

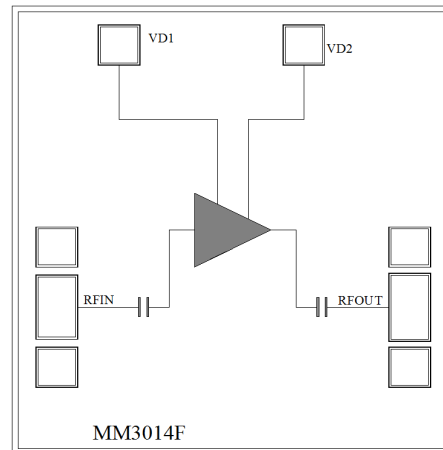
### Features

- Single Biasing Voltage (Self Biased)
- Frequency: 6-22GHz
- Small Signal Gain: 13dB Typical
- Gain Flatness:  $\pm 1.25$ dB Typical
- Psat: 21.5dBm Typical
- Supply Voltage: VD = +5V@127mA
- Input/Output: 50 $\Omega$
- Die Size: 1.06 x 1.12 x 0.1mm

### Typical Applications

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

### Functional Block Diagram



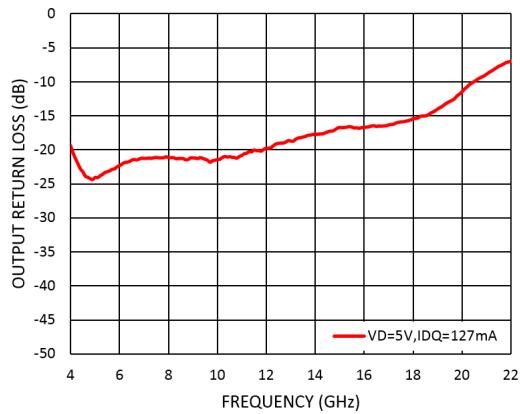
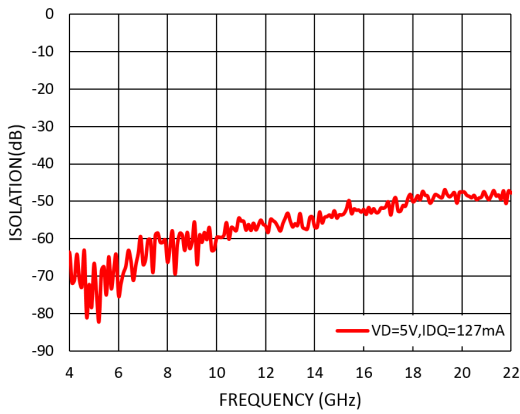
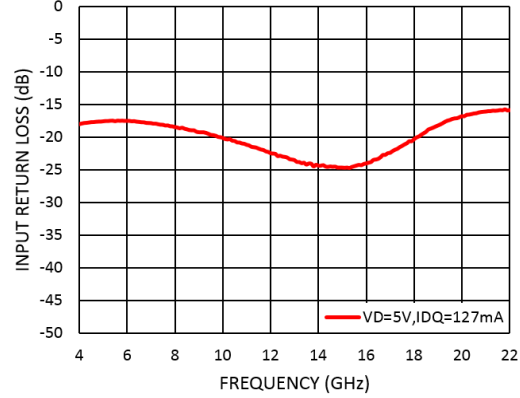
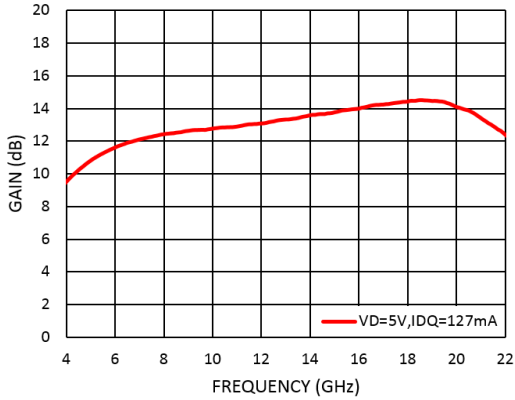
### Electrical Specifications

