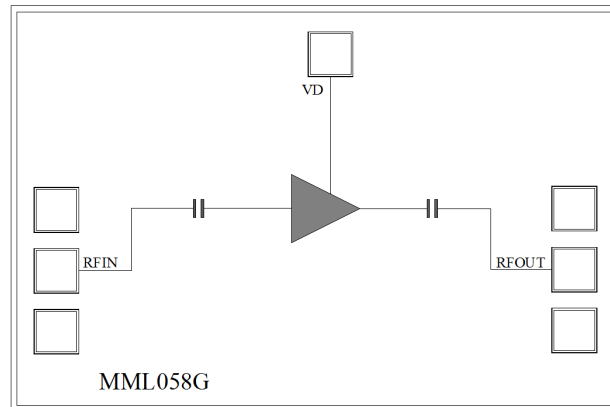




Features

- Single Biasing Voltage (Self Biased)
- Frequency: 1-17GHz
- Small Signal Gain: 16dB Typical
- Gain Flatness: ± 0.3 dB Typical
- Noise Figure: 1.5dB Typical
- P1dB: 17dBm Typical
- Power Supply: +5V@50mA
- Input/Output: 50 Ω
- Chip Size: 1.5 x 1.0 x 0.1mm

Functional Block Diagram



Typical Applications

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

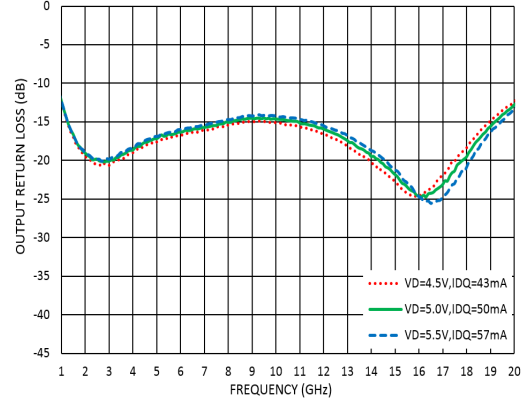
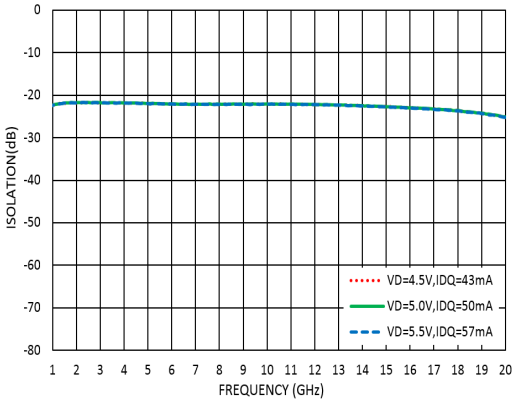
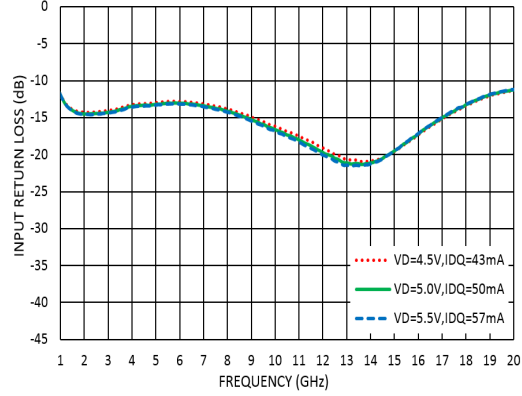
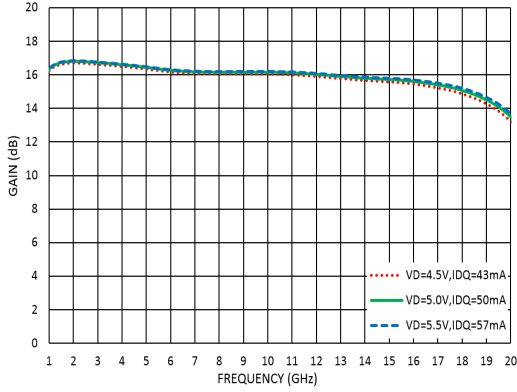
Electrical Specifications

