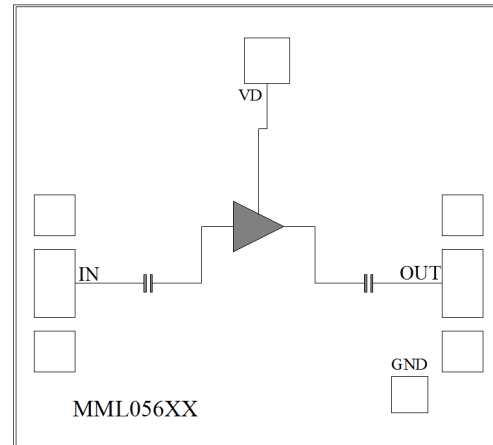


**Features**

- Single Biasing Voltage (Self Biased)
- Frequency: 0.1-4.5GHz
- Small Signal Gain: 31dB Typical
- Gain Flatness:  $\pm 0.5$ dB Typical
- Noise Figure: 0.7dB Typical
- P1dB: 19dBm Typical
- Power Supply: +5V@125mA
- Input/Output: 50 $\Omega$
- Chip Size: 1.08 x 0.98 x 0.1mm

**Typical Applications**

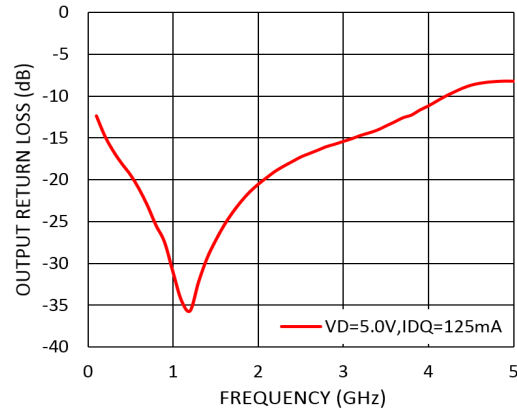
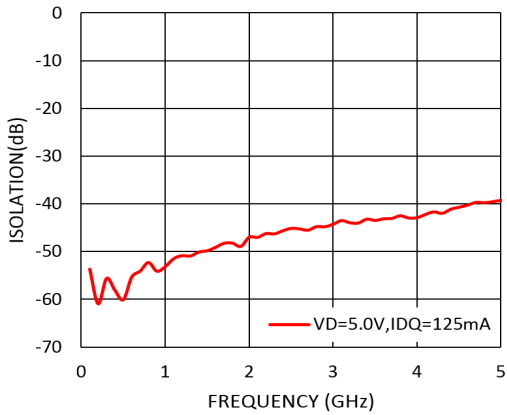
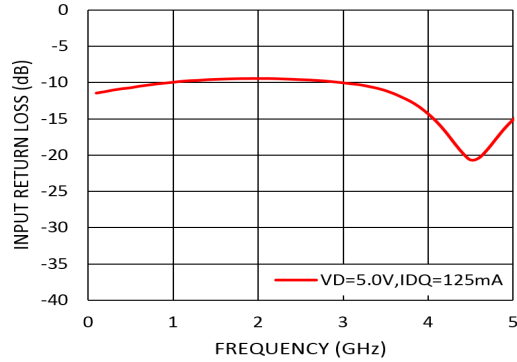
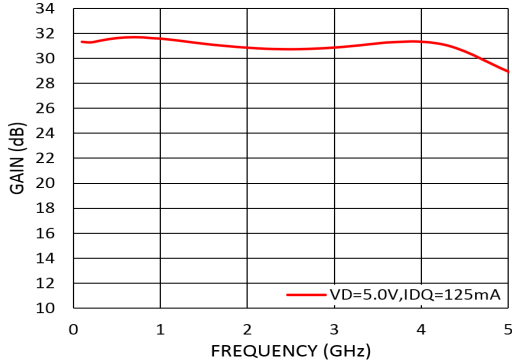
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

