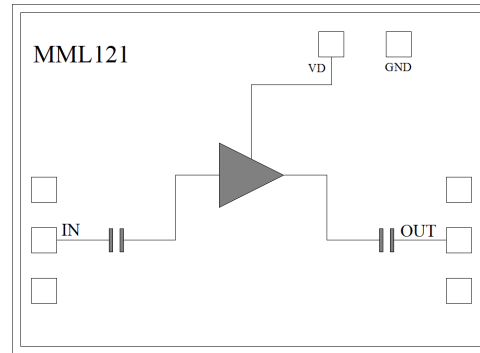


**Features**

- Single Biasing Voltage (Self Biased)
- Frequency: 6-14GHz
- Small Signal Gain: 23.5dB Typical
- Gain Flatness:  $\pm 0.25$ dB Typical
- Noise Figure: 0.7dB Typical
- P1dB: 16dBm Typical
- Power Supply: +5V@52mA
- Input/Output: 50 $\Omega$
- Chip Size: 1.42 x 1.04 x 0.1mm

**Functional Block Diagram**

**Typical Applications**

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

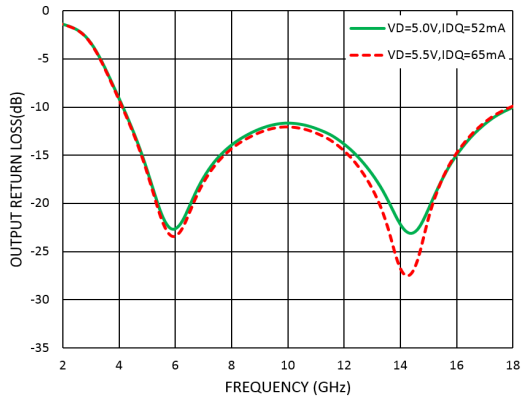
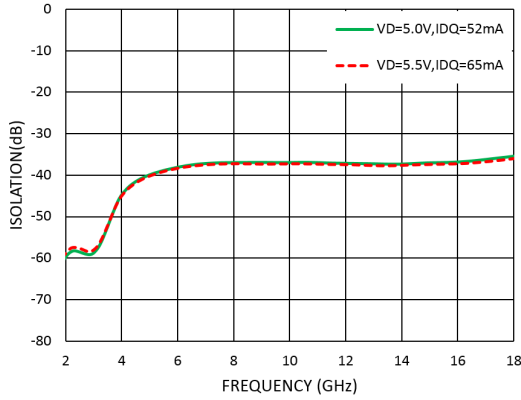
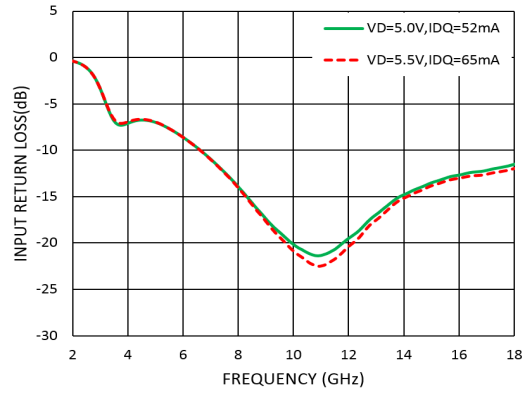
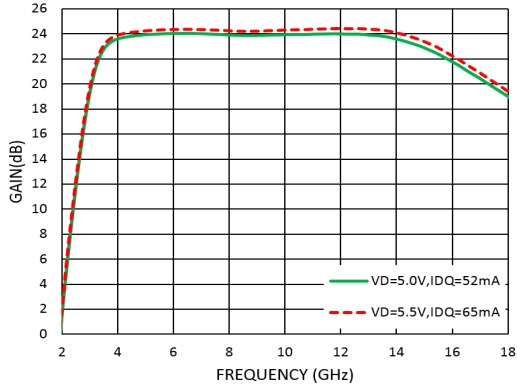
**Electrical Specifications**

TA = +25°C, VD = +5V, IDD = 52mA Typical

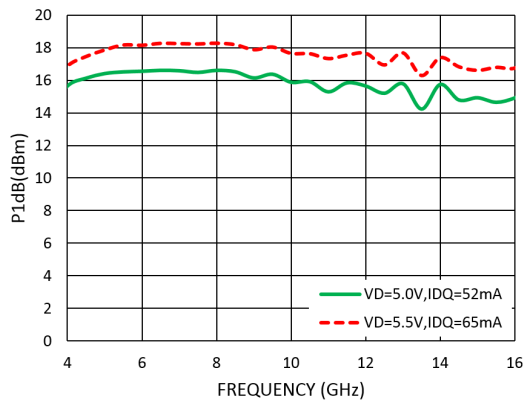
Parameters	Min.	Typ.	Max.	Units
Frequency	6		14	GHz
Small Signal Gain	22	23.5		dB
Gain Flatness		$\pm 0.25$		dB
Noise Figure		0.7	1.1	dB
P1dB - Output 1dB Compression	14	16		dBm
Psat - Saturated Output Power		17		dBm
OIP3 - Output Third Order Intercept		27		dBm
Input Return Loss		-14		dB
Output Return Loss		-12		dB



