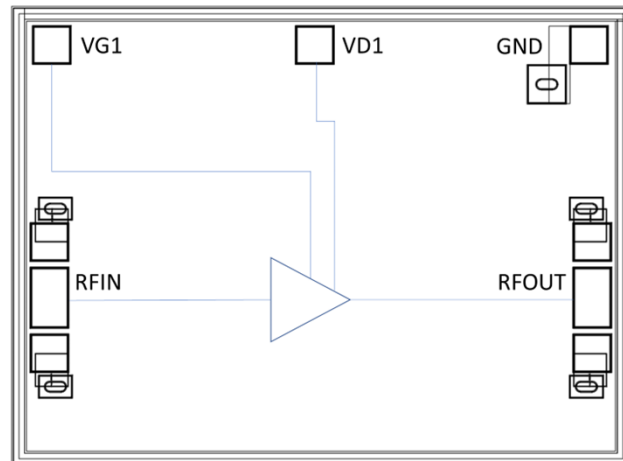


**Features**

- Frequency: 6GHz to 20GHz
- Small Signal Gain: 25.5dB
- Gain Flatness:  $\leq \pm 2\text{dB}@6\text{-}18\text{GHz}$
- Noise Figure:  $\leq 1.4\text{ dB}$
- P1dB: >9dBm, 15dBm at 12GHz
- Psat: >11dBm, 16.5dBm at 10GHz
- Power Supply: +3.5V/85mA
- Input/Output: 50Ω
- Die Size: 1.63 x 1.2 x 0.1 mm

**Typical Applications**

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

**Functional Block Diagram**

**Electrical Specifications**

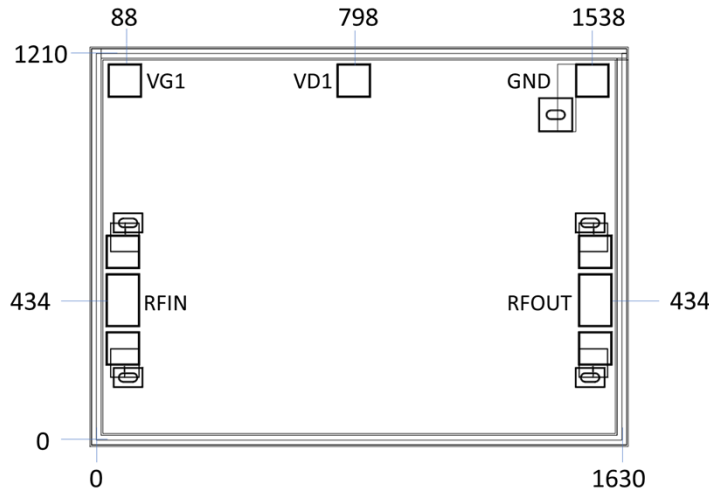
TA = +25°C, VG1 = -0.35V, VD1 = 3.5V, ID = 85mA

Parameters	Typical			Units
	6 – 10	10 – 16	16 – 20	
Frequency	6 – 10	10 – 16	16 – 20	GHz
Small Signal Gain	23.7 – 26.7	27	20 – 26	dB
Gain Flatness	$\pm 1.5$	$\pm 1$	$\pm 3.0$	dB
Noise Figure	1.4	1.6	2.6	dB
Output 1dB Compression (P1dB)	14.5	15.5	16.8	dBm
Saturated Output Power (Psat)	16.0	17.0	17.3	dBm
Input Return Loss	5.8	7	2.7	dB
Output Return Loss	15	16	20	dB

\* Adjust VG1 slightly to obtain device current of 85mA.



