

Features

- Single Biasing Voltage (Self Biased)
- Frequency: 2-8GHz
- Small Signal Gain: 13dB Typical
- Gain Flatness: ± 0.3 dB Typical
- Noise Figure: 3.0dB Typical
- Psat: 21.5dBm Typical
- Supply Voltage: VD = +5V@100mA
- Input/Output: 50 Ω
- Die Size: 1.3 x 1.0 x 0.1mm

Typical Applications

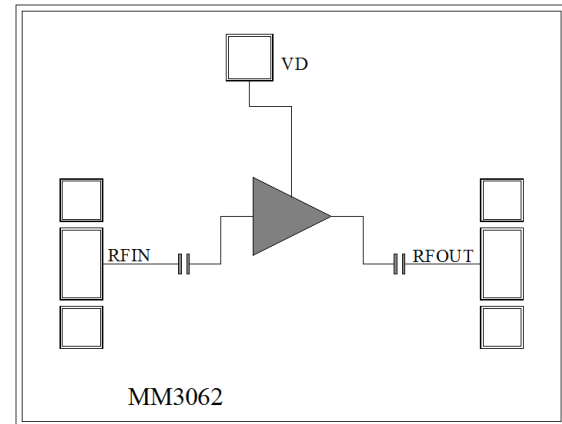
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

TA = +25°C, VD = +5V, IDD = 100mA Typical

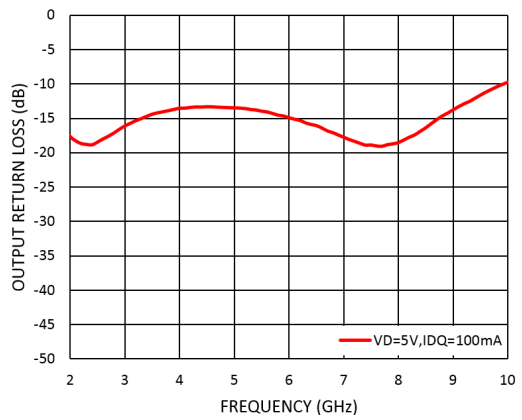
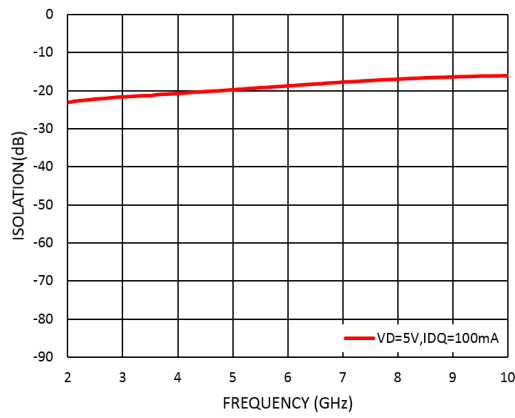
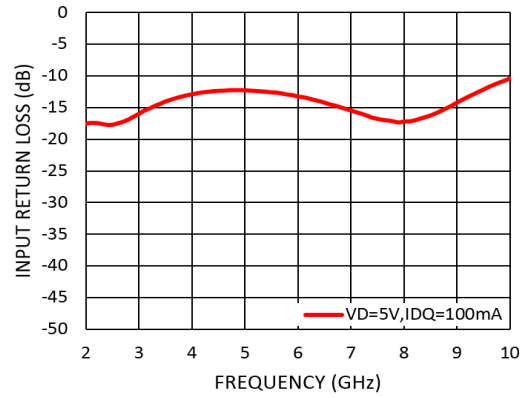
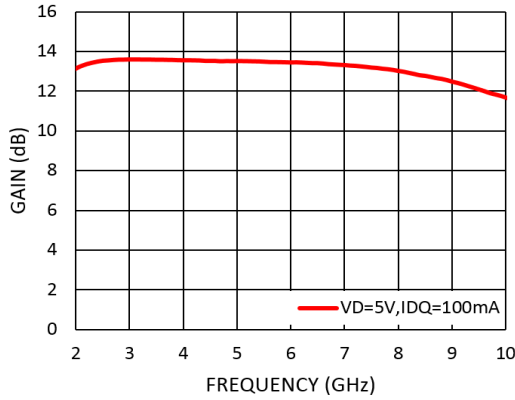
Parameters	Min.	Typ.	Max.	Units
Frequency	2		8	GHz
Small Signal Gain	12	13		dB
Gain Flatness		± 0.3		dB
Noise Figure		3.0	4.5	dB
P1dB - Output 1dB Compression	17	19		dBm
Psat - Saturated Output Power		21		dBm
OIP3 - Output Third Order Intercept		29		dBm
Input Return Loss		-13		dB
Output Return Loss		-14		dB

