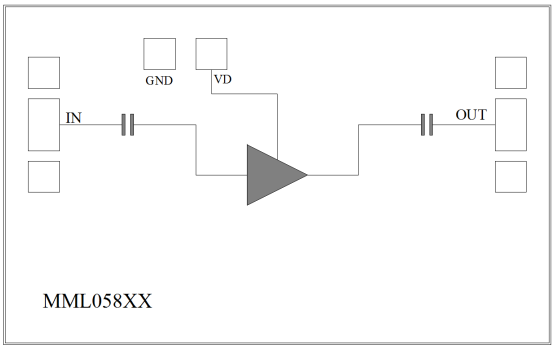
Features

- Single Biasing Voltage (Self Biased)
- Frequency: 1-20GHz
- Small Signal Gain: 16.5dB Typical
- Gain Flatness: ±0.3dB Typical
- Noise Figure:1.5dB Typical
- P1dB: 18dBm Typical
- Power Supply: +5V@72mA
- Input/Output: 50Ω
- Chip Size: 1.58 x 0.98 x 0.1mm

Functional Block Diagram



Typical Applications

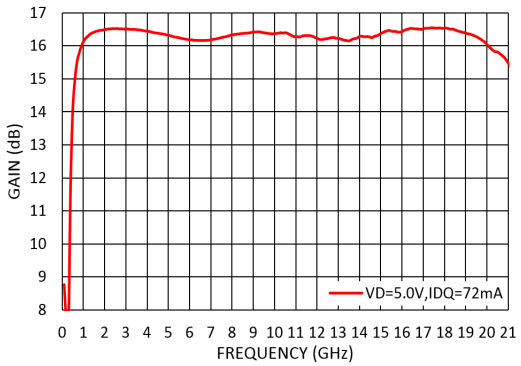
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

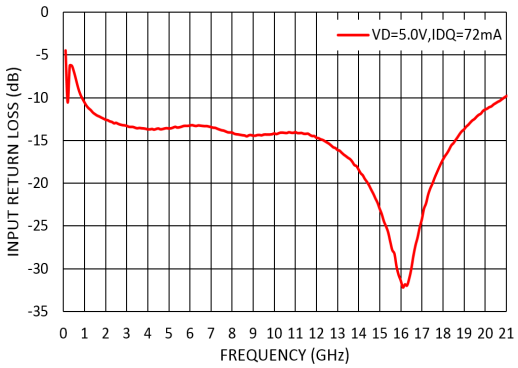
Electrical Specifications

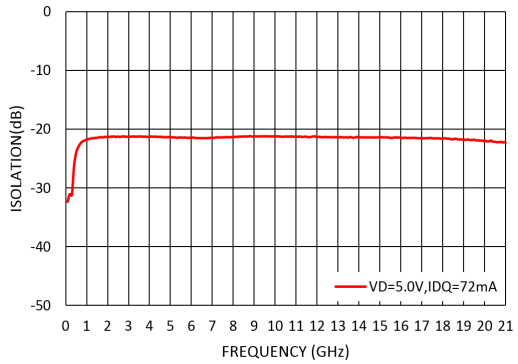
TA = +25°C, VD = +5V, IDD = 72mA Typical

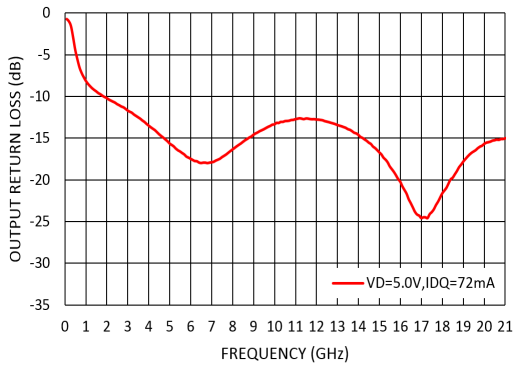
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	1		12	12		20	GHz
Small Signal Gain	15	16.5		15	16.5		dB
Gain Flatness		±1.0			±0.5		dB
Noise Figure		1.5	1.8		1.8	2.3	dB
P1dB - Output 1dB Compression	17	18		17	18		dBm
Psat - Saturated Output Power		19			19		dBm
OIP3 - Output Third Order Intercept		28			28		dBm
Input Return Loss		-13			-14		dB
Output Return Loss		-12			-15		dB

