MILLER MMIC

MM3070

V1.0.0

GaAs MMIC
Driver Amplifier
32-38GHz

MM3070

DRIVER AMPLIFIER – MMIC 32-38GHz

Features

- **Frequency: 32-38GHz**
- **Small Signal Gain: 28dB**
- **Psat: 28.5dBm**
- **PAE: 18%**
- **Power Supply: +5V@730mA**
- **Input/Output: 50Ω**
- **Die Size: 2.77 x 1.59 x 0.1mm**

Typical Applications

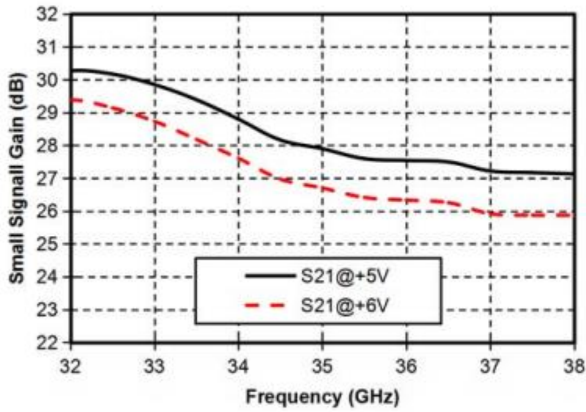
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

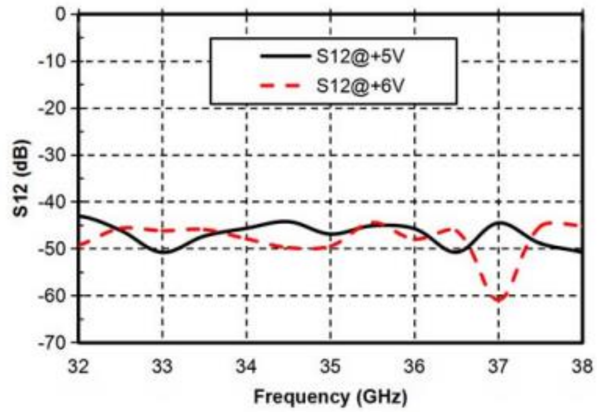
TA = +25ºC, Vd = +5V, Ids = 730mA

Parameters	Min.	Typ.	Max.	Units
Frequency		32-38		GHz
Small Signal Gain	-	28	-	dB
Gain Flatness		±1.5		dB
Psat	-	28.5	-	dBm
PAE		18		%
Input Return Loss	-	8	-	dB
Output Return Loss	-	12	-	dB
* By tuning the Vg terminal voltage -2V~0V, the Vg terminal voltage is recommended to be -0.6V.				