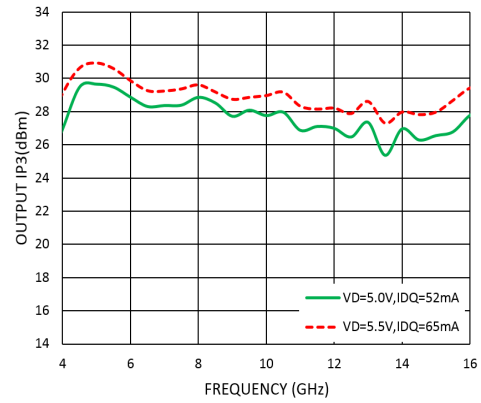
### Measurement Plots: S-parameters



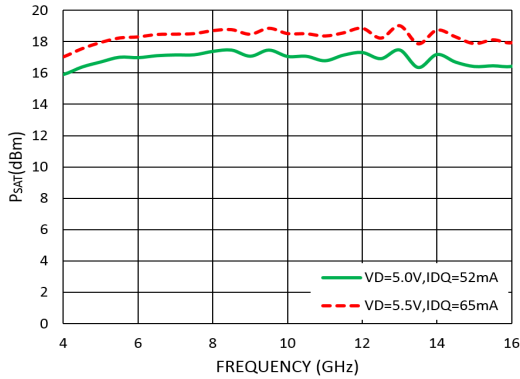
### Measurement Plots: P1dB



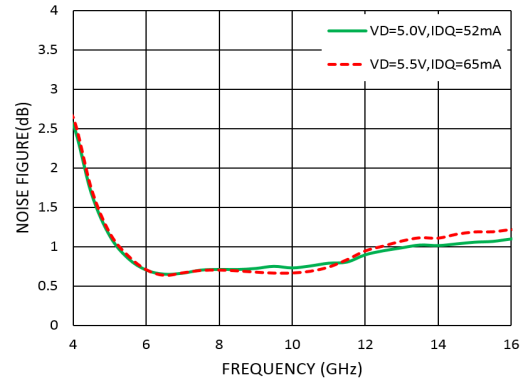
### Measurement Plots: OIP3



### 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 7.2mW/°C above 85 °C)	0.65W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-40°C to +85 °C
Storage Temperature	-65°C to +150 °C

