



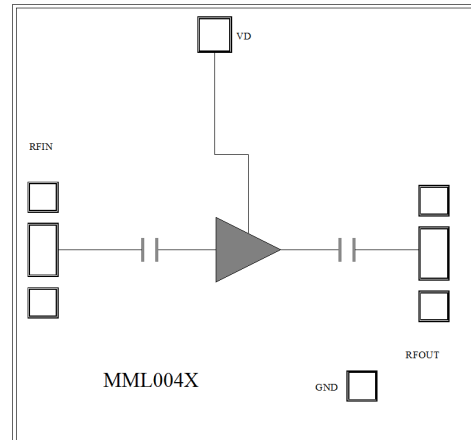
Features

- Single Biasing Voltage (Self Biased)
- Frequency: 2-9GHz
- Small Signal Gain: 29dB Typical
- Gain Flatness: ± 1.0 dB Typical
- Noise Figure: 0.6dB Typical
- P1dB: 19dBm Typical
- Power Supply: +5V/90mA
- Input/Output: 50 Ω
- Chip Size: 1.33 x 1.25 x 0.1mm

Typical Applications

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

Functional Block Diagram



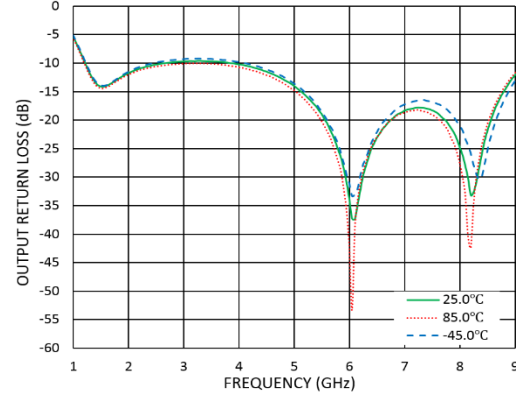
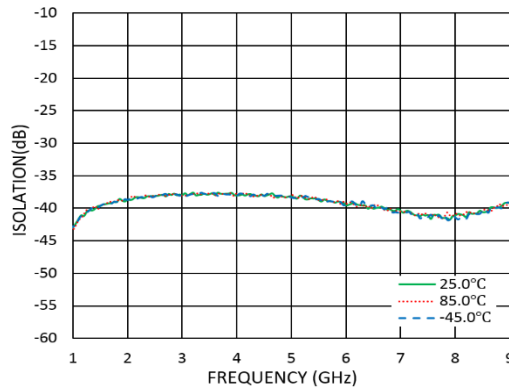
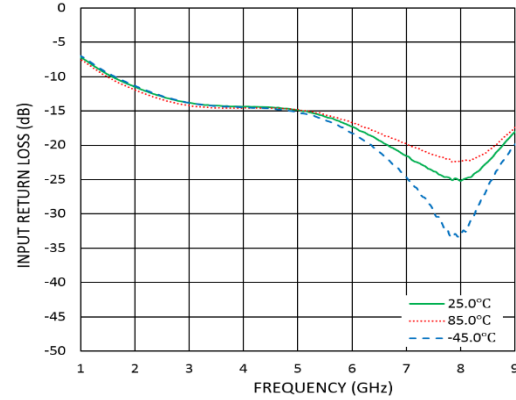
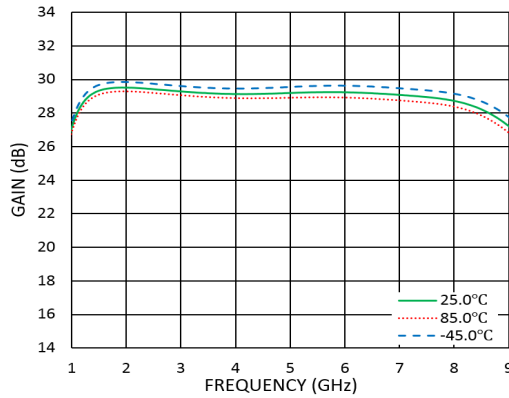
Electrical Specifications

TA = +25°C, VD = +5V, IDD = 90mA Typical

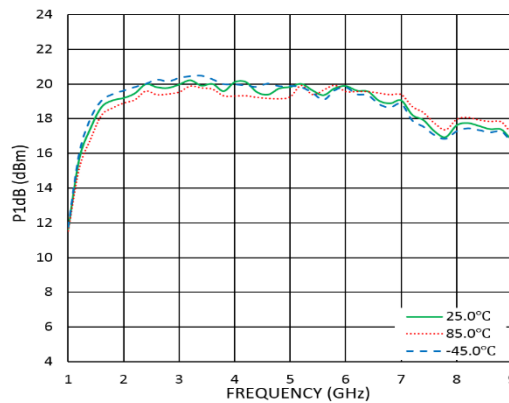
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	2		6	6		9	GHz
Small Signal Gain	28.0	29.0		26.0	28.5		dB
Gain Flatness		± 0.5			± 1.0		dB
Noise Figure		0.6	0.8		0.8	1.0	dB
P1dB - Output 1dB Compression	17.0	19.5		16.0	18.0		dBm
Past - Saturated Output Power		20.0			19.5		dBm
OIP3 - Output Third Order Intercept		31.0			30.0		dBm
Input Return Loss		15.0			22.0		dB
Output Return Loss		12.0			20.0		dB