**Functional Block Diagram**

**Electrical Specifications**
**TA = +25°C, VD = +5V, IDD = 125mA Typical**

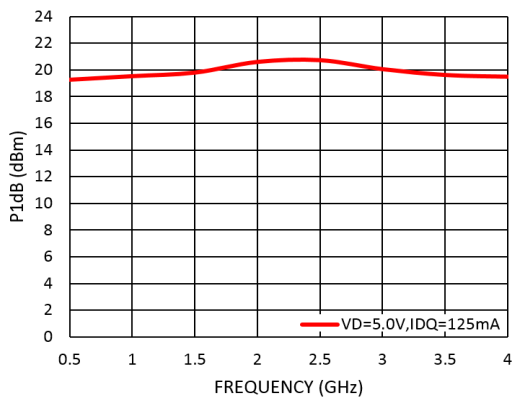
Parameters	Min.	Typ.	Max.	Units
Frequency	0.1		4.5	GHz
Small Signal Gain	30	31		dB
Gain Flatness		$\pm 0.5$		dB
Noise Figure		0.7		dB
P1dB - Output 1dB Compression	18	19		dBm
Psat - Saturated Output Power		21		dBm
OIP3 - Output Third Order Intercept		29		dBm
Input Return Loss		-10		dB
Output Return Loss		-13		dB



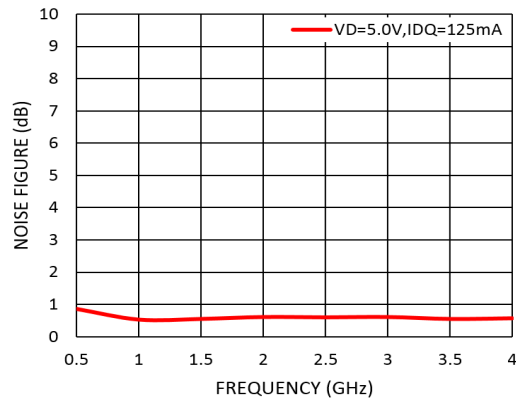
### Measurement Plots: S-parameters



### Measurement Plots: P1dB



### Measurement Plots: Noise Figure



**Absolute Maximum Ratings**

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)	+18dBm
Channel Temperature	165°C
Continuous Pdiss (T = 85 °C) (derate 10.6mW/°C above 85 °C)	0.95W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150 °C