TA = +25°C, VD = +5V, IDD = 50mA Typical

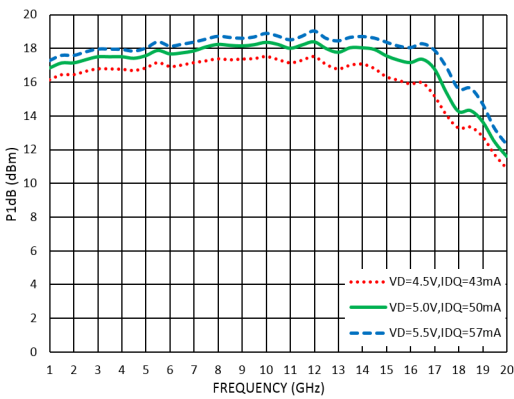
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	1		12	12		17	GHz
Small Signal Gain	15	16		14.5	15		dB
Gain Flatness		± 0.3			± 1.0		dB
Noise Figure		1.25	1.5		1.5	1.8	dB
P1dB - Output 1dB Compression	16	17		16	18		dBm
Psat - Saturated Output Power		18.5			19		dBm
OIP3 - Output Third Order Intercept		28			25		dBm
Input Return Loss		-14			-14		dB
Output Return Loss		-15			-15		dB



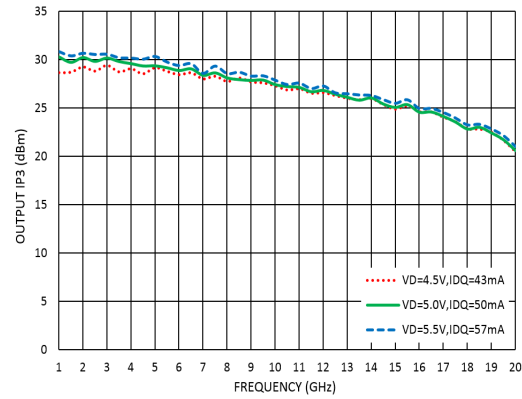
Measurement Plots: S-parameters

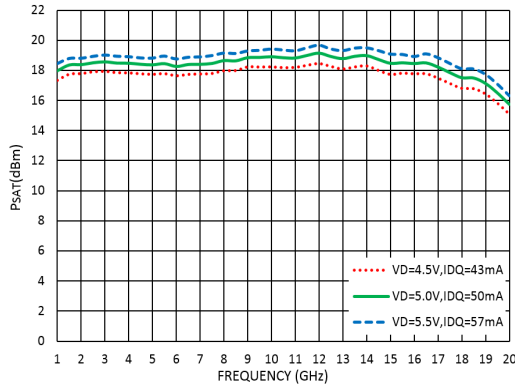
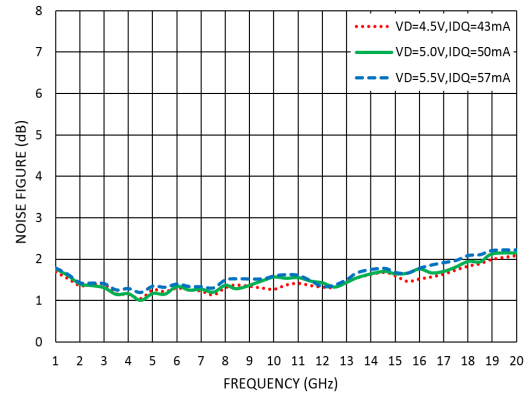


Measurement Plots: P1dB



Measurement Plots: OIP3



Measurement Plots: PSAT

Measurement Plots: Noise Figure

Absolute Maximum Ratings

Drain Bias Voltage (VD)	+6V
RF Input Power (RFIN)	+20dBm
Channel Temperature	175°C
Continuous Pdiss (T = 85 °C) (derate 4.3mW/°C above 85 °C)	0.39W
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