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

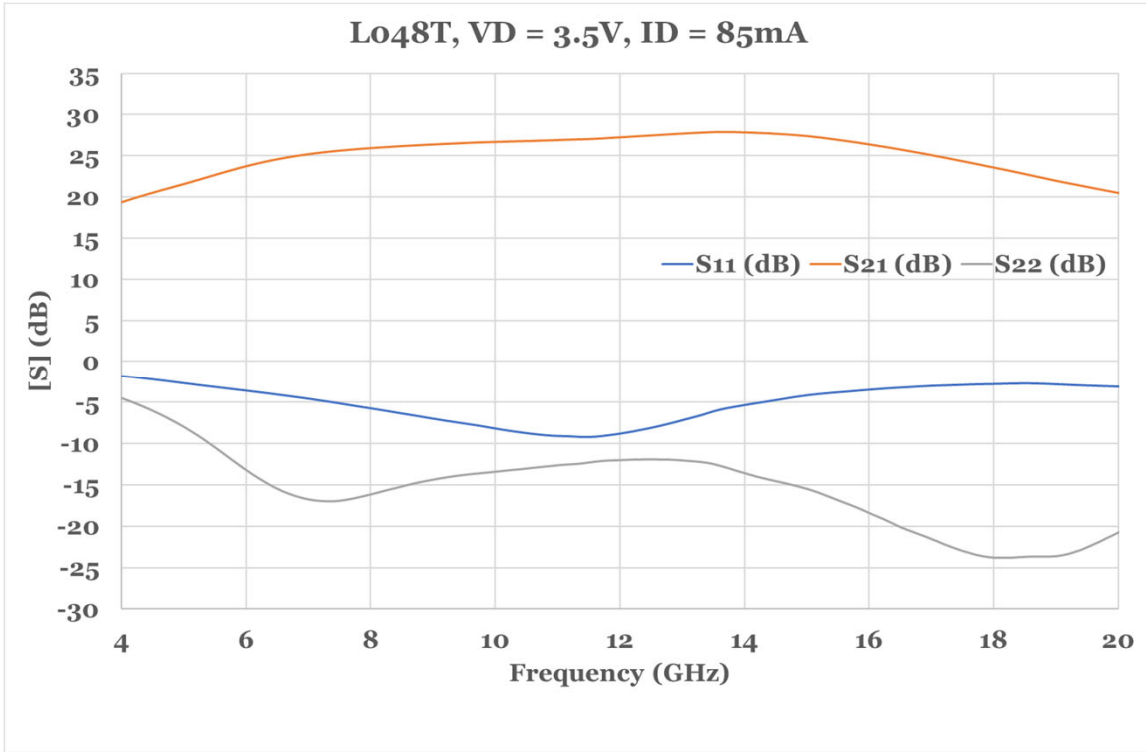


**Pad Description**

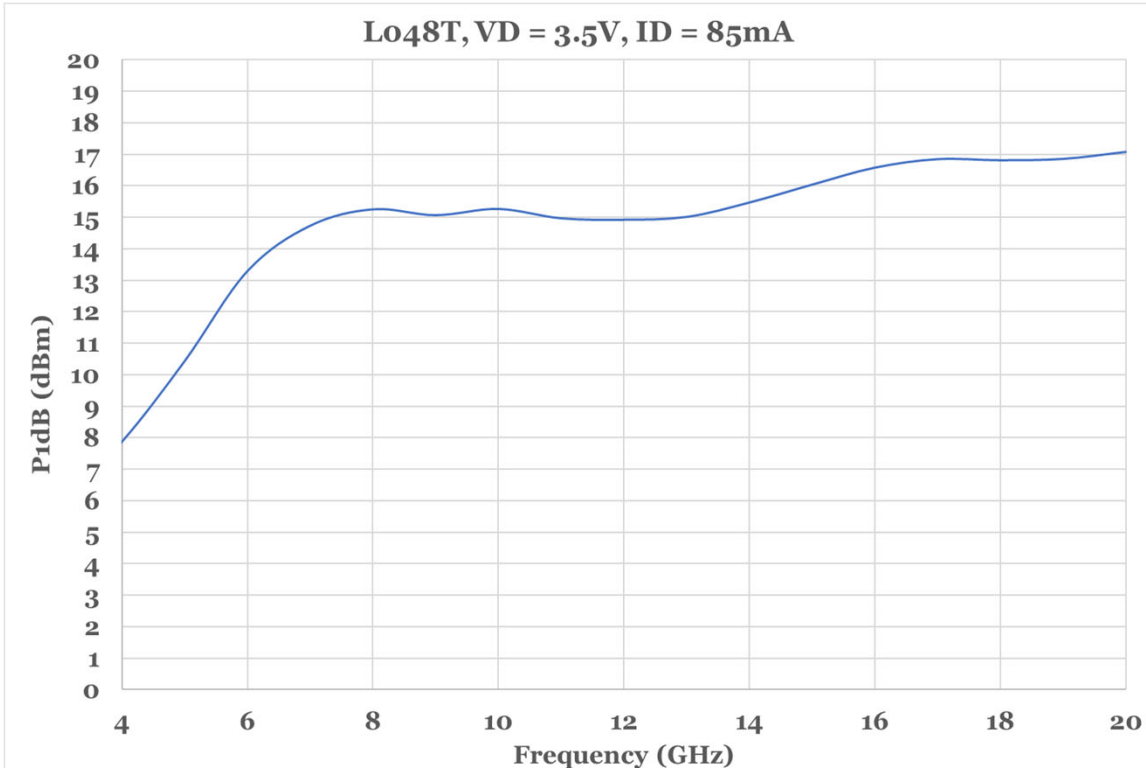
No	Function	Description
1	RF IN	Signal input terminal, connected to 50 $\Omega$ circuit; blocking capacitor included on chip.
2	RF OUT	Signal output terminal, connected to 50 $\Omega$ circuit; blocking capacitor included on chip.
3	VG1	Amplifier gate bias; connect to external 1000pF and 0.1uF bypass capacitors.
4	VD2	Amplifier drain bias; connect to external 1000pF and 0.1uF bypass capacitors.
5	GND	Ground pad.



