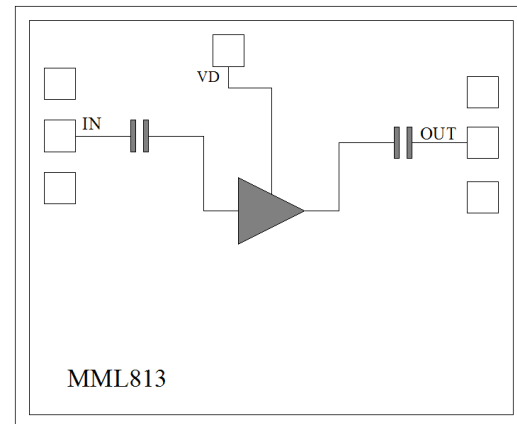


**Features**

- Single Biasing Voltage (Self Biased)
- Frequency: 6-18GHz
- Small Signal Gain: 22dB Typical
- Gain Flatness:  $\pm 1.5$ dB Typical
- Noise Figure: 1.7dB Typical
- P1dB: 18dBm Typical
- Power Supply: +4.5V@59mA
- Input/Output: 50 $\Omega$
- Chip Size: 1.47 x 1.21 x 0.1mm

**Typical Applications**

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

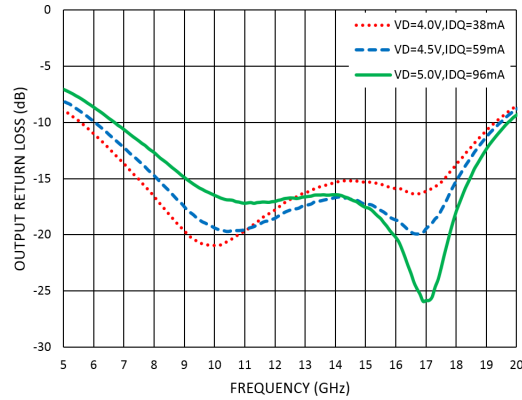
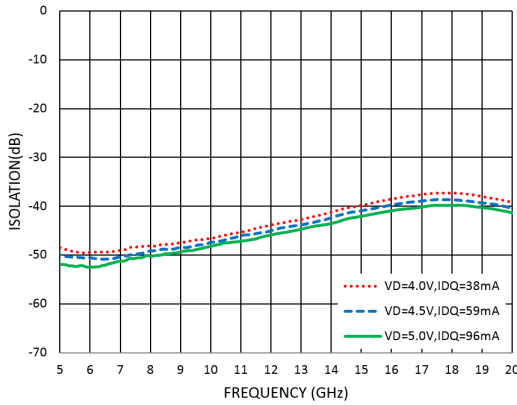
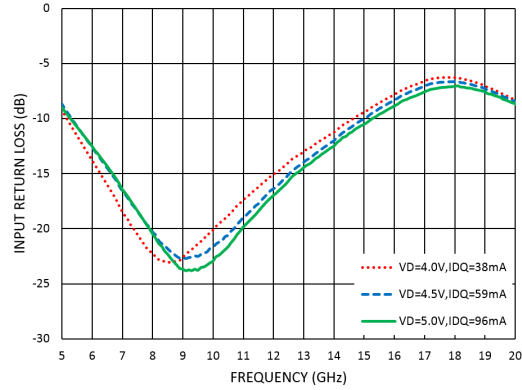
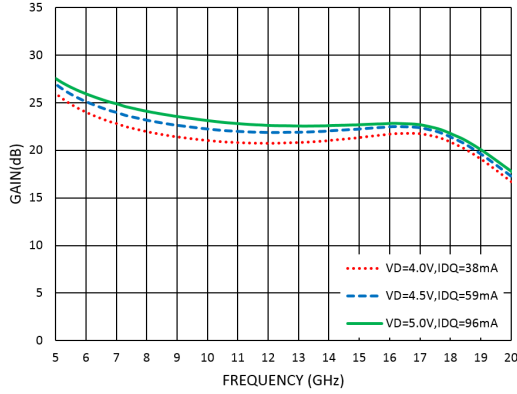
**Functional Block Diagram**

