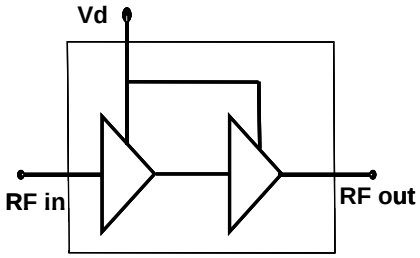
18 – 40 GHz Low Noise Amplifier Module

Features

- **Frequency Range: 18 – 40 GHz**
- **Better than 5dB Noise Figure**
- **Single Supply Operation**
- **20dB Nominal Gain**
- **10dBm Nominal Power Output**
- **Input Return Loss > 10dB**
- **Output Return Loss > 12dB**
- **Nominal Bias 12V @ 110mA**
- **0.15-um InGaAs pHEMT Technology**
- **Small form factor**

Functional Diagram



Typical Applications

- **Millimeter-wave Point-to-Point Radio**
- **LMDS**
- **SATCOM**
- **VSAT Applications**

Description

The LA184020M is a connectorised LNA module operating in the 18 – 40 GHz frequency range. The LNA exhibits 20 dB of nominal gain and has a max. noise figure of 5 dB. The typical input/output return loss of the LNA is about 10 dB. The nominal 1dB compression point is 10dBm. The module operates from a single +12 V supply.

The LNA features a small form factor of with field replaceable K-type connectors. The module can be used as drop-in if required.

Absolute Maximum Ratings (1)

Parameter	Absolute Maximum	Units
Drain bias voltage (Vd)	+15	volts
RF input power (RFin at Vd=12V)	+20	dBm
Operating temperature	-55 to +85	^{o}C
Storage Temperature	-65 to +150	^{o}C

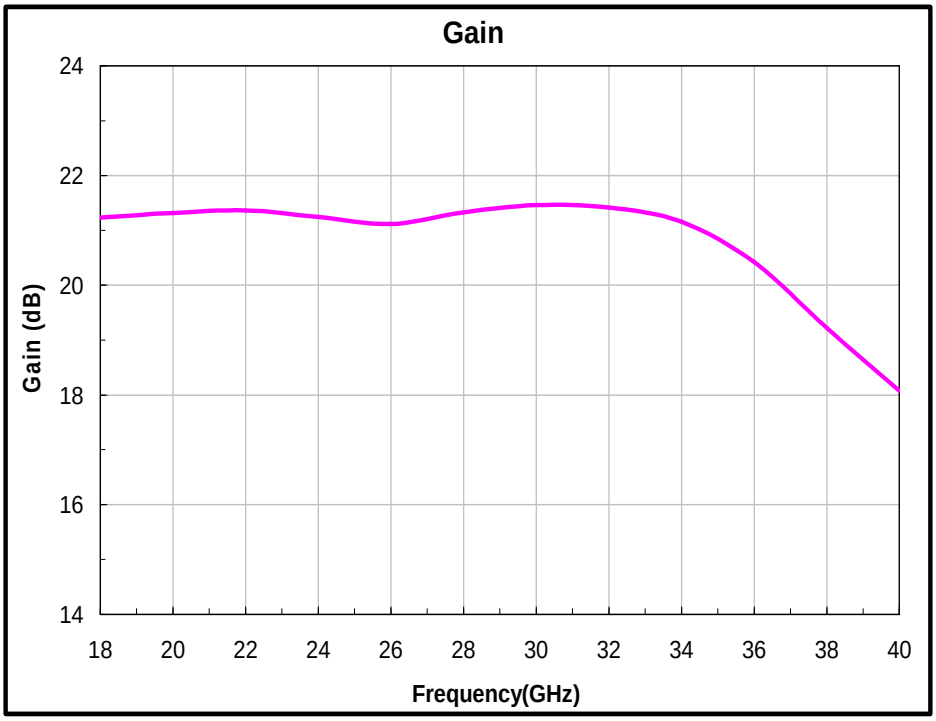
1. Operation beyond these limits may cause permanent damage to the component