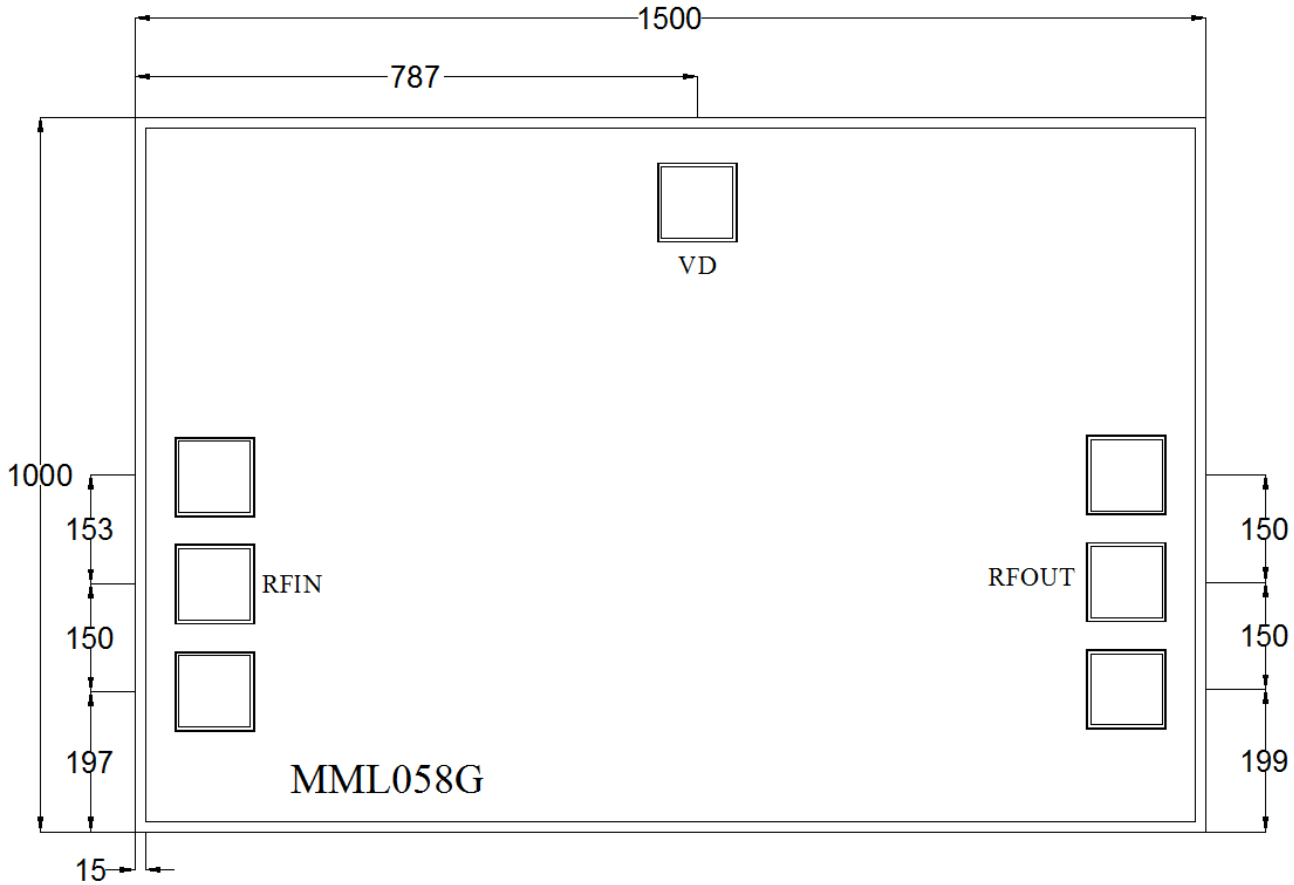
VD (V)	IDD (mA)
+4.5	43
+5.0	50
+5.5	57



ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS



Outline Drawing:
All Dimensions in μm

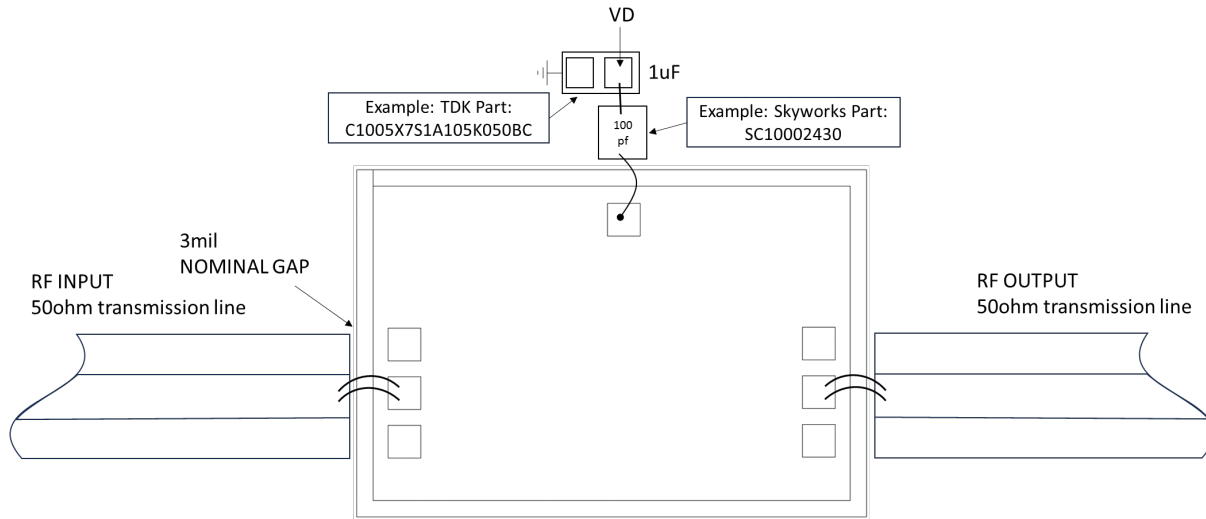


Notes:

1. Die thickness: 100 μm
2. DC bond pad is 100*100 μm^2
3. RF IN/OUT bond pad is 100*100 μm^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 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 V_D and set to +5V .
3. Apply RF signal.

Turn OFF procedure:

1. Turn off the RF signal.
2. Turn off the positive drain voltage V_D .

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