TA = +25°C, VD=+5V, IDD = 127mA Typical

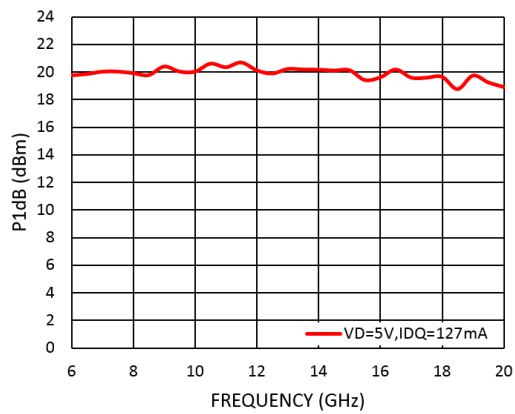
Parameters	Min.	Typ.	Max.	Units
Frequency	6		22	GHz
Small Signal Gain	11	13		dB
Gain Flatness		$\pm 1.25$		dB
P1dB - Output 1dB Compression	18	20		dBm
Psat - Saturated Output Power		21		dBm
Input Return Loss		-18		dB
Output Return Loss		-17		dB



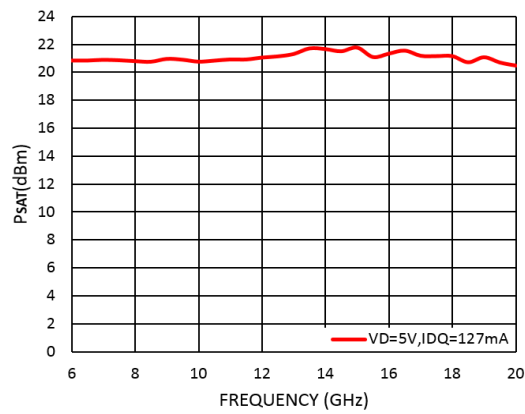
### Measurement Plots: S-parameters

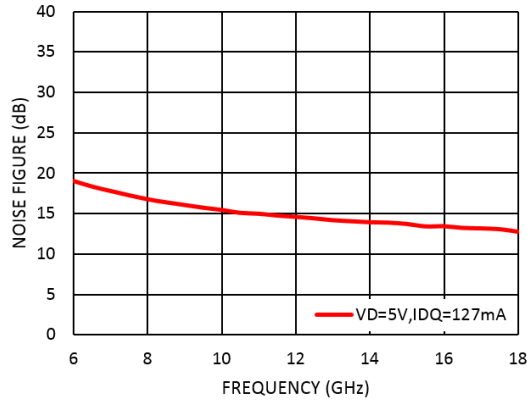


### Measurement Plots: P1dB



### 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 <sub>diss</sub> (T = 85 °C) (derate 10.6mW/°C above 85 °C)	0.95W
Thermal Resistance (channel to die bottom)	60°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150°C

