

### Features

- Frequency: 3-20GHz
- Small Signal Gain: 26dB Typical
- Gain Flatness:  $\pm 1.0$ dB Typical
- Psat: 22dBm Typical
- Supply Voltage: VD = +5V@154mA
- Input/Output: 50 $\Omega$
- Die Size: 1.95 x 1.22 x 0.1mm

### Typical Applications

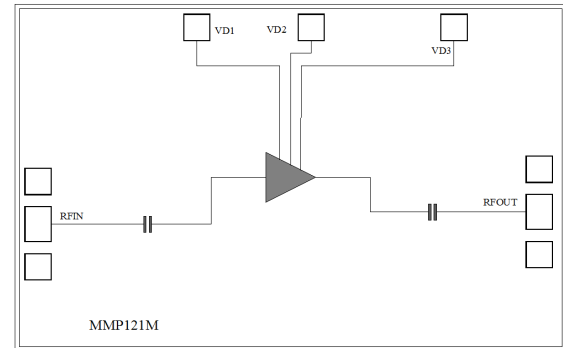
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

### Electrical Specifications

TA = +25°C, VD = +5V, IDD = 154mA Typical

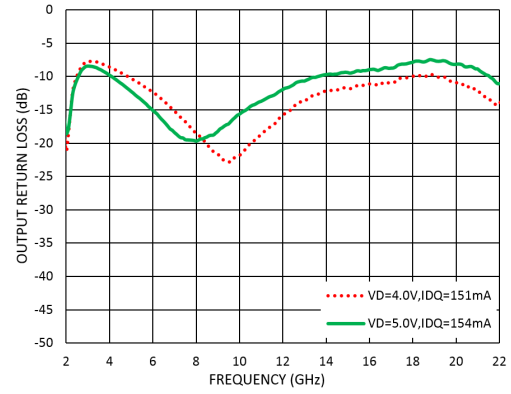
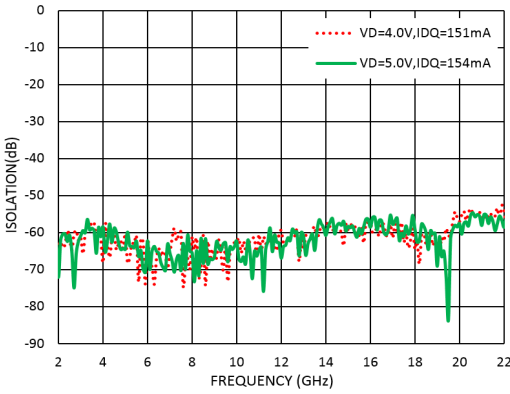
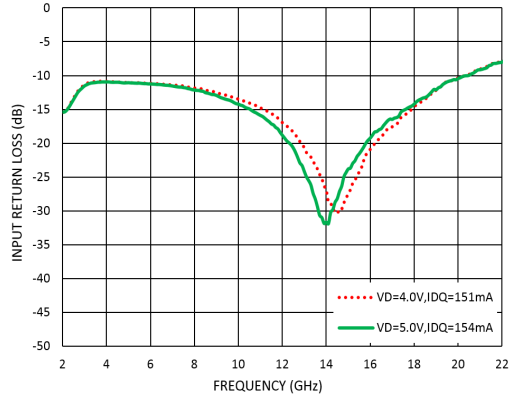
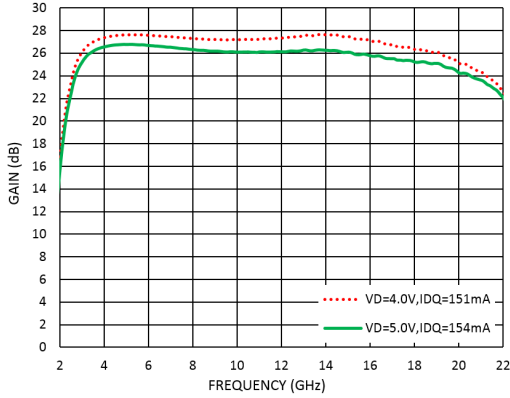
Parameters	Min.	Typ.	Max.	Units
Frequency	3		20	GHz
Small Signal Gain	23.5	26		dB
Gain Flatness		$\pm 1.0$		dB
P1dB - Output 1dB Compression		21		dBm
Psat - Saturated Output Power	21	22		dBm
Input Return Loss		-12		dB
Output Return Loss		-10		dB