Measurement Plots: S-parameters

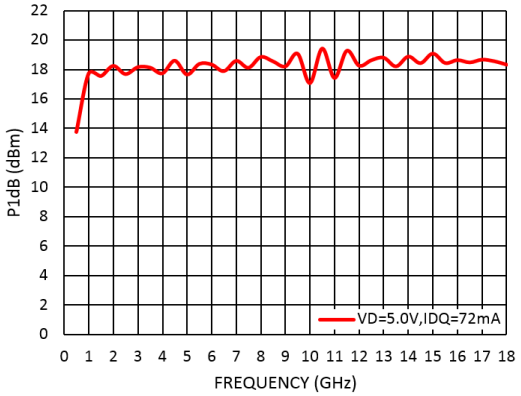




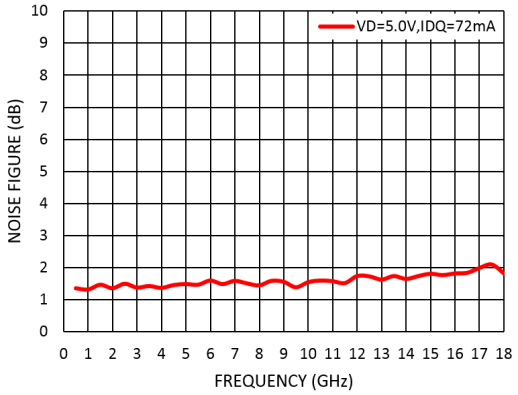




Measurement Plots: P1dB



Measurement Plots: Noise Figure



Absolute Maximum Ratings

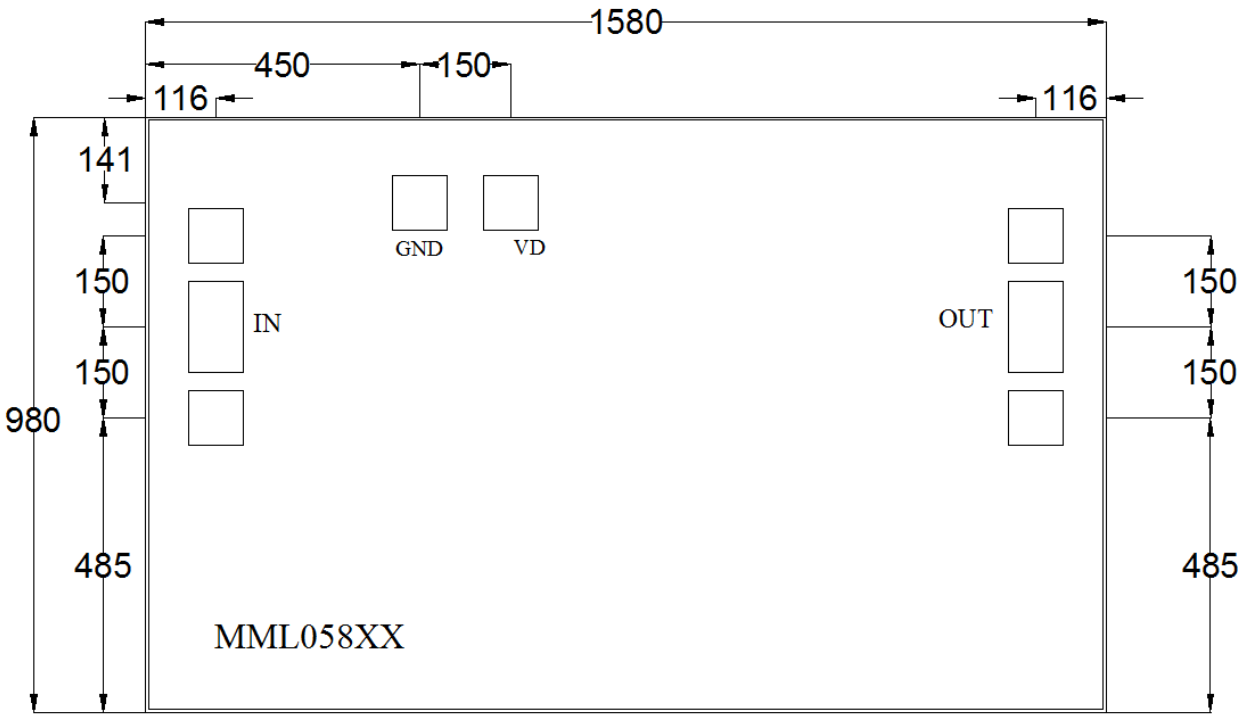
Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)	+18dBm
Channel Temperature	165°C
Continuous Pdiss (T = 85 °C) (derate 6.2mW/°C above 85 °C)	0.56W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150 °C

