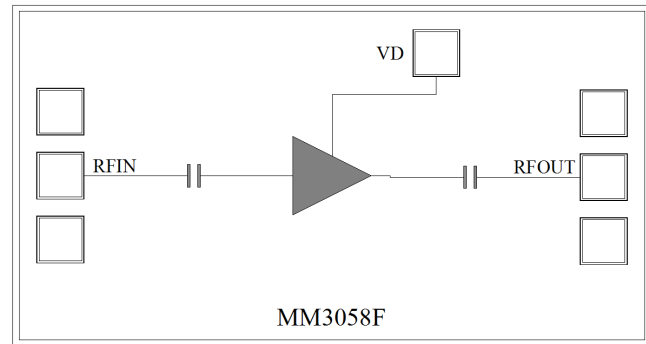




Features

- Single Biasing Voltage (Self Biased)
- Frequency: 18-44GHz
- Small Signal Gain: 19.5dB Typical
- Gain Flatness: ± 0.5 dB Typical
- Psat: 17dBm Typical
- Supply Voltage: $V_D = +5V @ 71mA$
- Input/Output: 50Ω
- Die Size: 1.5 x 0.8 x 0.1mm

Functional Block Diagram



Typical Applications

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

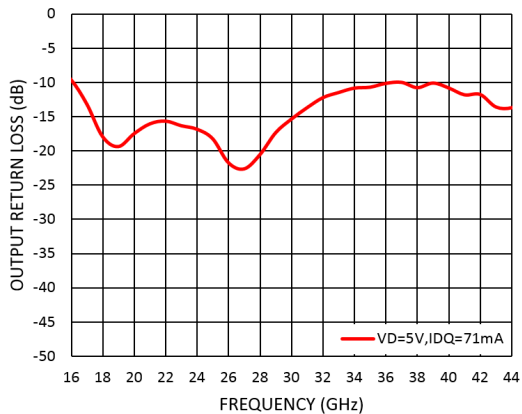
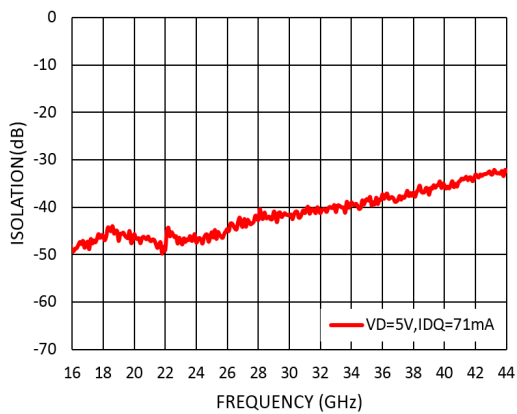
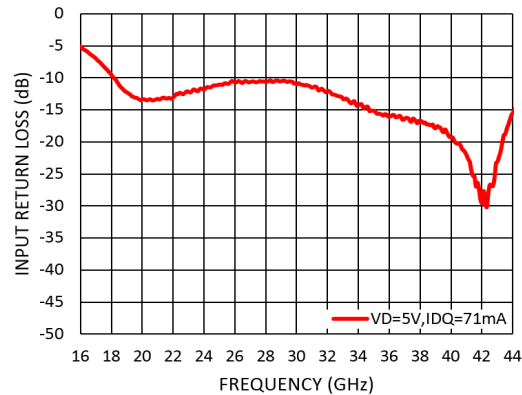
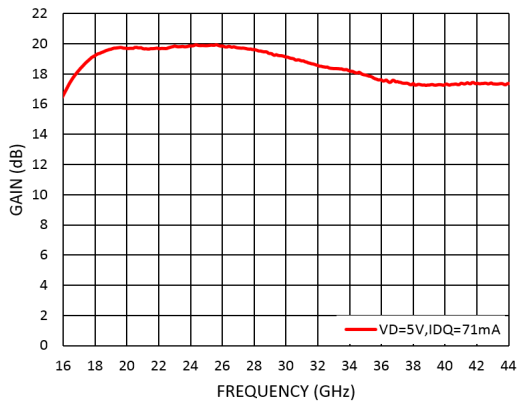
Electrical Specifications

TA = +25°C, VD=+5V, IDD = 71mA Typical

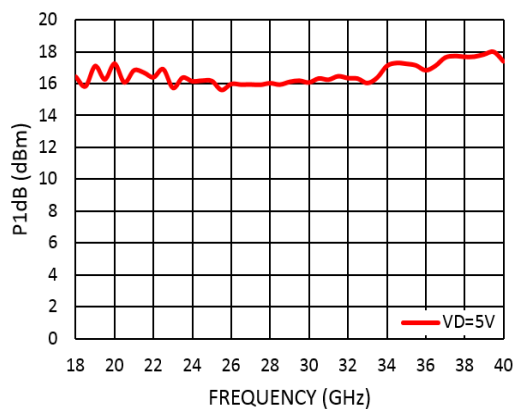
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	18		28	28		44	GHz
Small Signal Gain	18	19.5		16.5	17.5		dB
Gain Flatness		± 0.5			± 1.0		dB
Noise Figure		2.3	3.0		2.8	3.5	dB
P1dB - Output 1dB Compression	14	16		14	16		dBm
Psat - Saturated Output Power		17			17		dBm
Input Return Loss		-10			-12		dB
Output Return Loss		-16			-10		dB