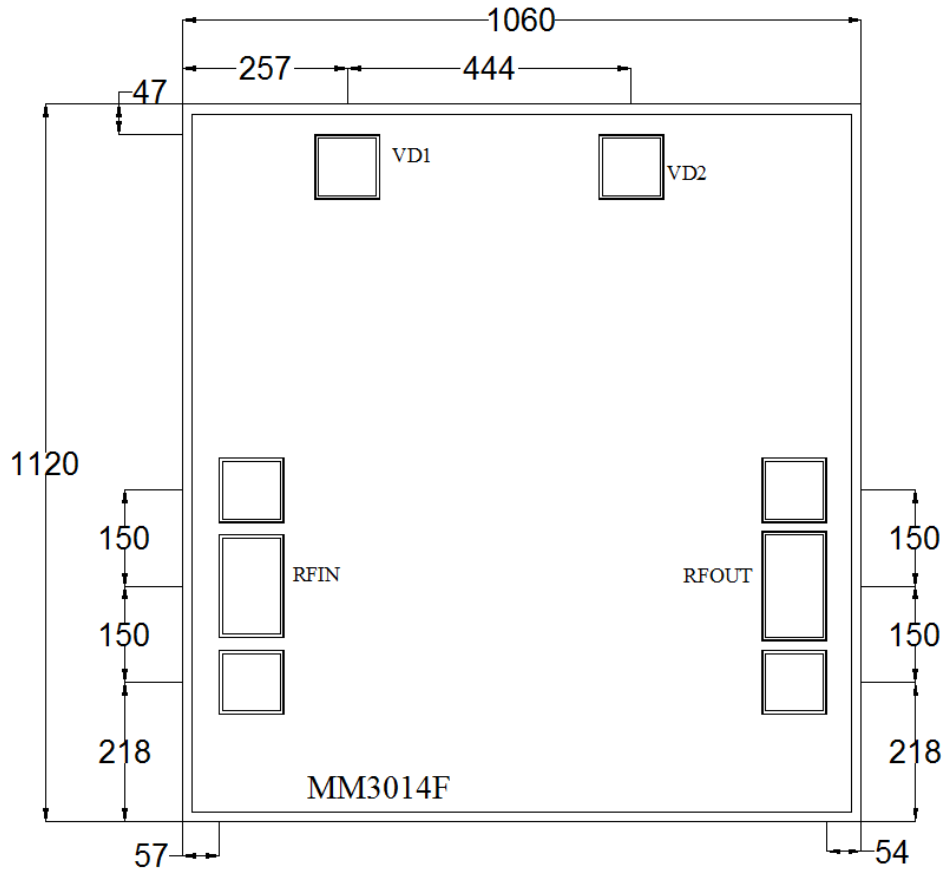
**Typical Supply Current vs. VD**

VD (V)	IDD (mA)
+5	127


 ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



**Outline Drawing:**  
All Dimensions in  $\mu\text{m}$

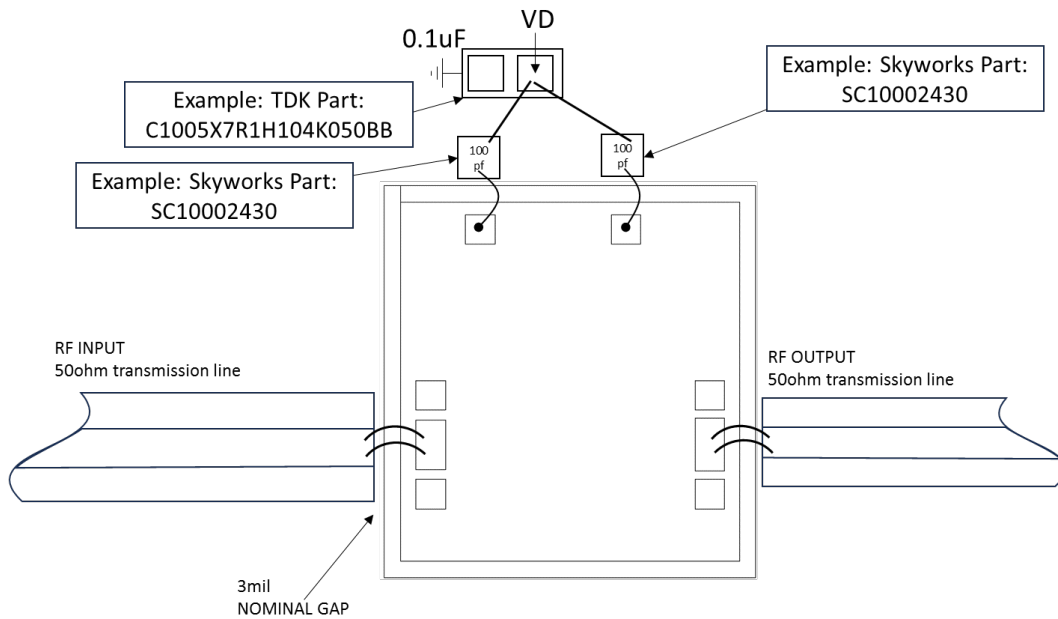


**Notes:**

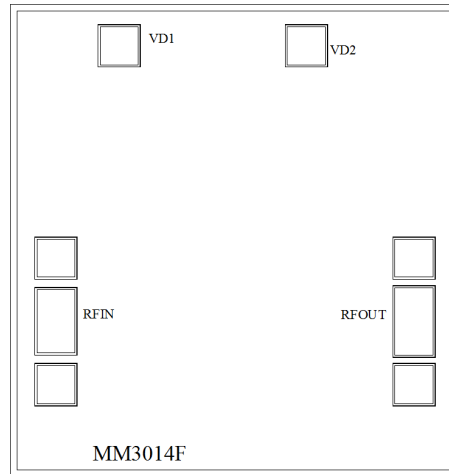
1. Die thickness: 100 $\mu\text{m}$
2. DC bond pad is 90\*90 $\mu\text{m}^2$
3. RF IN/OUT bond pad is 90\*150 $\mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold



### 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 0.1 $\mu$ f 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.

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