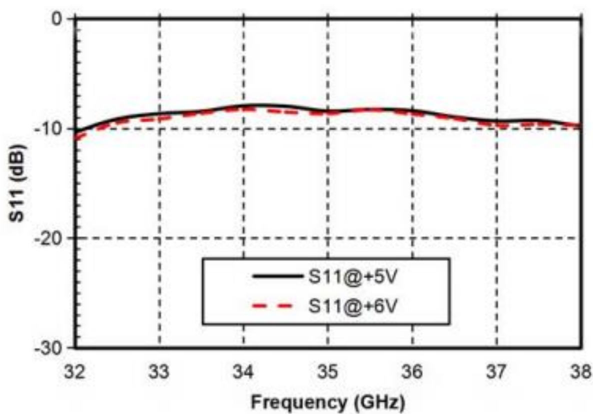
Gain vs. Frequency



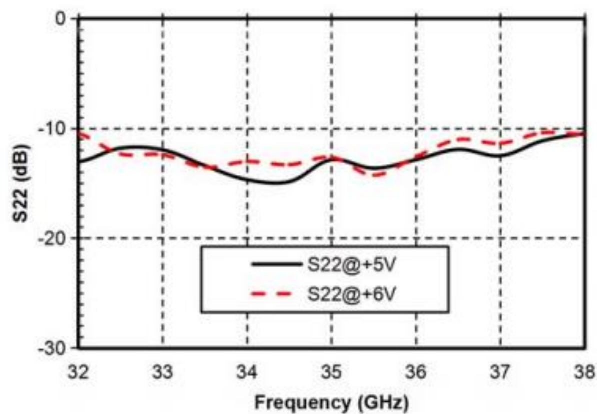
Reverse Isolation vs. Frequency



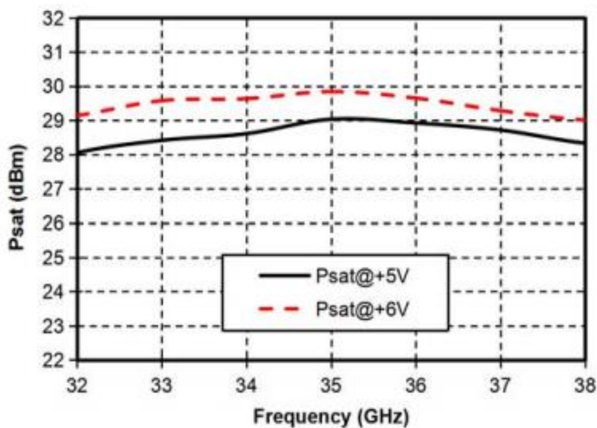
Input Return Loss vs. Frequency



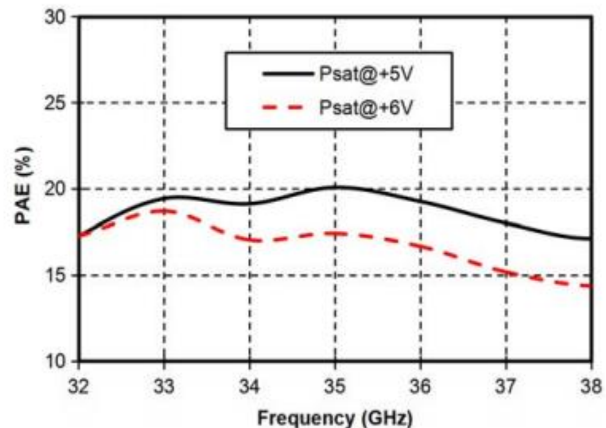
Output Return Loss vs. Frequency



Psat vs. Frequency

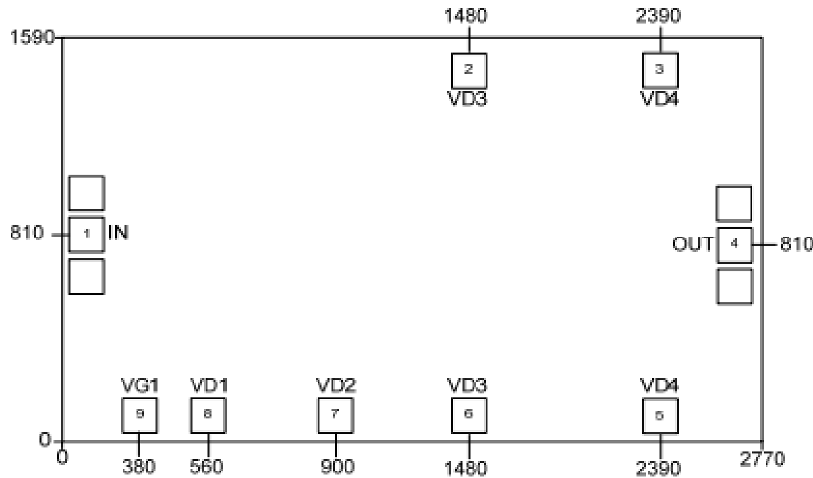


PAEvs. Frequency



Outline Drawing:

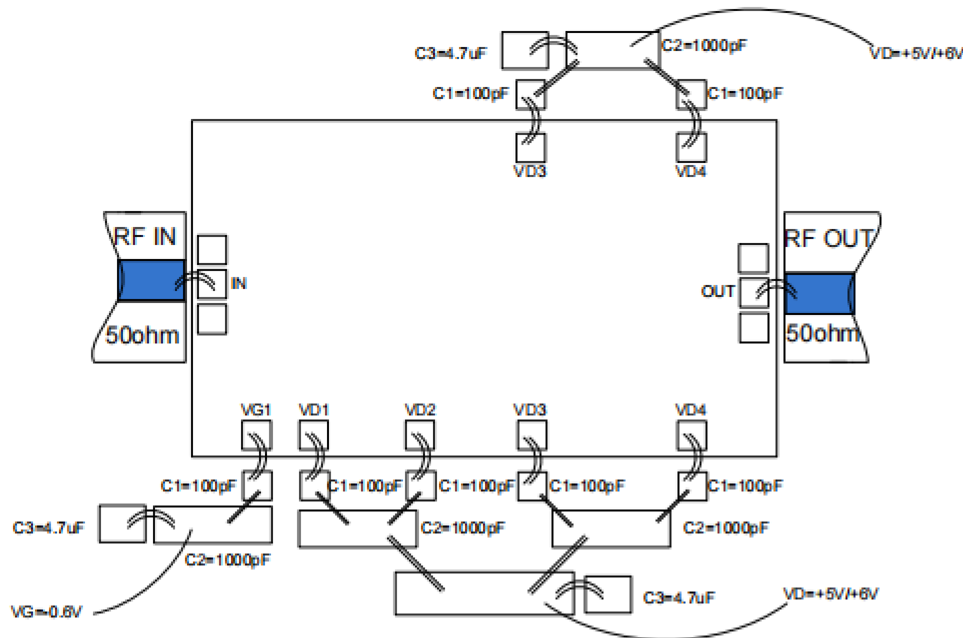
All Dimensions in um



Pad Description

PAD	Function	Description
1	RF IN	RF signal input terminal, no blocking capacitor required
4	RF OUT	RF signal output terminal, no blocking capacitor required
2,3,5,6,7,8	VD1,VD2,VD3, VD4	Amplifier drain bias, connected to external 100pF ,1000pF, 4.7uF bypass capacitor.
9	VG	Amplifier gate bias, connected to external 100pF ,1000pF, 4.7uF bypass capacitor.
Die Bottom	GND	Die bottom must be connected to RF/DC ground

Assembly Drawing



Notes:

1. Die thickness: 100um
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. Maximum drain voltage: +8V
2. Maximum input power: +20dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