**Electrical Specifications**

TA = +25°C, VD = +4.5V, IDD = 59mA Typical

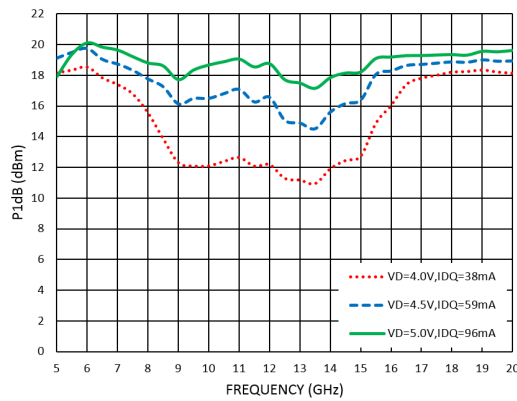
Parameters	Min.	Typ.	Max.	Units
Frequency	6		18	GHz
Small Signal Gain	20.5	22		dB
Gain Flatness		$\pm 1.5$		dB
Noise Figure		1.7	1.9	dB
P1dB - Output 1dB Compression	14	16		dBm
Psat - Saturated Output Power		18		dBm
OIP3 - Output Third Order Intercept		27		dBm
Input Return Loss		-12		dB
Output Return Loss		-16		dB



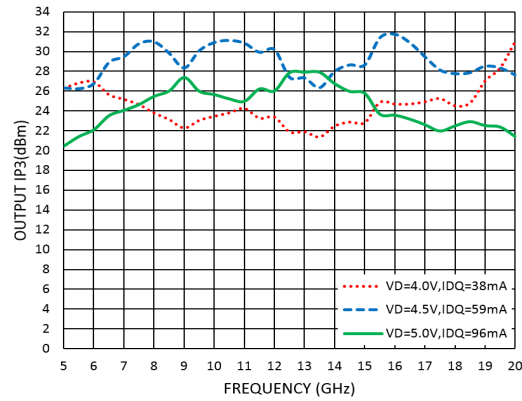
### Measurement Plots: S-parameters

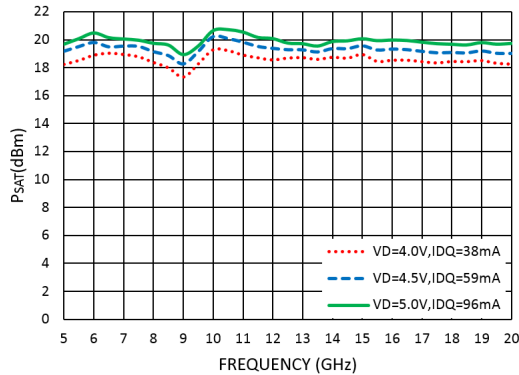
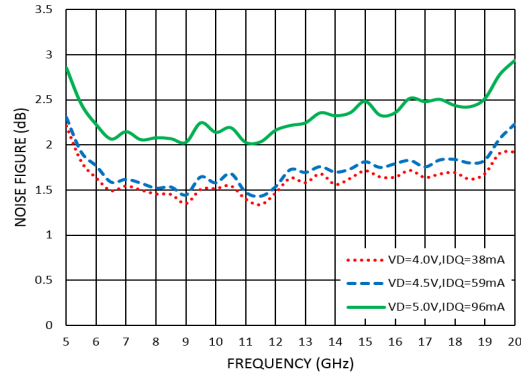


### Measurement Plots: P1dB



### Measurement Plots: OIP3



**Measurement Plots: PSAT**

**Measurement Plots: Noise Figure**

**Absolute Maximum Ratings**

Drain Bias Voltage (VD)	<b>+6.5V</b>
RF Input Power (RFIN)@(+5V)	<b>+8dBm</b>
Channel Temperature	<b>175°C</b>
Continuous Pdiss (T = 85 °C) (derate 1.06mW/°C above 85 °C)	<b>0.95W</b>
Thermal Resistance (channel to die bottom)	<b>50°C/W</b>
Operating Temperature	<b>-40°C to +85 °C</b>
Storage Temperature	<b>-65°C to +150 °C</b>