Functional Block Diagram

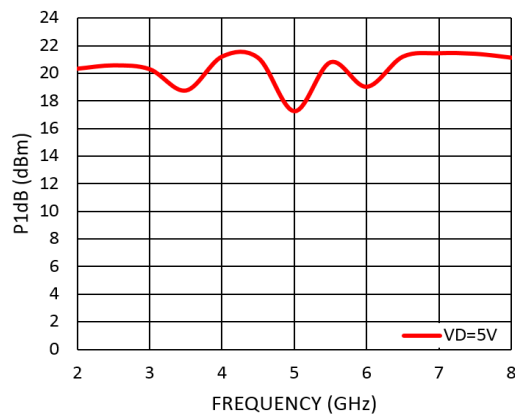




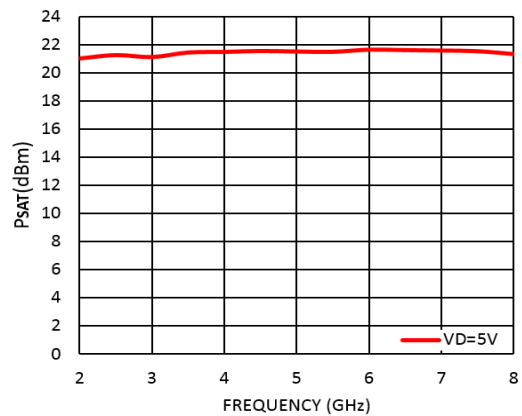
Measurement Plots: S-parameters

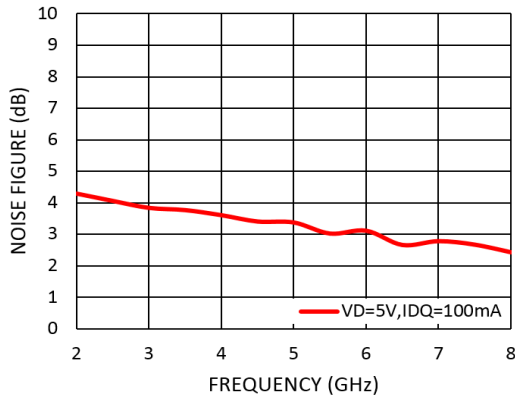


Measurement Plots: P1dB



Measurement Plots: PSAT



Measurement Plots: Noise Figure

Absolute Maximum Ratings

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)@(+5V)	+20dBm
Channel Temperature	175 °C
Continuous P _{diss} (T = 85 °C) (derate 8.3mW/°C above 85 °C)	0.75W
Thermal Resistance (channel to die bottom)	60°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150°C

