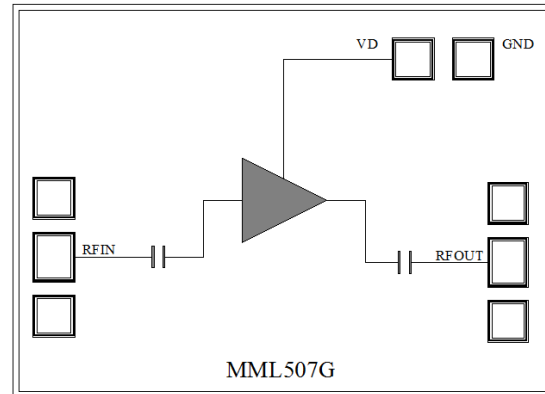


**Features**

- Single Biasing Voltage (Self Biased)
- Frequency: 6-18GHz
- Small Signal Gain: 19dB Typical
- Gain Flatness:  $\pm 1.0$ dB Typical
- Noise Figure: 1.0dB Typical
- P1dB: 15dBm Typical
- Power Supply: +5V@76mA
- Input/Output: 50 $\Omega$
- Chip Size: 1.35 x 0.98 x 0.1mm

**Functional Block Diagram**

**Typical Applications**

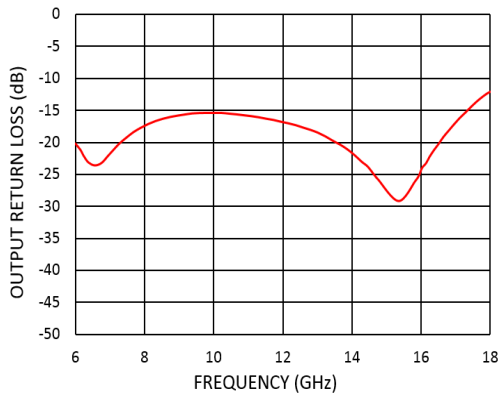
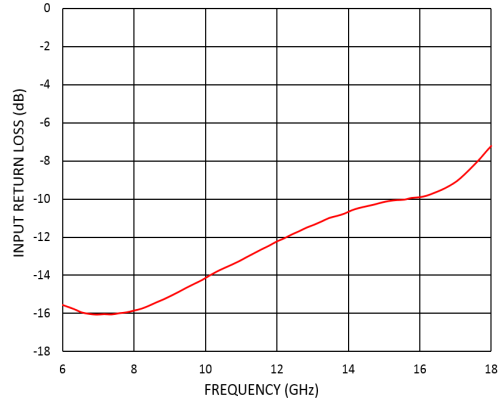
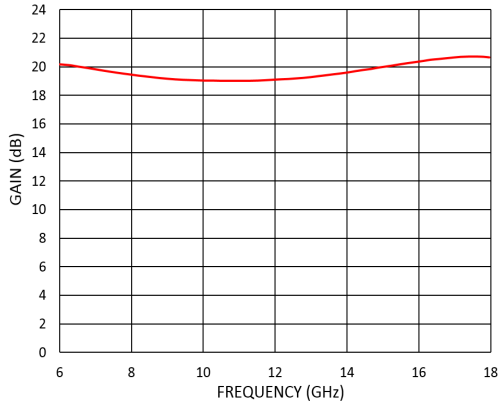
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

**Electrical Specifications**
**TA = +25°C, VD = +5V, IDD = 76mA Typical**

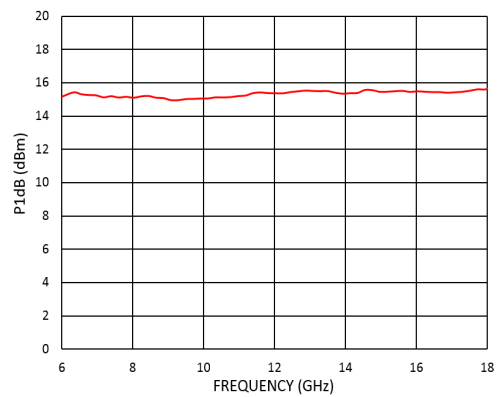
Parameters	Min.	Typ.	Max.	Units
Frequency	6		18	GHz
Small Signal Gain	18	19		dB
Gain Flatness		$\pm 1.0$		dB
Noise Figure		1.0	1.3	dB
P1dB - Output 1dB Compression	13.5	15		dBm
Psat - Saturated Output Power		16		dBm
OIP3 - Output Third Order Intercept		24		dBm
Input Return Loss		10		dB
Output Return Loss		15		dB



