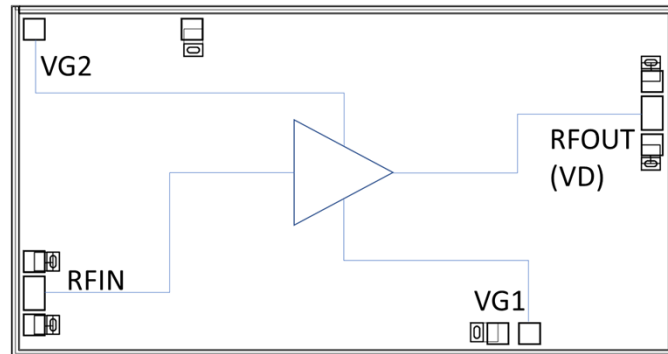


**Features**

- Frequency: 2-12GHz
- Small Signal Gain: 16dB
- Gain Flatness:  $\leq \pm 0.5\text{dB}@2-12\text{GHz}$
- Noise Figure: 2dB@6GHz
- P1dB: 22dBm typical
- Psat: >23dBm typical
- Power Supply: +7V/70mA
- Input/Output: 50Ω
- Die Size: 3.12 x 1.63 x 0.1 mm

**Typical Applications**

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

**Functional Block Diagram**

**Electrical Specifications**

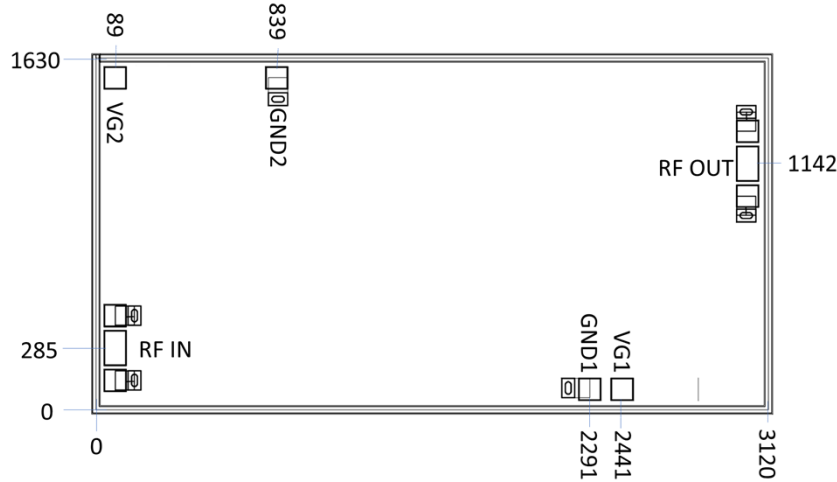
TA = +25°C, VD = +7V, VG1 = -0.68V(Typical), VG2 = 2.1V(Typical), ID = 70mA

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	2 – 6		6 – 12				GHz
Small Signal Gain		16.0			16		dB
Gain Flatness		$\pm 0.2$			$\pm 0.3$		dB
Noise Figure		2.5			2.2		dB
Output 1dB Compression (P1dB)	20	22		19	21		dBm
Saturated Output Power (Psat)		24			22		dBm
Output Third Order Intercept (IP 3)		30			27		dBm
Input Return Loss		17			17		dB
Output Return Loss		15			15		dB

\* Adjust VG1, VG2 slightly to obtain device current of 70mA.