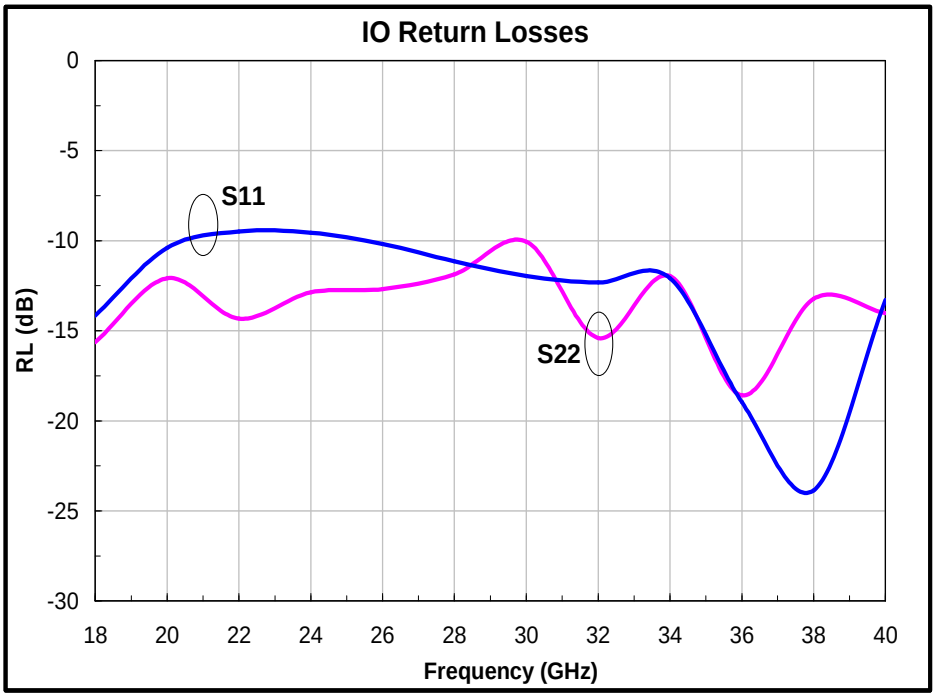
Electrical Specifications @ T_A = 25 °C, Vd = +12V, Zo =50 Ω

Parameter	Typ.	Units
Frequency Range	18 – 40	GHz
Gain	20	dB
Gain Flatness	±2	dB
Noise Figure (max.)	5	dB
Input Return Loss	10	dB
Output Return Loss	12	dB
Output Power (P1dB)	+10	dBm
Supply Current (Id)	110	mA

Test fixture data

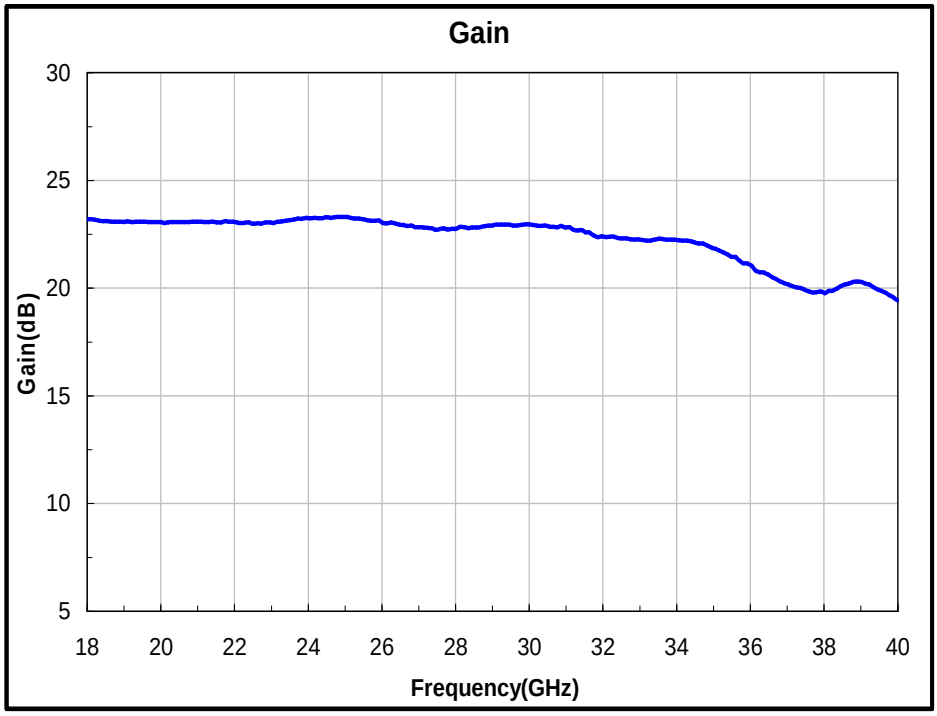
Vd =12 V, Total Current = 110 mA , T_A = 25 ^oC