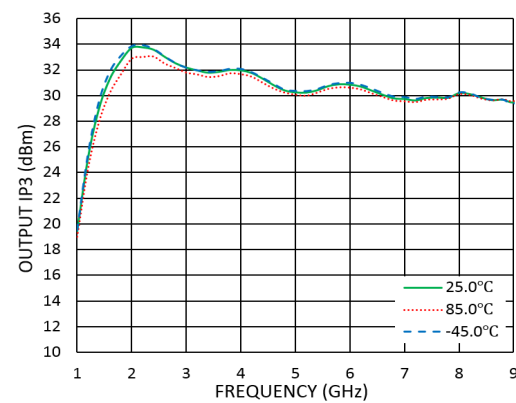
Measurement Plots: S-parameters



Measurement Plots: P1dB

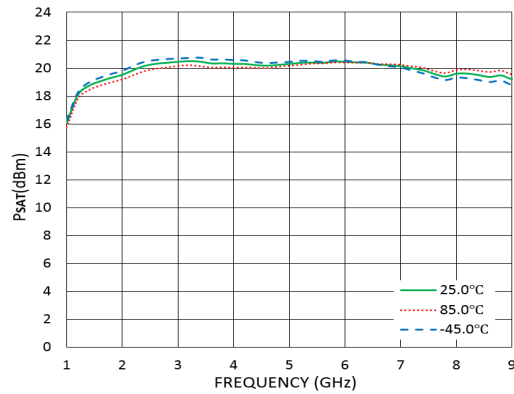


Measurement Plots: OIP3

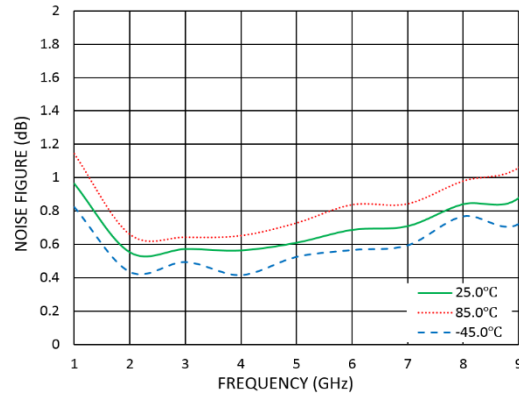




Measurement Plots: P_{SAT}



Measurement Plots: Noise Figure



Absolute Maximum Ratings

Drain Bias Voltage (V _D)	+7V
RF Input Power (R _{FIN})(V _D =+5V)	+20dBm
Channel Temperature	175°C
Continuous P _{diss} (T = 85 °C) (derate 7.8mW/°C above 85 °C)	0.7W
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. V_D