**Outline Drawing:**  
All Dimensions in  $\mu\text{m}$

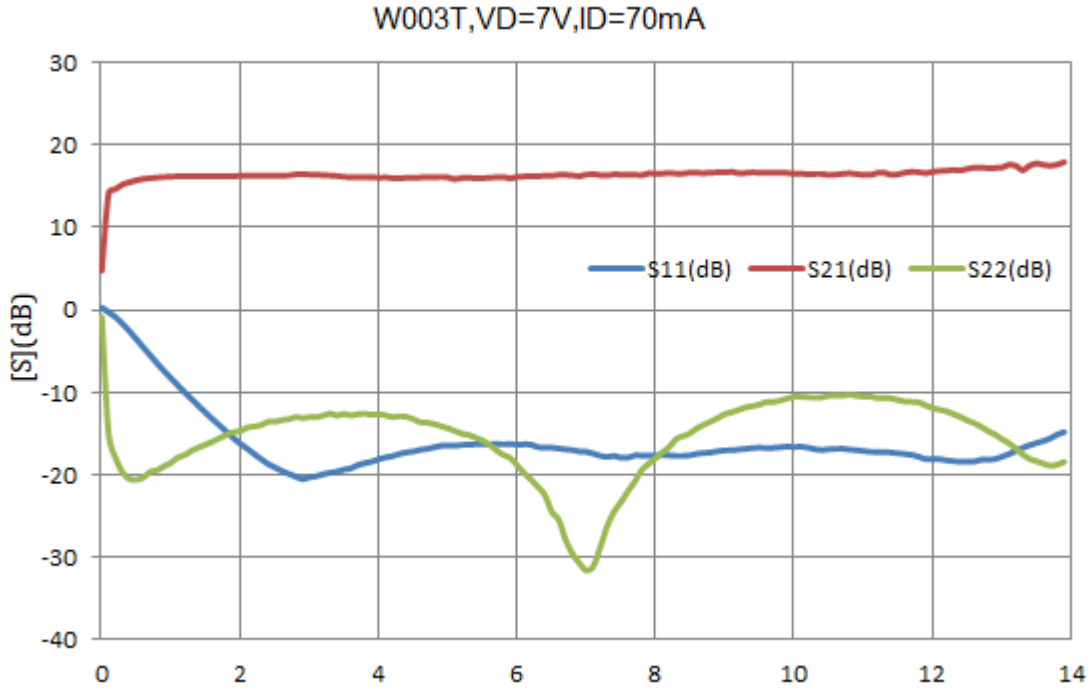


**Pad Description**

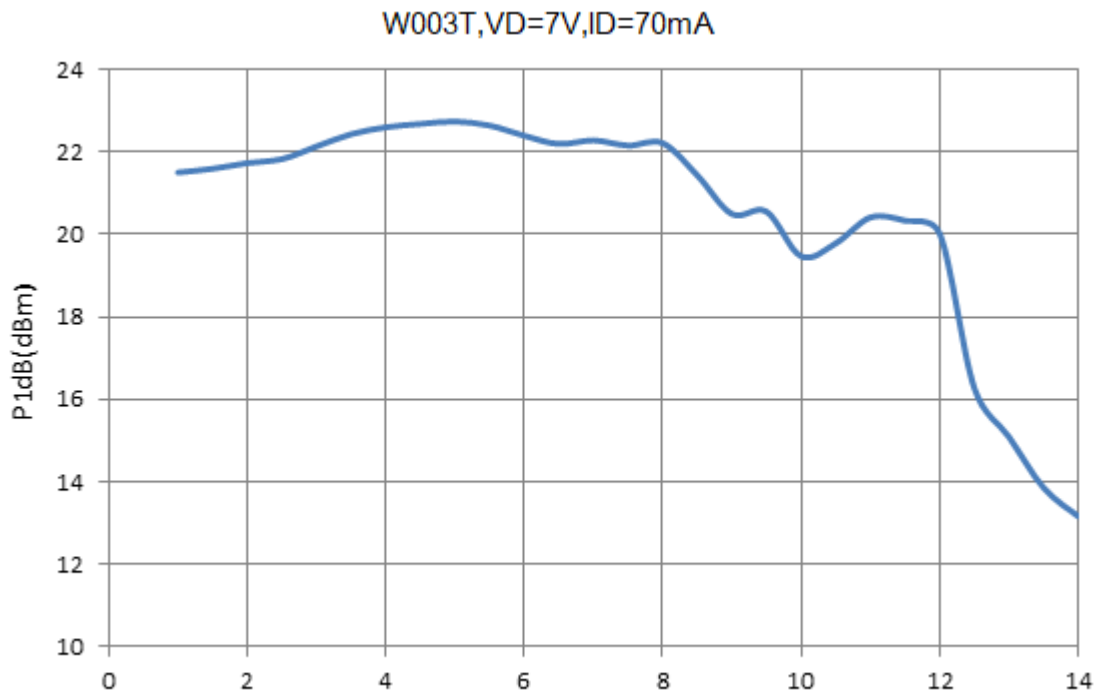
No	Function	Description
1	RF IN	Signal input terminal, connected to 50Ω circuit, DC blocking included on chip.
2	RF OUT	Signal output terminal, connected to 50Ω circuit; blocking capacitor required; external DC biasing network required; drain current provided.
3	VG1	Amplifier 1 <sup>st</sup> gate bias; connect to external 1000pF and 0.01uF bypass capacitors.
4	VG2	Amplifier 2 <sup>nd</sup> gate bias; connect to external 1000pF and 0.01uF bypass capacitors.
5	GND1	Ground pad.
6	GND2	Ground pad.