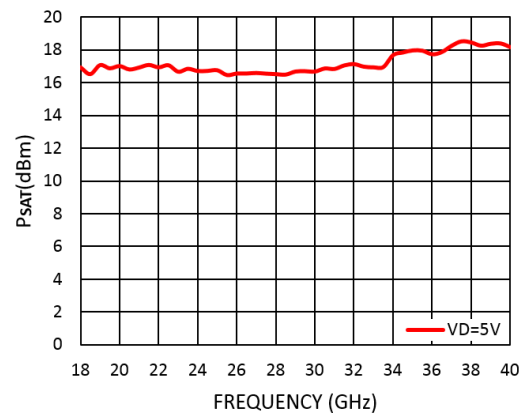
Measurement Plots: S-parameters

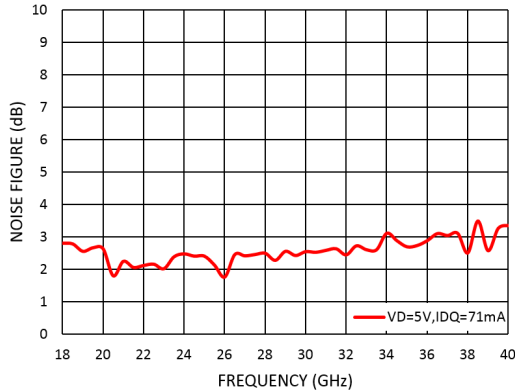


Measurement Plots: P1dB



Measurement Plots: PSAT



Measurement Plots: Noise Figure

Absolute Maximum Ratings

Drain Bias Voltage (VD)	+7V
RF Input Power (RFIN)@(+5V)	+10dBm
Channel Temperature	175 °C
Continuous P _{diss} (T = 85 °C) (derate 6.1mW/°C above 85 °C)	0.55W
Thermal Resistance (channel to die bottom)	50°C/W
Operating Temperature	-55°C to +85 °C
Storage Temperature	-65°C to +150°C