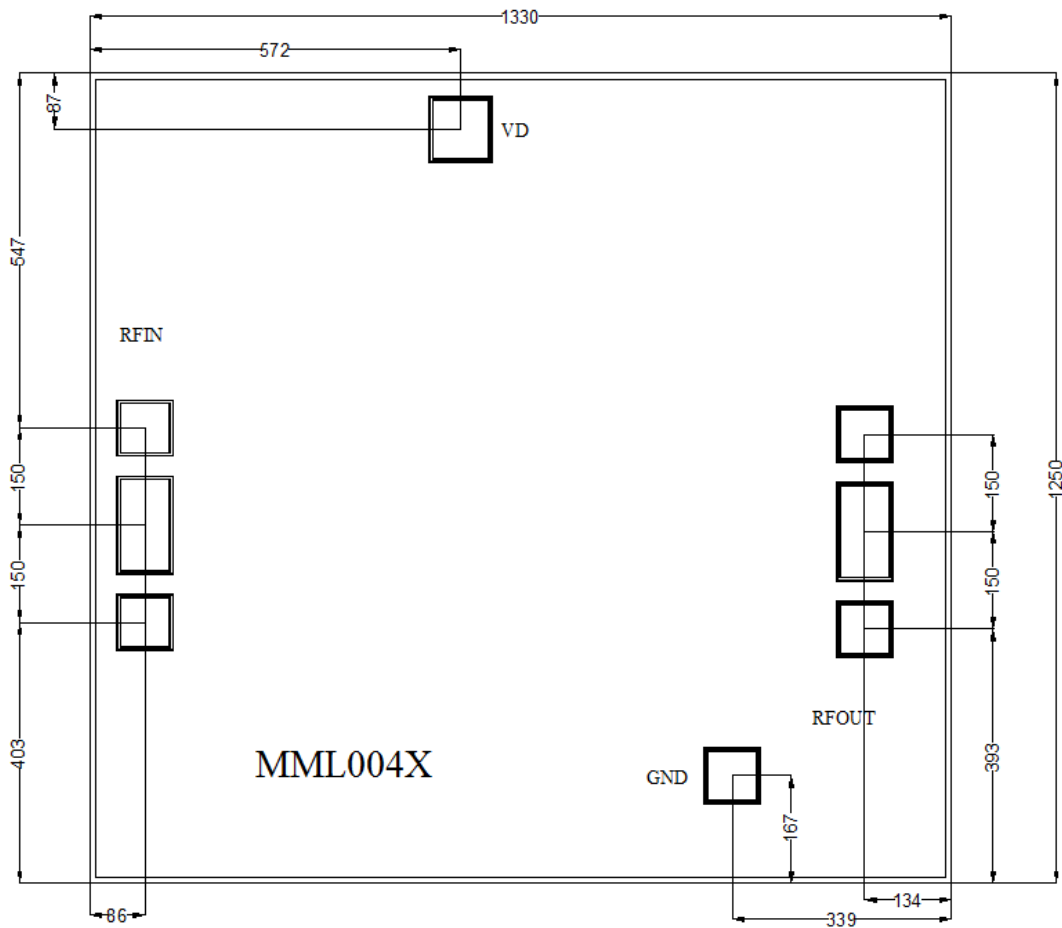
V _D (V)	I _{DD} (mA)
+5	90



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS



Outline Drawing:
All Dimensions in μm

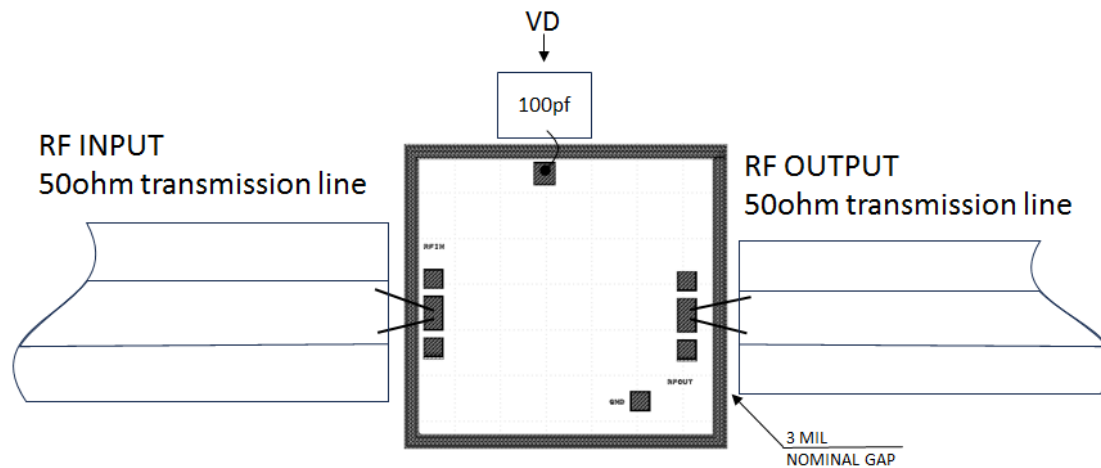


Notes:

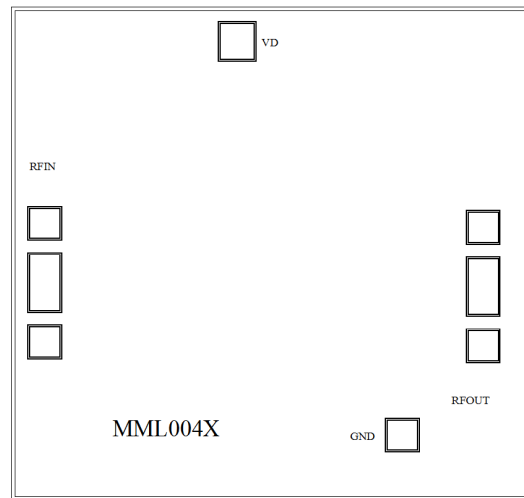
1. Die thickness: $100\mu\text{m}$
2. DC bond pad is $100 \times 100 \mu\text{m}^2$
3. RF IN/OUT bond pad is $100 \times 100 \mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold



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 100pf 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 +5.0 V .
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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