### Measurement Plots: S-parameters

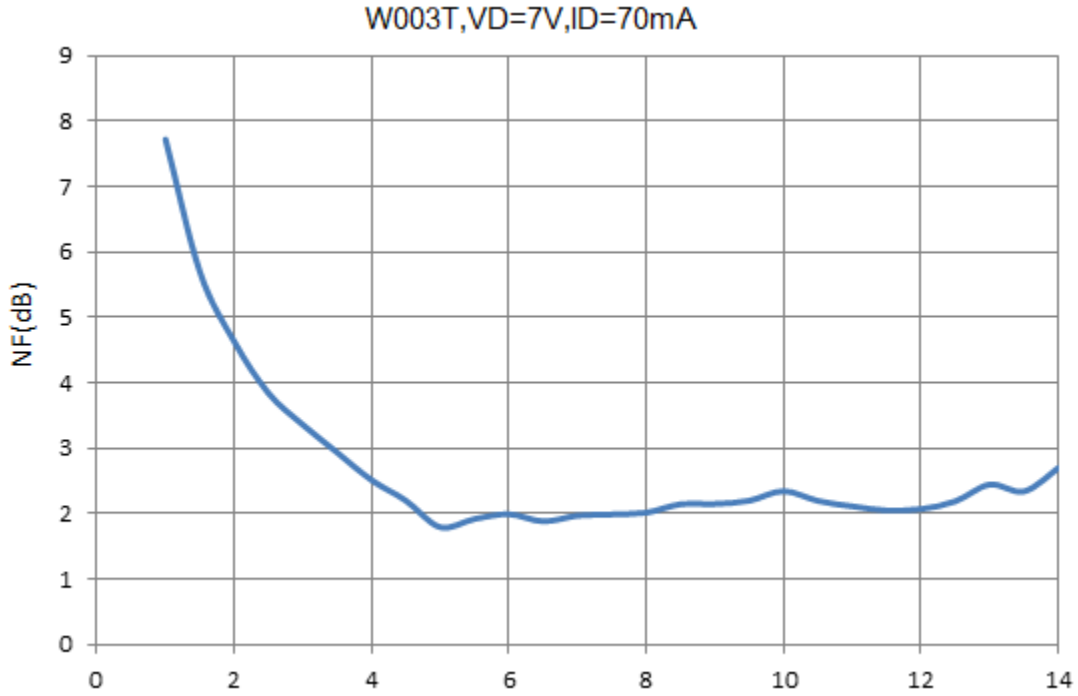


### Measurement Plots: P1dB

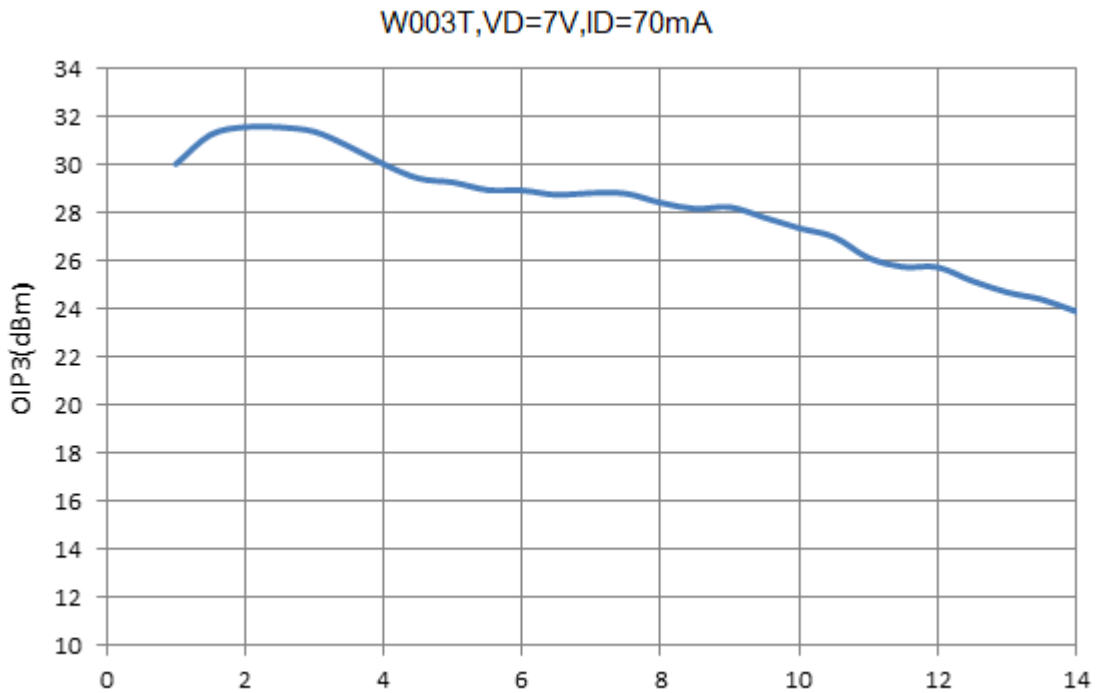




### Measurement Plots: Noise Figure

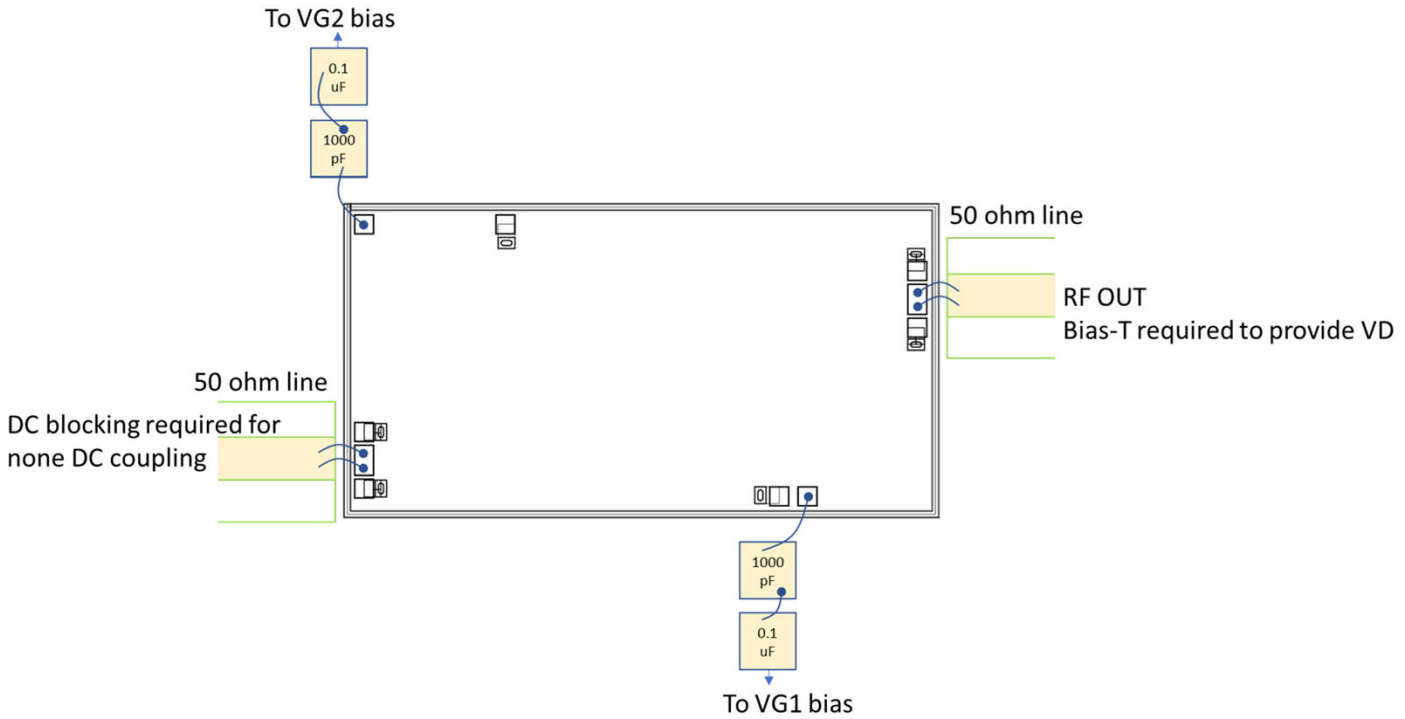


### Measurement Plots: OIP3





### Assembly Drawing



#### Notes:

1. Die thickness: 100um
2. DC bond pad is 100 x 100  $\mu\text{m}^2$
3. RF IN/OUT bond pad is 100 x 160  $\mu\text{m}^2$
4. Bond pad metalization: Gold
5. Backside metalization: Gold
6. Backside of the die (GND)

#### Maximum Ratings:

1. Minimum Maximum drain voltage: +6V to +8V
2. Maximum gate bias: -3V
3. Maximum input power: +20dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C