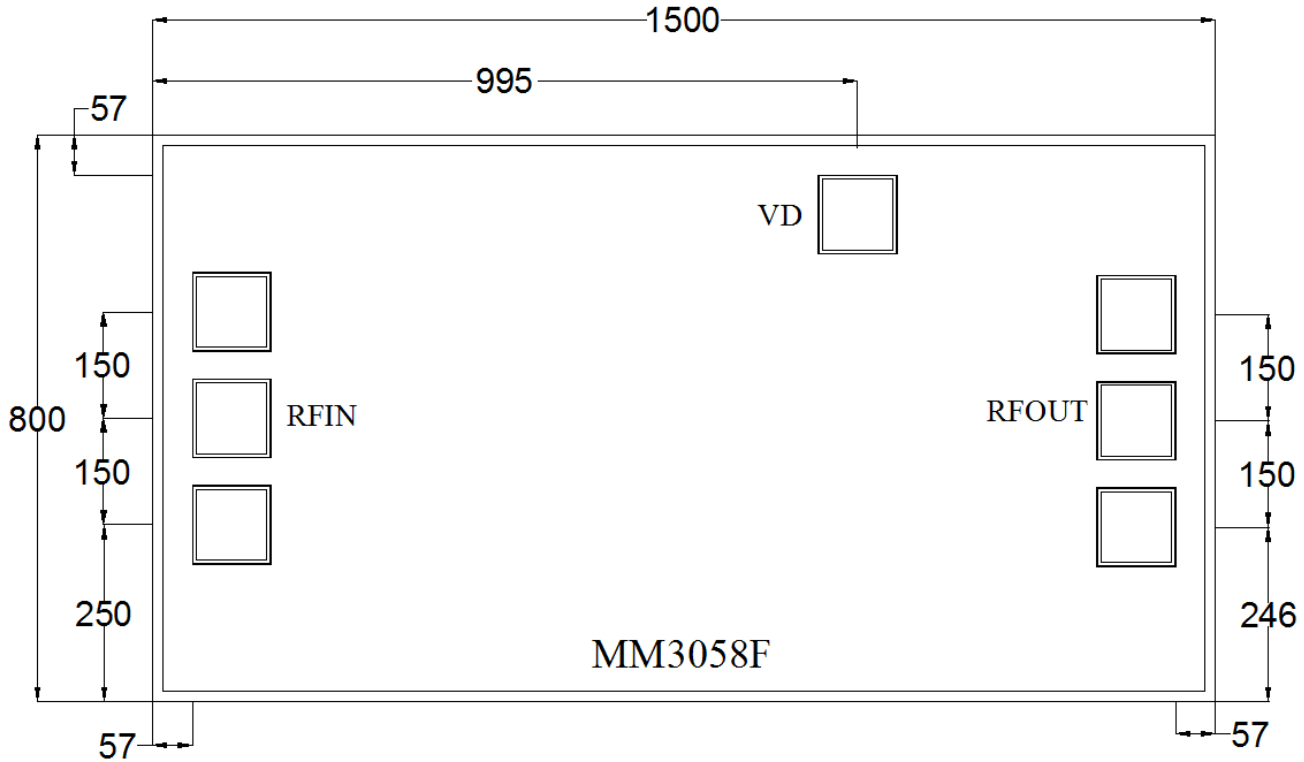
Typical Supply Current vs. VD

VD (V)	IDD (mA)
+5	71


 ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS



Outline Drawing:
All Dimensions in μm

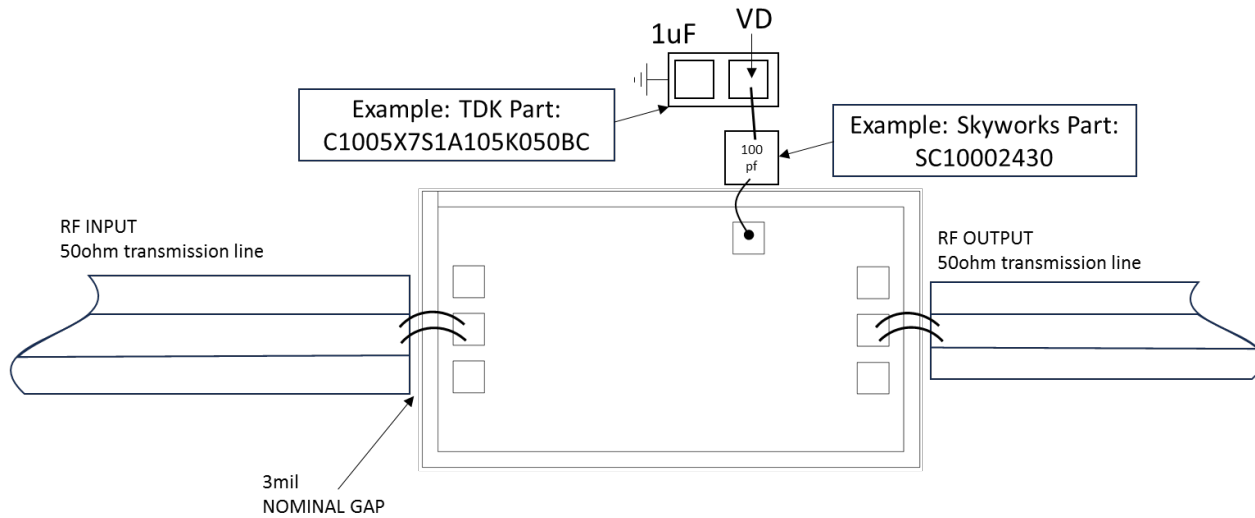


Notes:

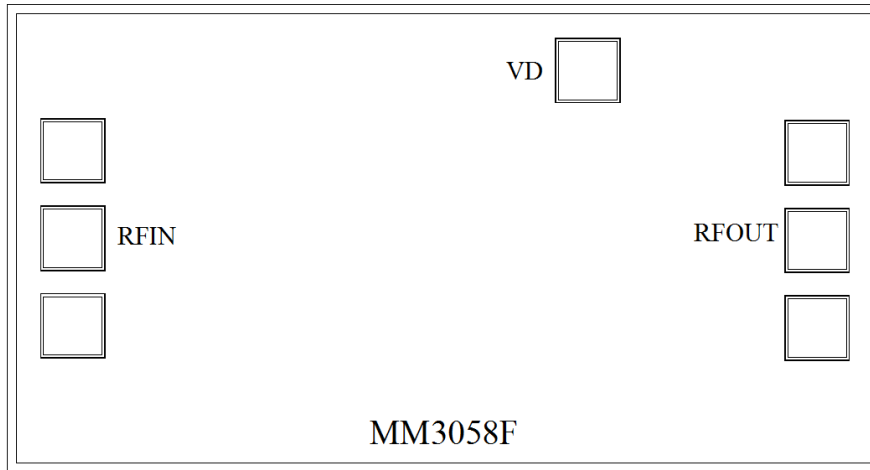
1. Die thickness: 100 μm
2. DC bond pad is 100*100 μm^2
3. RF IN/OUT bond pad is 100*100 μm^2
4. Bond pad metalization: Gold
5. Backside metalization: Gold



Assembly Drawing



No	Function	Description
1	RF IN	RF signal input 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 μ f and 100pf 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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