### Measurement Plots: S-parameters

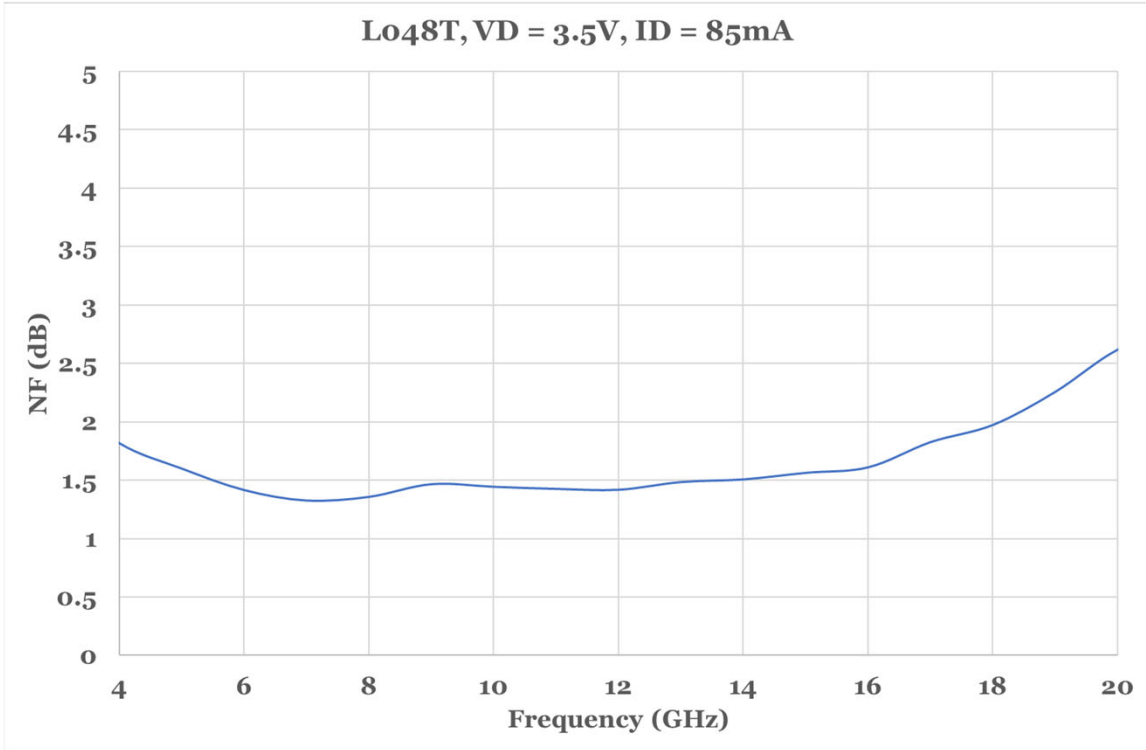


### Measurement Plots: P1dB

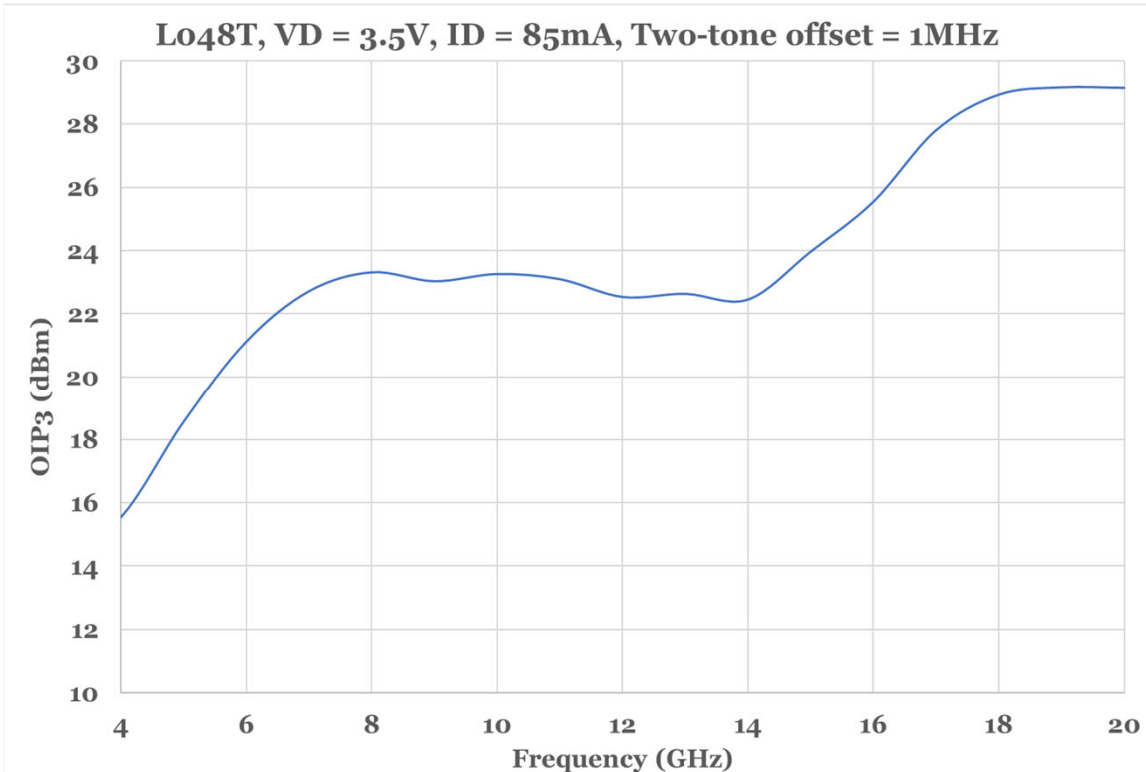




### Measurement Plots: Noise Figure

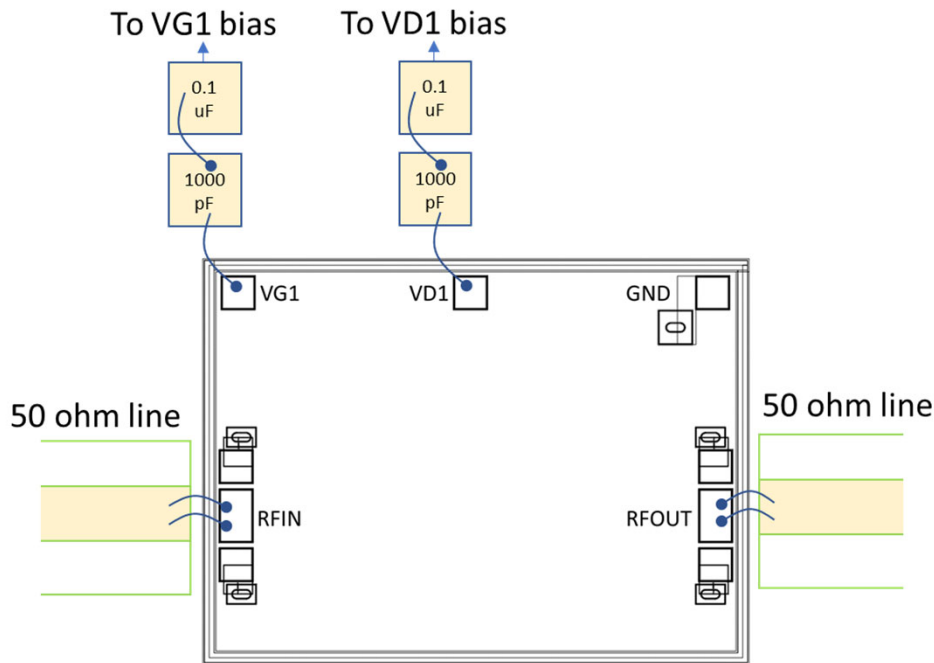


### Measurement Plots: OIP3





### 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. Maximum drain voltage: +10V
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