### Functional Block Diagram

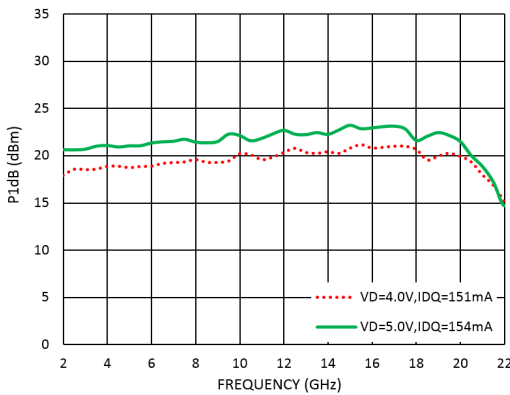




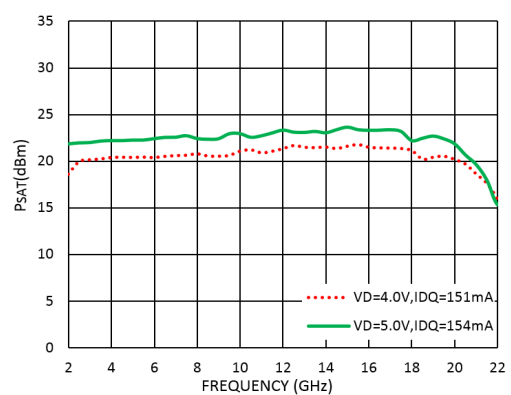
### Measurement Plots: S-parameters



### Measurement Plots: P1dB



### Measurement Plots: Psat



**Absolute Maximum Ratings**

Drain Bias Voltage (VD)	+6V
RF Input Power (RFIN)@(+5V)	+10dBm
Channel Temperature	175 °C
Continuous Pdiss (T = 85 °C) (derate 10.6mW/°C above 85 °C)	8W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +125 °C