**Typical Supply Current vs. VD**

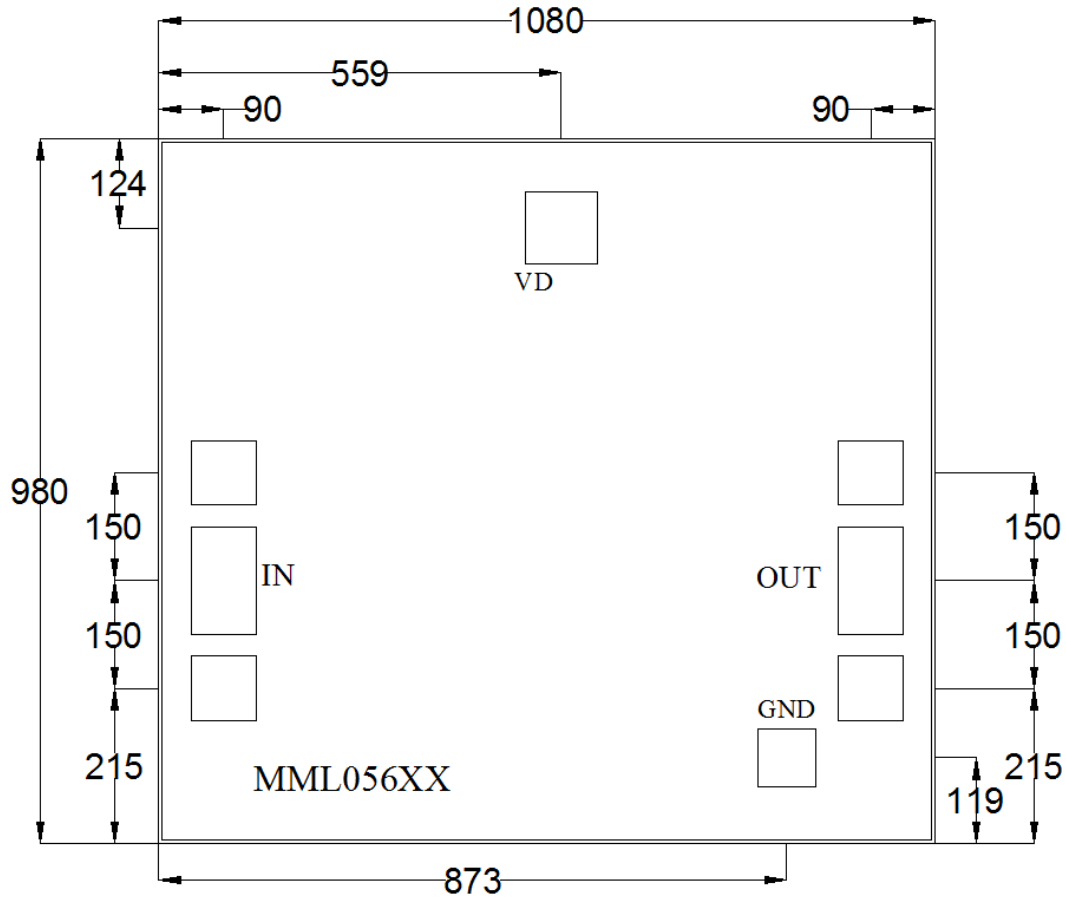
VD (V)	IDD (mA)
+5	125



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



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

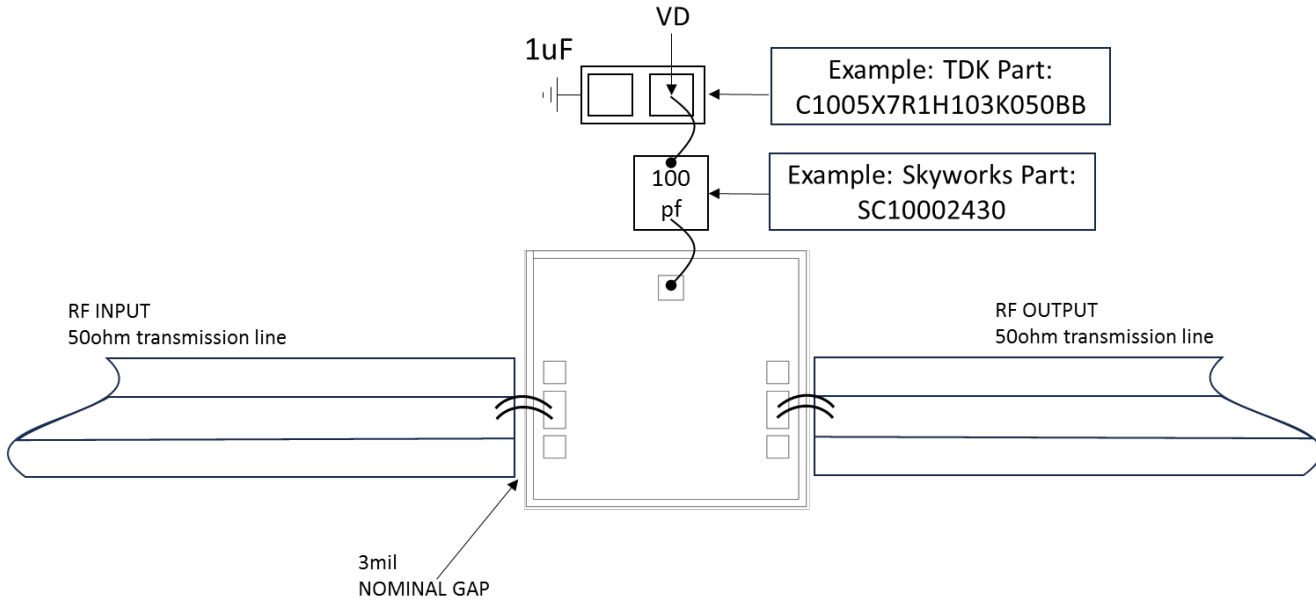


**Notes:**

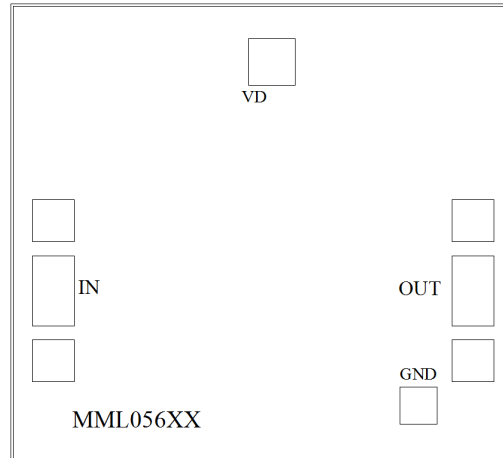
1. Die thickness: 100 $\mu\text{m}$
2. DC bond pad is 100\*100 $\mu\text{m}^2$
3. RF IN/OUT bond pad is 90\*150 $\mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold



### Assembly Drawing



No	Function	Description
1	RF IN	RF Signal Input. 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	Drain Biases for the Amplifier. Connect to external 100pf and 1uf bypass capacitors.
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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