**Typical Supply Current vs. VD**

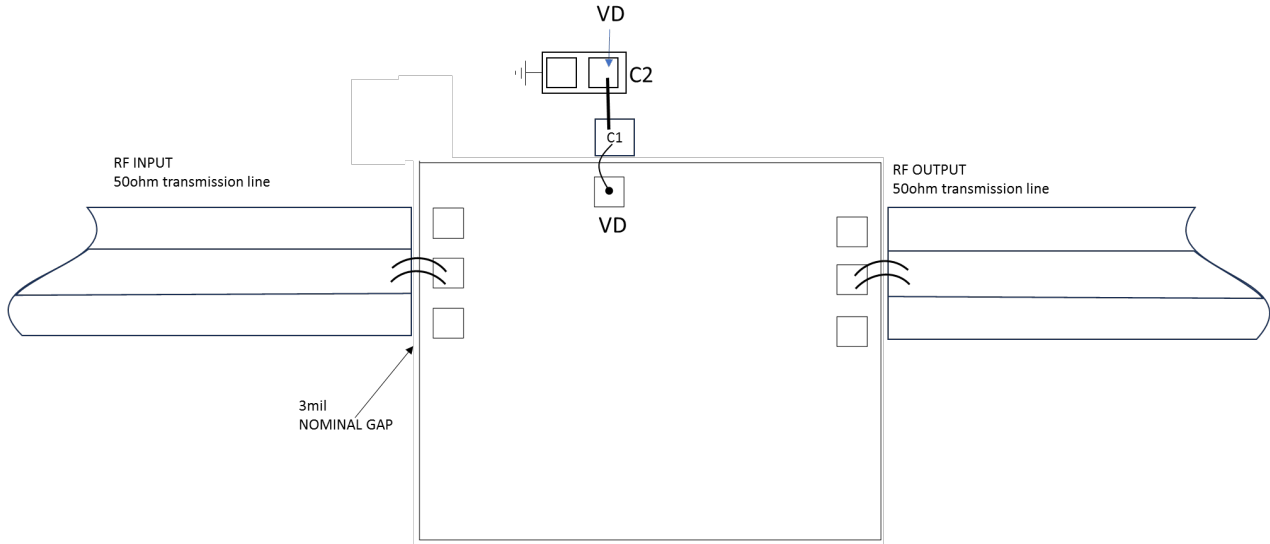
VD (V)	IDD (mA)
<b>+4.0</b>	<b>38</b>
<b>+4.5</b>	<b>59</b>
<b>+5.0</b>	<b>96</b>


**ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS**



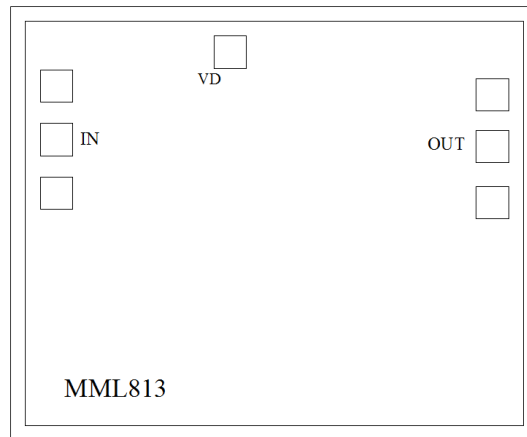


### Assembly Drawing



Item	Description
C1	100pF Example: Presidio Part: MVB3030X103M2H5C1
C2	1 $\mu$ F Example: KYOCERA AVX Part: 116XK102M100TT

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 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  $V_D$  and set to +4.5V .
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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