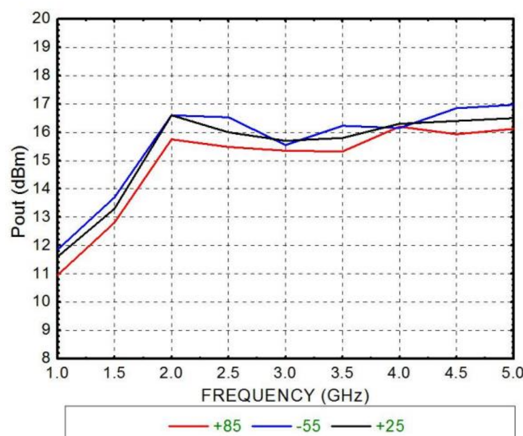
Reverse Isolation vs. Temperature



Noise Figure vs. Temperature

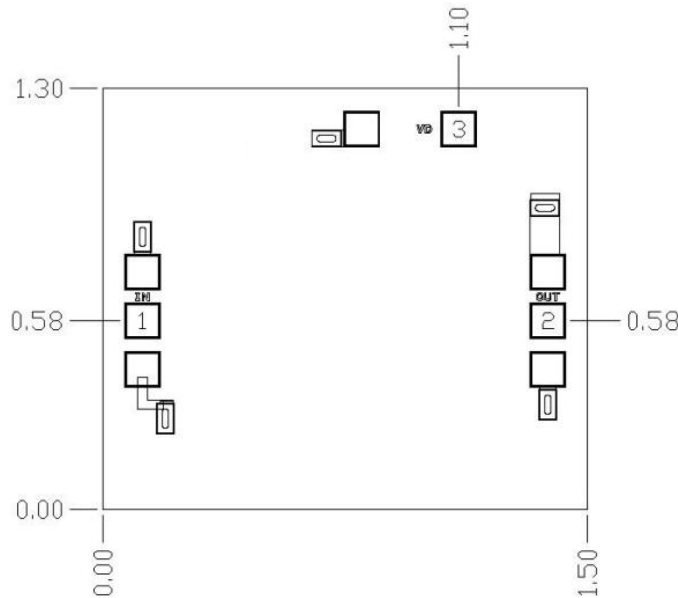


P1dB vs. Temperature



Outline Drawing:

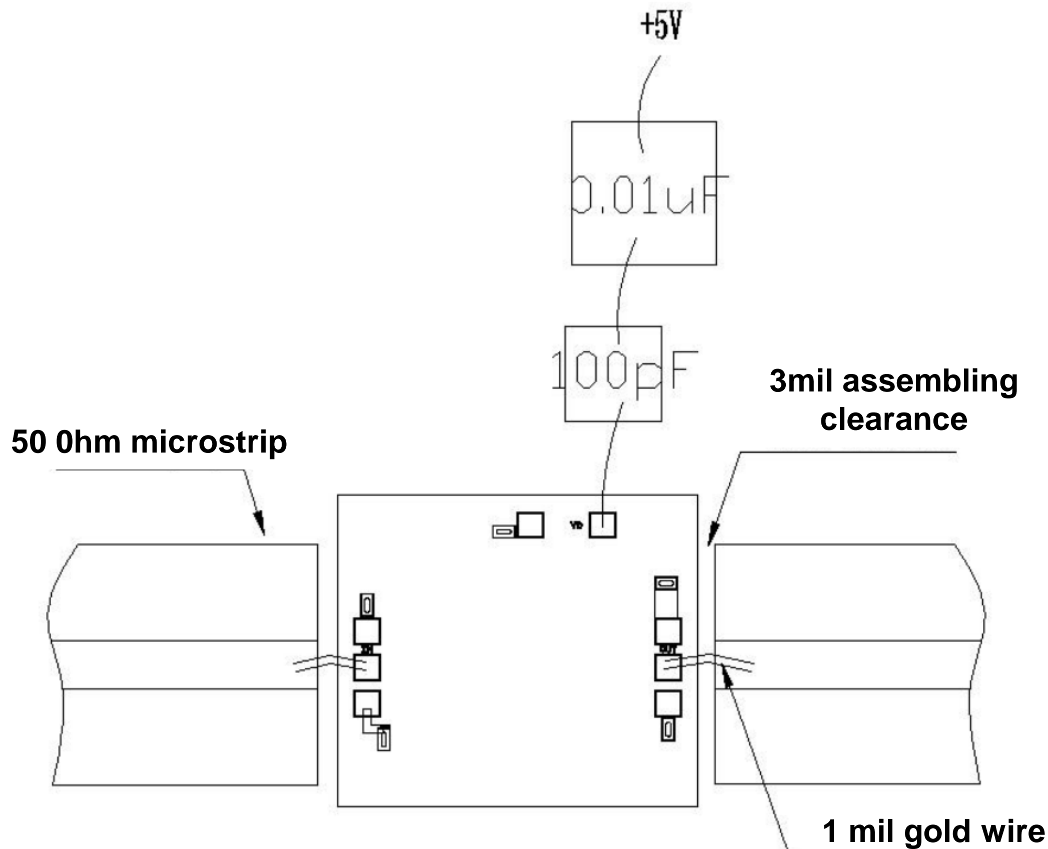
All Dimensions in mm



Pad Description

PAD	Function	Description
1	IN	This pad is AC coupling, 50 ohm matched
2	OUT	This pad is AC coupling, 50 ohm matched
3	VD	This pad provides the power supply voltage of the amplifier and needs to be externally connected with the 100pF bypass capacitor.
Die Bottom	GND	Die bottom must be connected to RF/DC ground.

Assembly Drawing



Notes:

1. Die thickness: 75um
2. Typical bond pad is 100*100 μm^2
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

Maximum Ratings:

1. Power supply voltage: +6V
2. RF input power: +18dBm
3. Storage temperature: -65℃ to +150℃
4. Operating temperature: -55℃ to +85℃