Typical Supply Current vs. VD

VD (V)	IDD (mA)
+5	72

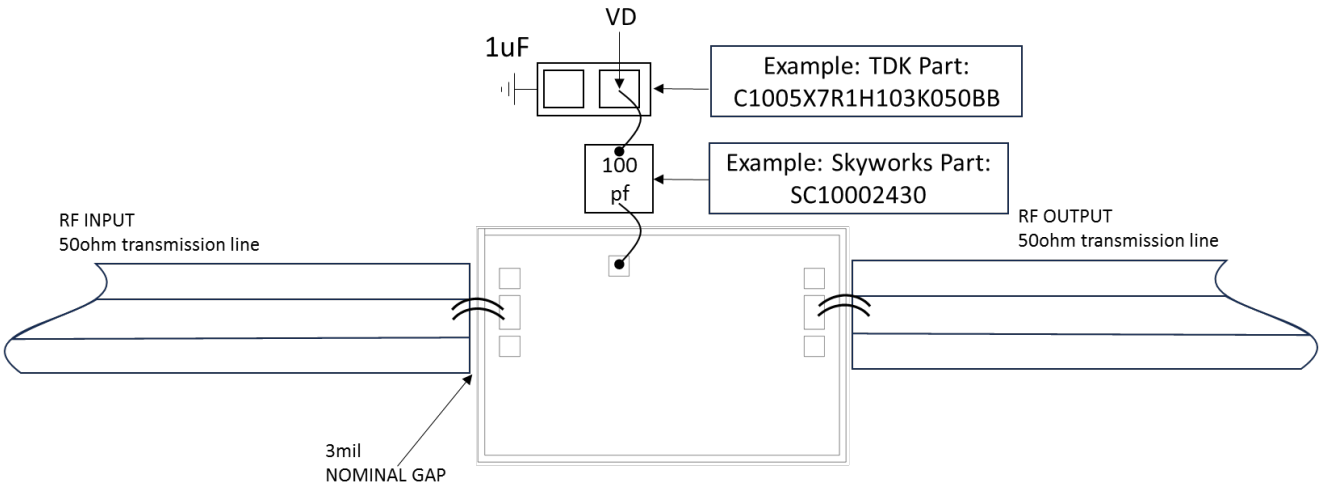
ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing:
All Dimensions in µm

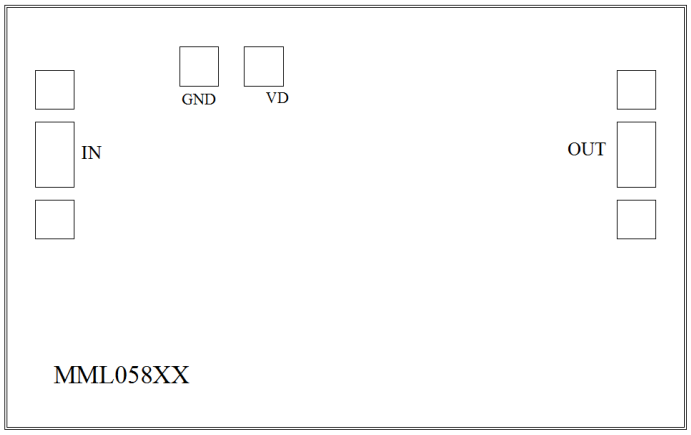


Notes:
1. Die thickness: 100µm
2. DC bond pad is 90*90µm^2
3. RF IN/OUT bond pad is 90*150µm^2
4. Bond pad metalization: Gold
5. Backside metalization: Gold

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.