### Typical Supply Current vs. VD

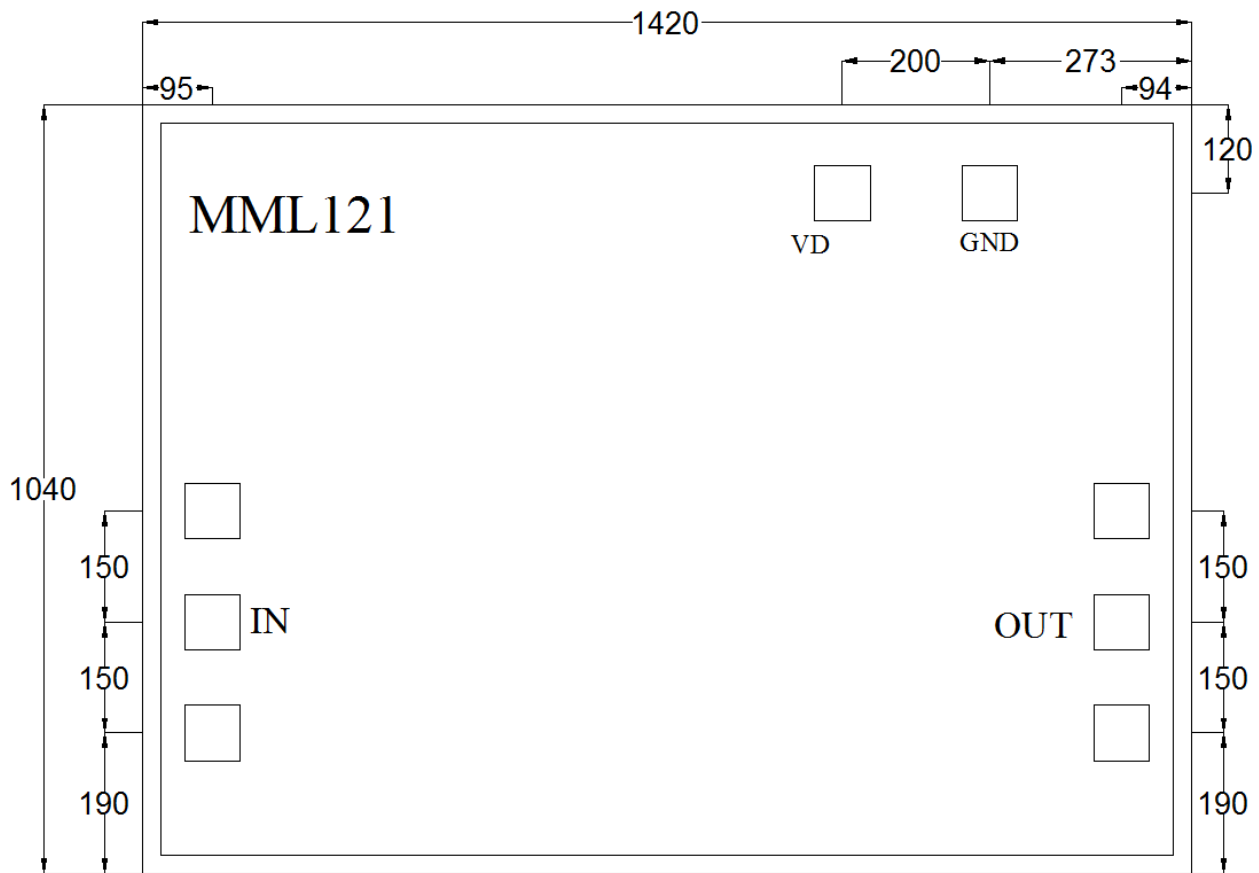
VD (V)	IDD (mA)
+5.0	52
+5.5	65



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



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

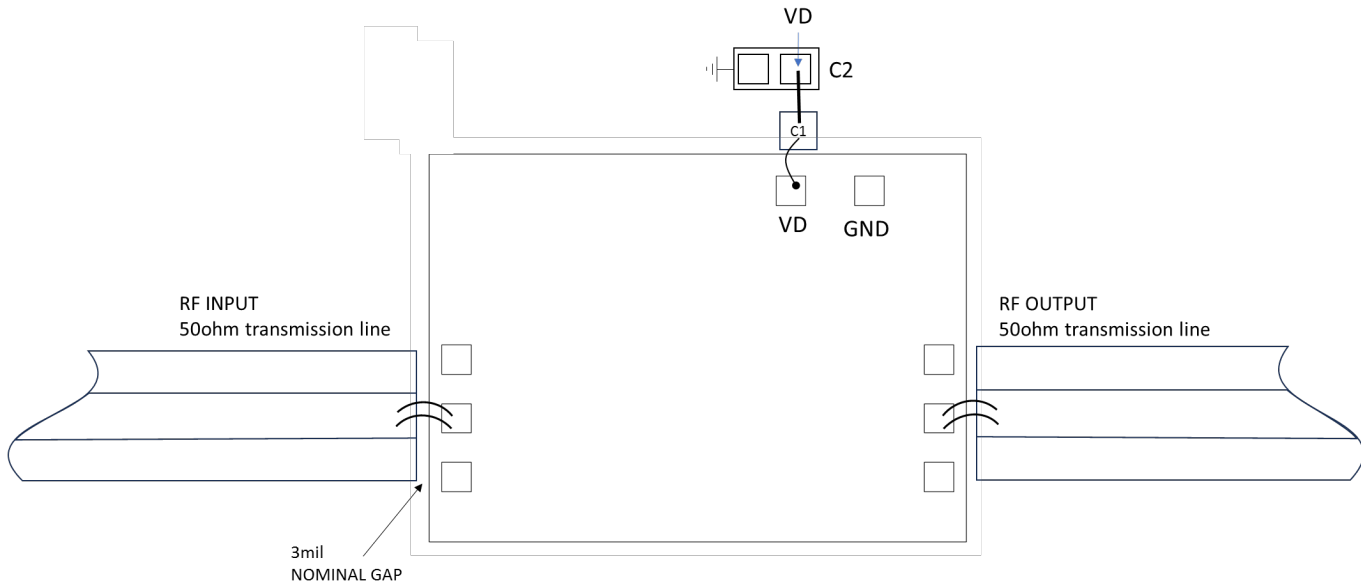


**Notes:**

1. Die thickness: 100 $\mu\text{m}$
2. VD bond pad is 75\*75 $\mu\text{m}^2$
3. RF IN/OUT bond pad is 75\*75 $\mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold

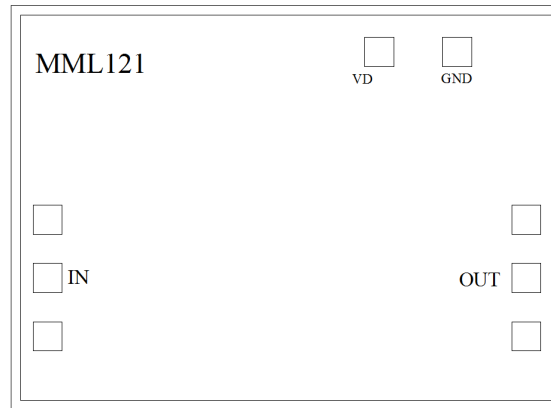


### Assembly Drawing



Item	Description
C1	100pF Example: Presidio Part: MVB3030X103M2H5C1
C2	1μF Example: KYOCERA AVX Part:116XK102M100TT

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	GND	Ground pads
5	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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