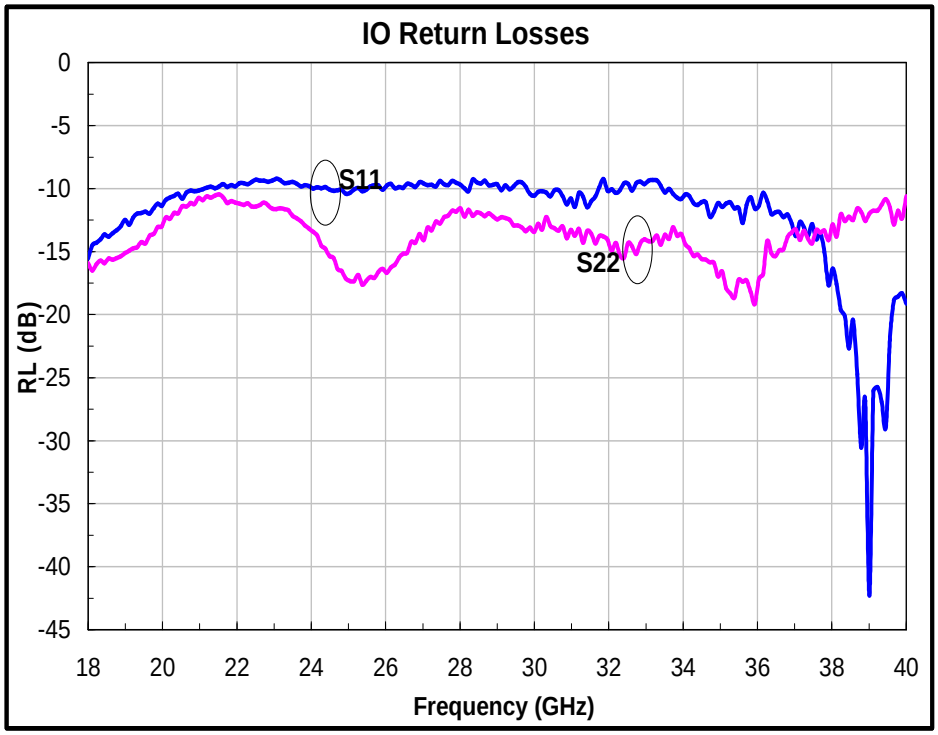




Test fixture data

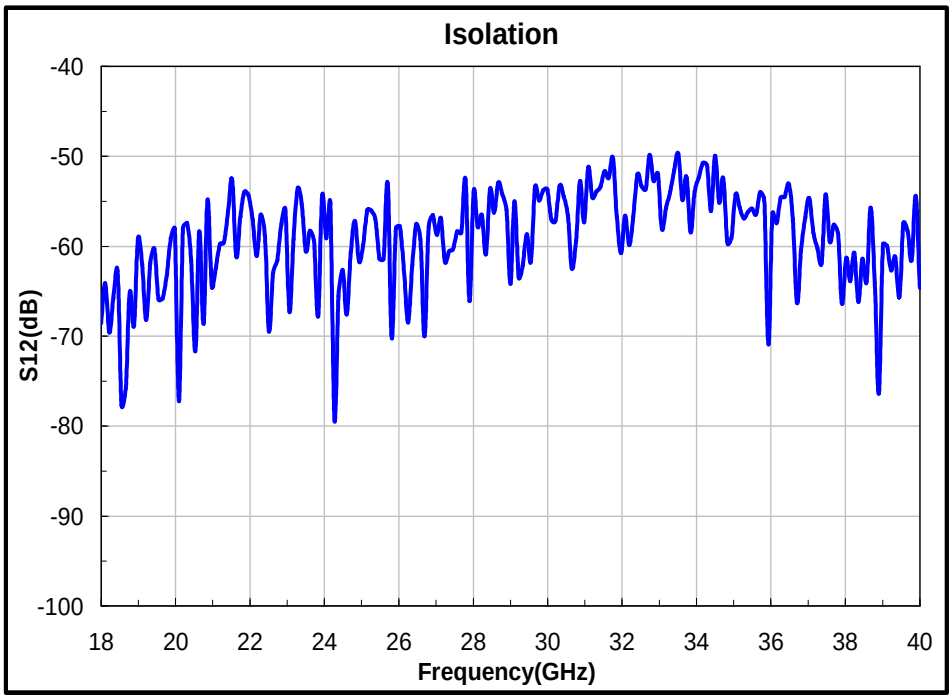
Vd =12 V, Total Current = 110 mA , T_A = -10 ^oC