**Typical Supply Current vs. VD**

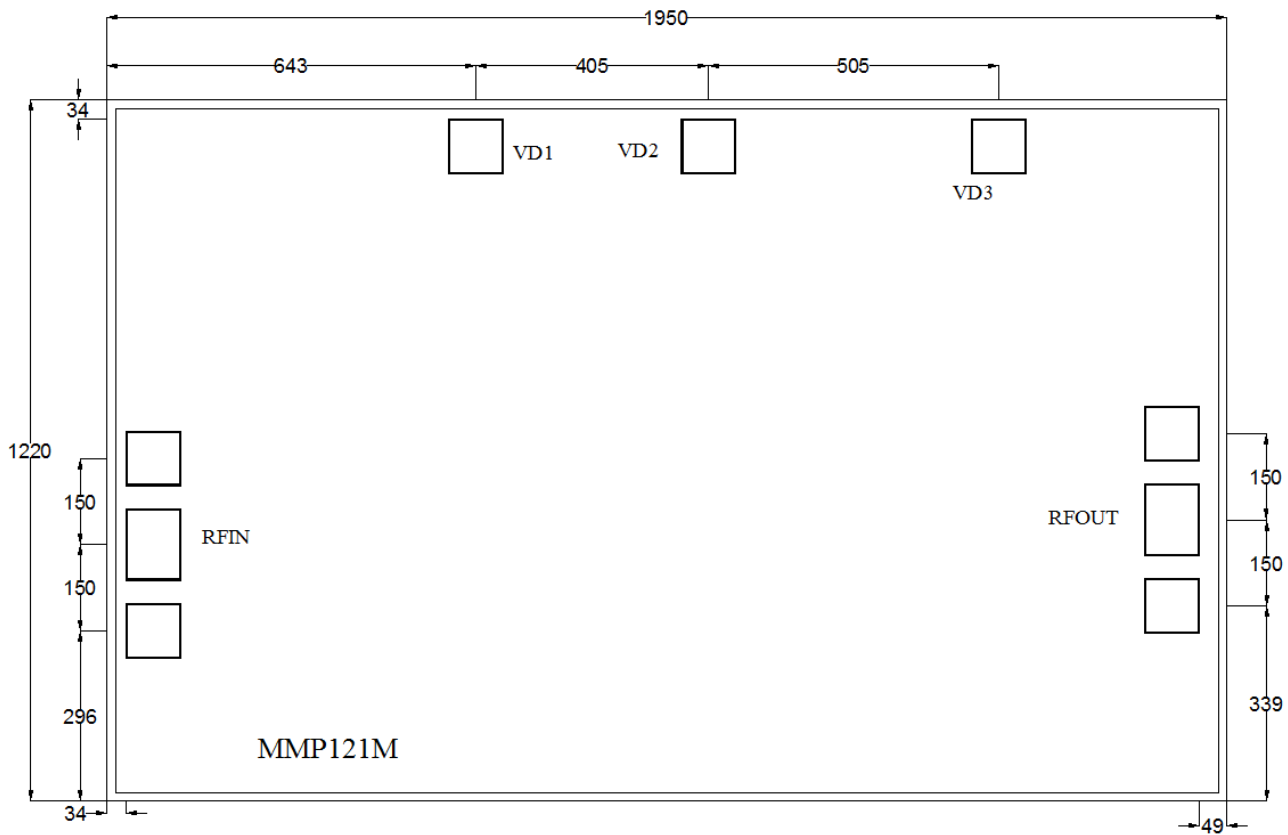
VD (V)	IDD (mA)
+4	151
+5	154



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS



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

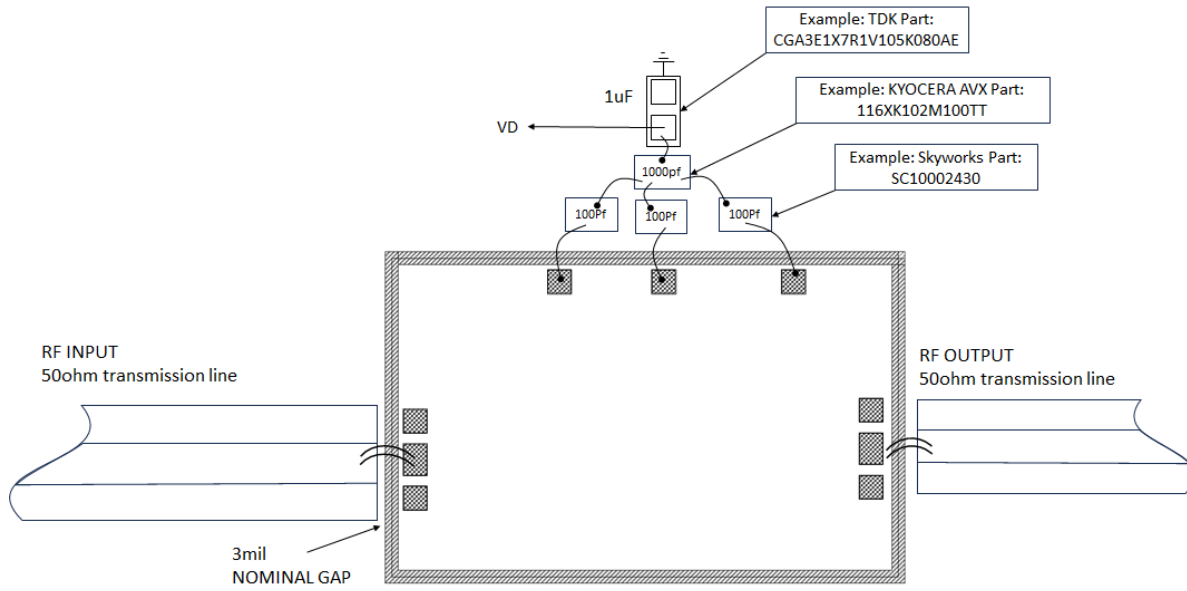


#### Notes:

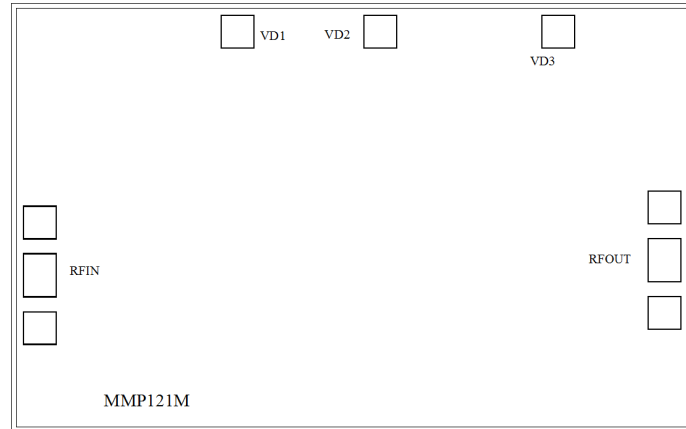
1. Die thickness: 100 $\mu\text{m}$
2. DC bond pad is 100\*100 $\mu\text{m}^2$
3. RF IN/OUT bond pad is 100\*100 $\mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold



### Assembly Drawing



No	Function	Description
1	RF IN	RF signal input 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 1 $\mu$ f ,100pf and 1000pf 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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