Typical Supply Current vs. VD

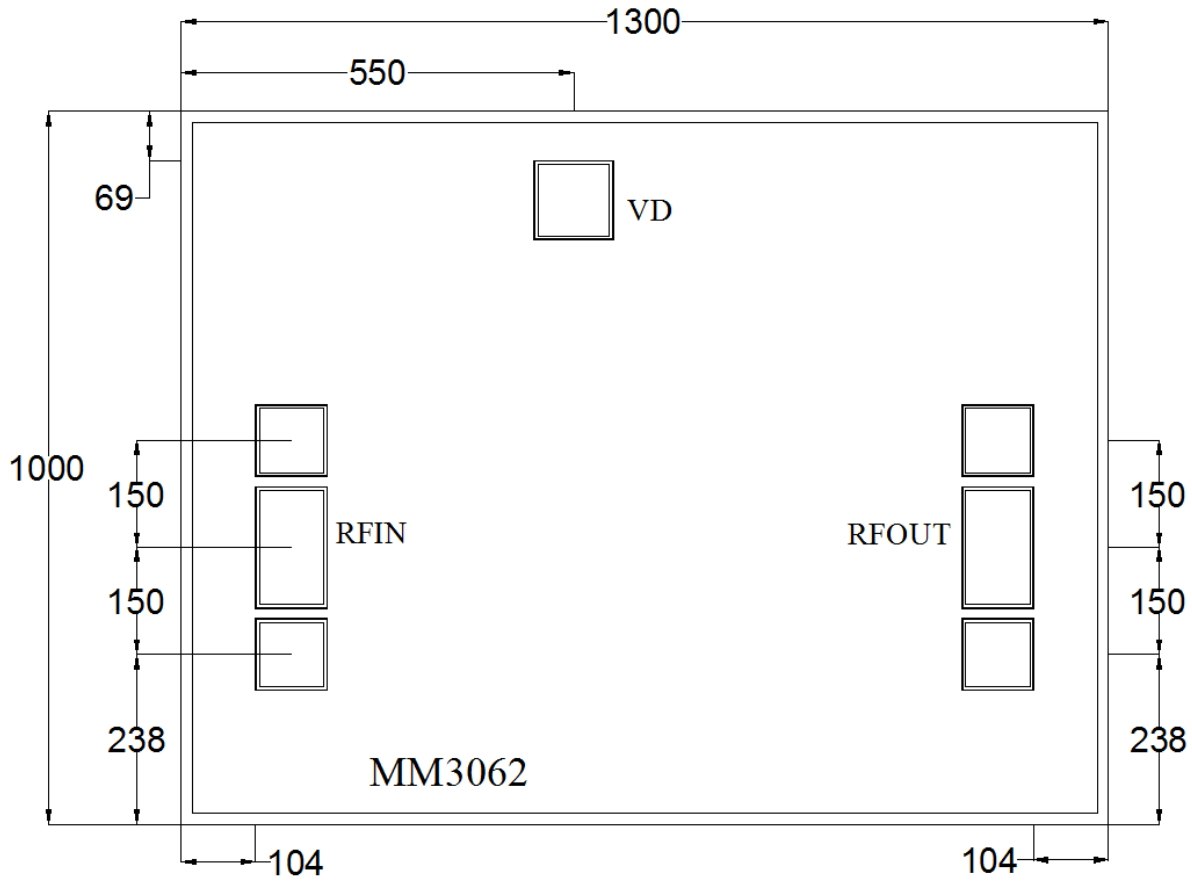
VD (V)	IDD (mA)
+5	100



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS



Outline Drawing:
All Dimensions in μm

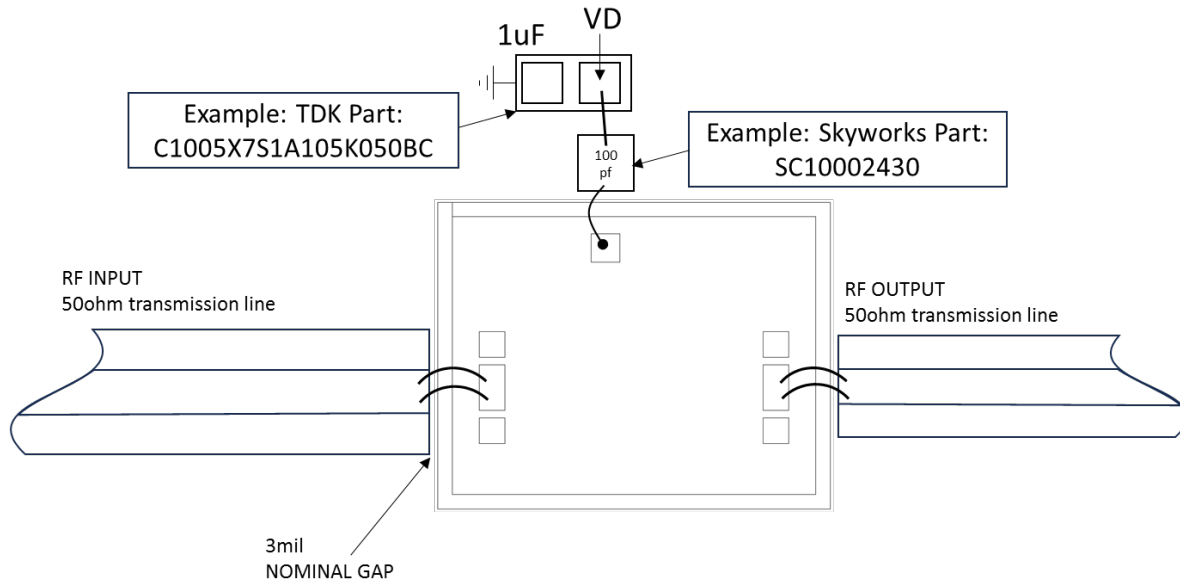


Notes:

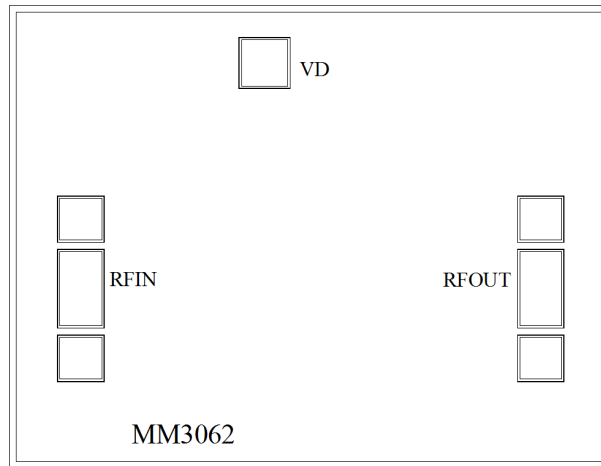
1. Die thickness: 100 μm
2. DC bond pad is 100*100 μm^2
3. RF IN/OUT bond pad is 90*160 μm^2
4. Bond pad metalization: Gold
5. Backside metalization: Gold



Assembly Drawing



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 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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