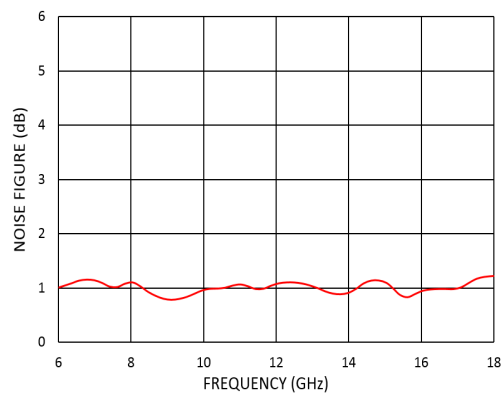
### Measurement Plots: S-parameters



### Measurement Plots: P1dB



### Measurement Plots: Noise Figure



**Absolute Maximum Ratings**

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)	+15dBm
Channel Temperature	175°C
Continuous Pdiss (T = 85 °C) (derate 6.2mW/°C above 85 °C)	0.56W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +125 °C
Storage Temperature	-65°C to +150 °C

**Typical Supply Current vs. VD**

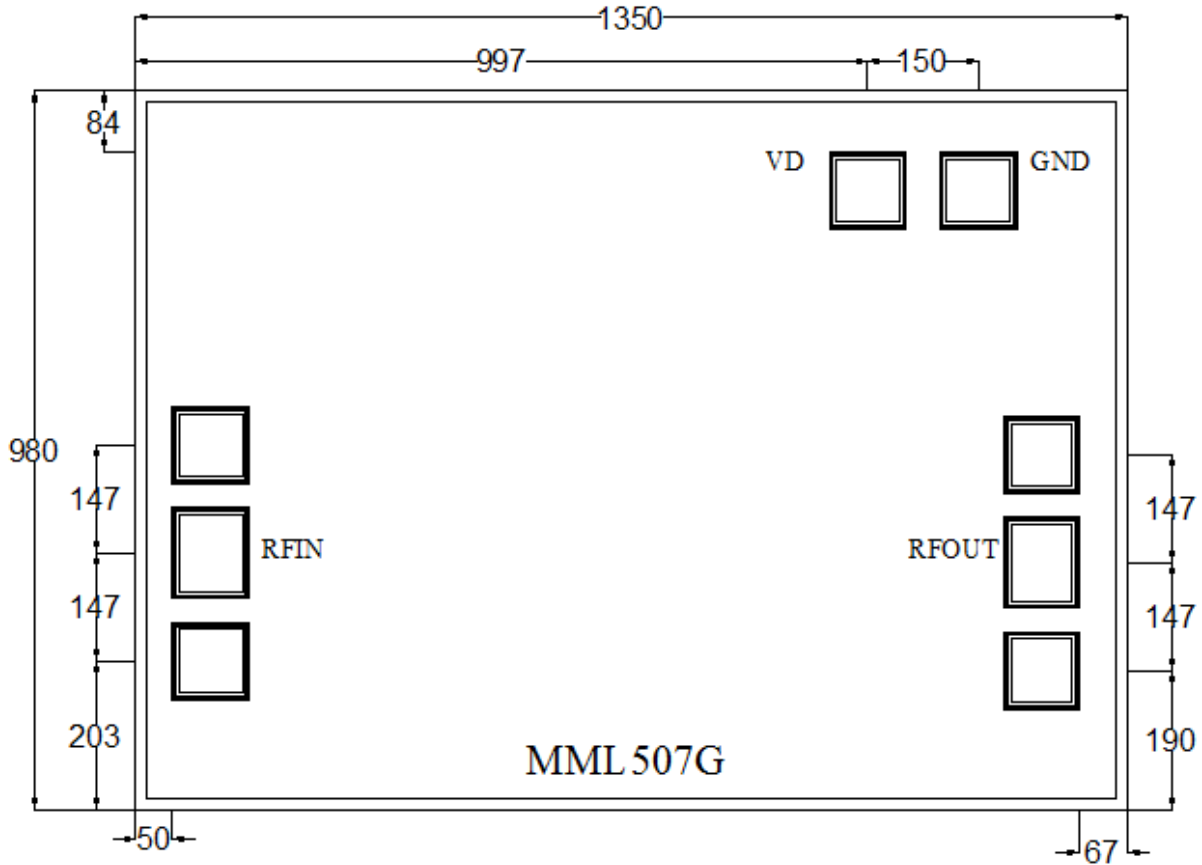
VD (V)	IDD (mA)
+5	76



**ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS**



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

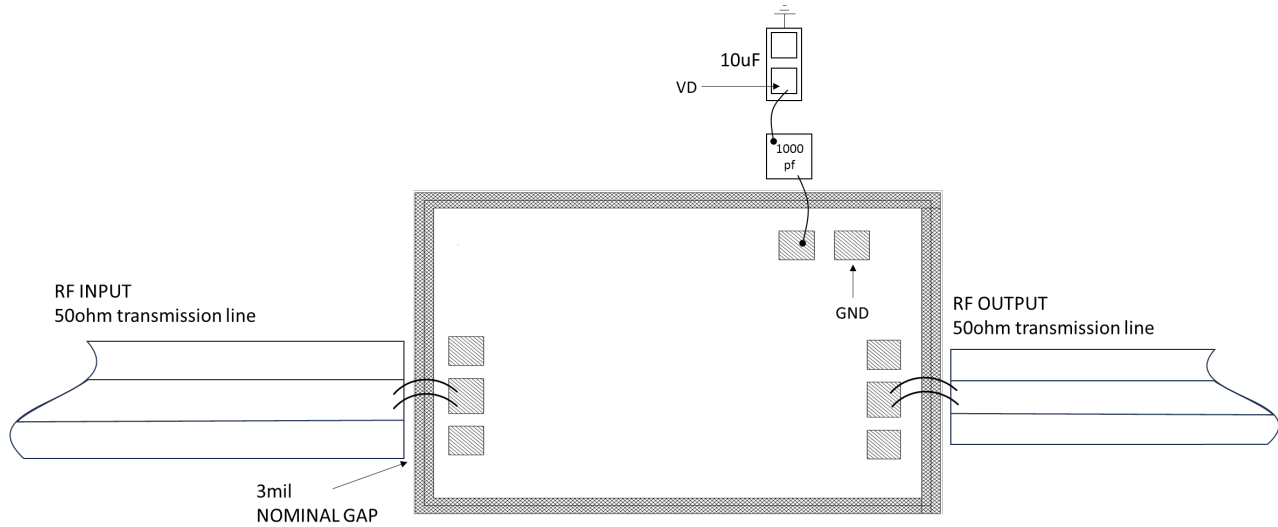


**Notes:**

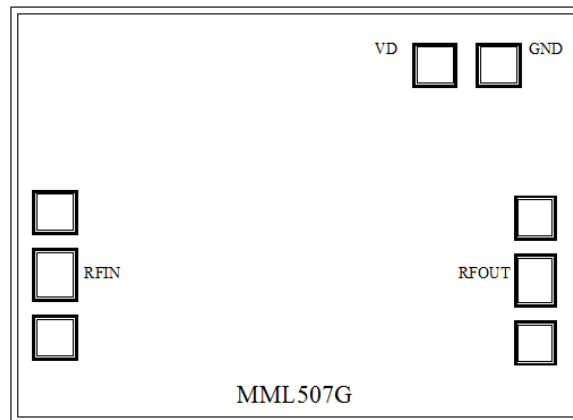
1. Die thickness: 100 $\mu\text{m}$
2. DC bond pad is 100\*100 $\mu\text{m}^2$
3. RF IN/OUT bond pad is 100\*100 $\mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold



### Assembly Drawing



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 1000pf and 10uf bypass capacitors.
	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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