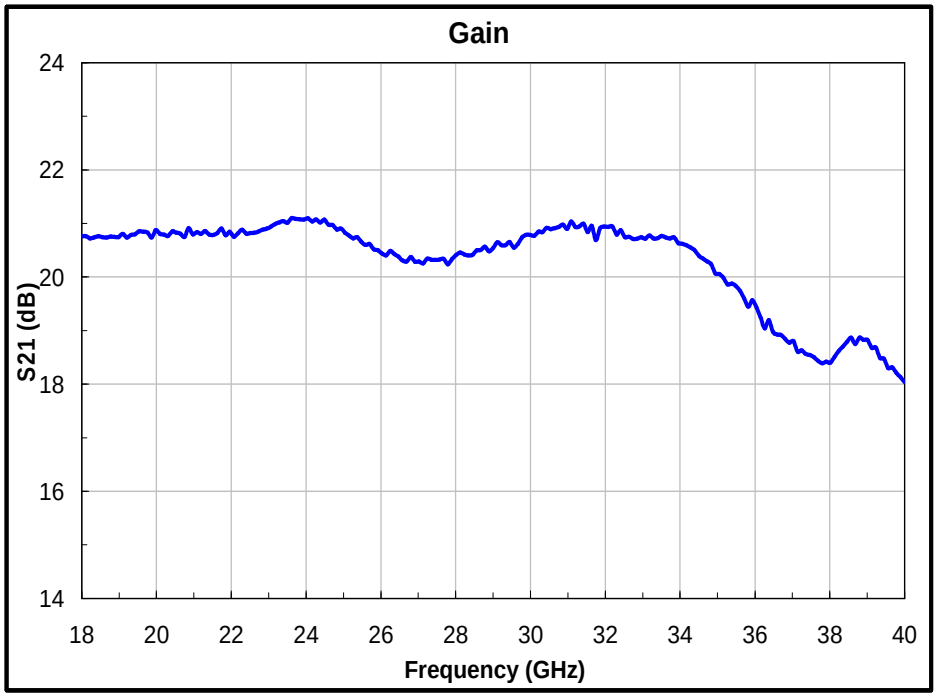
Test fixture data

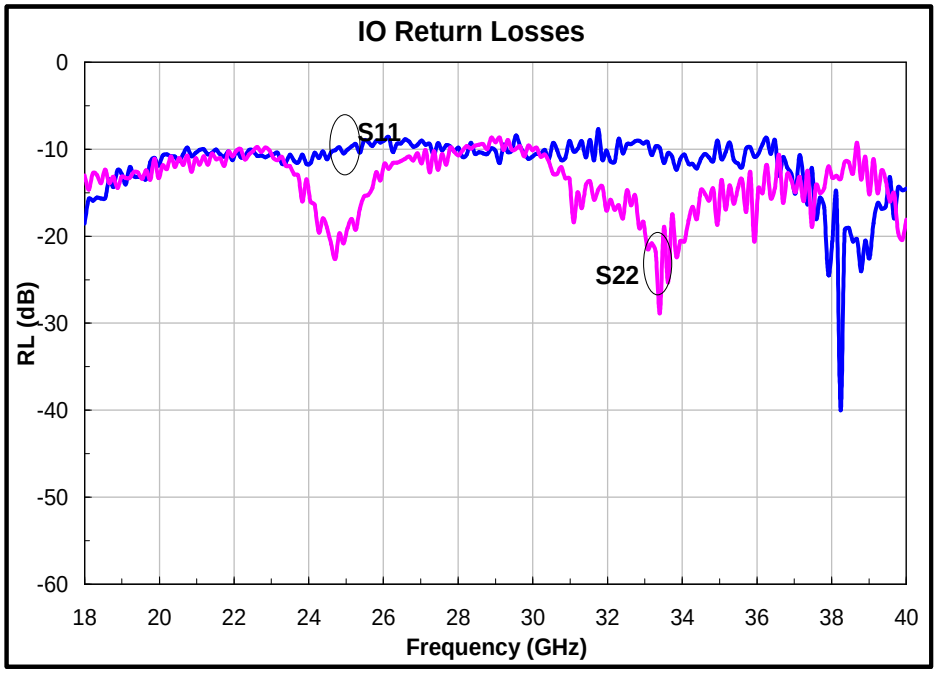
Vd =12 V, Total Current = 110 mA , T_A =- 10 ^oC



Test fixture data

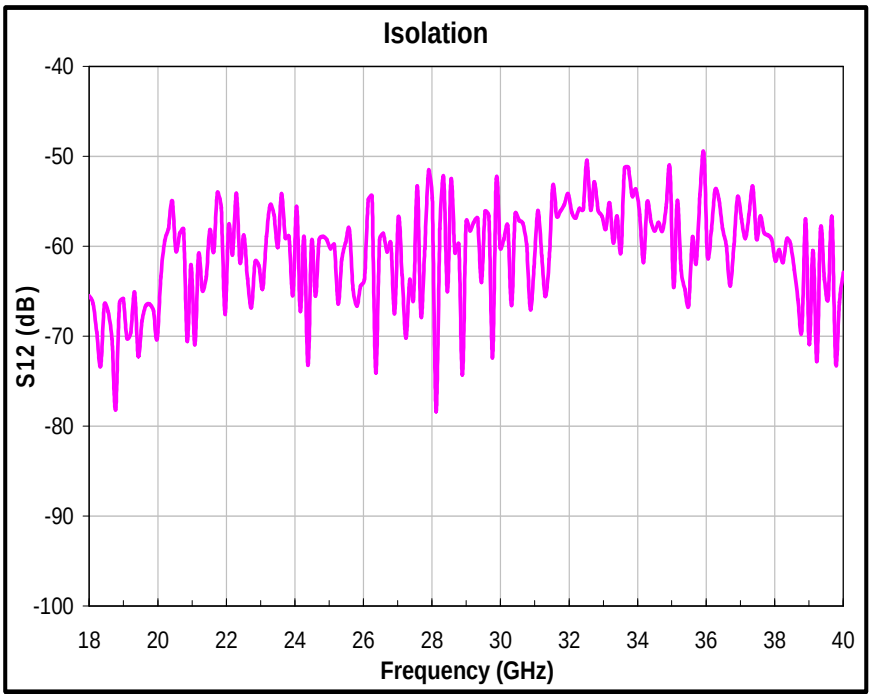
Vd =12 V, Total Current = 110 mA , T_A = 55 ^oC





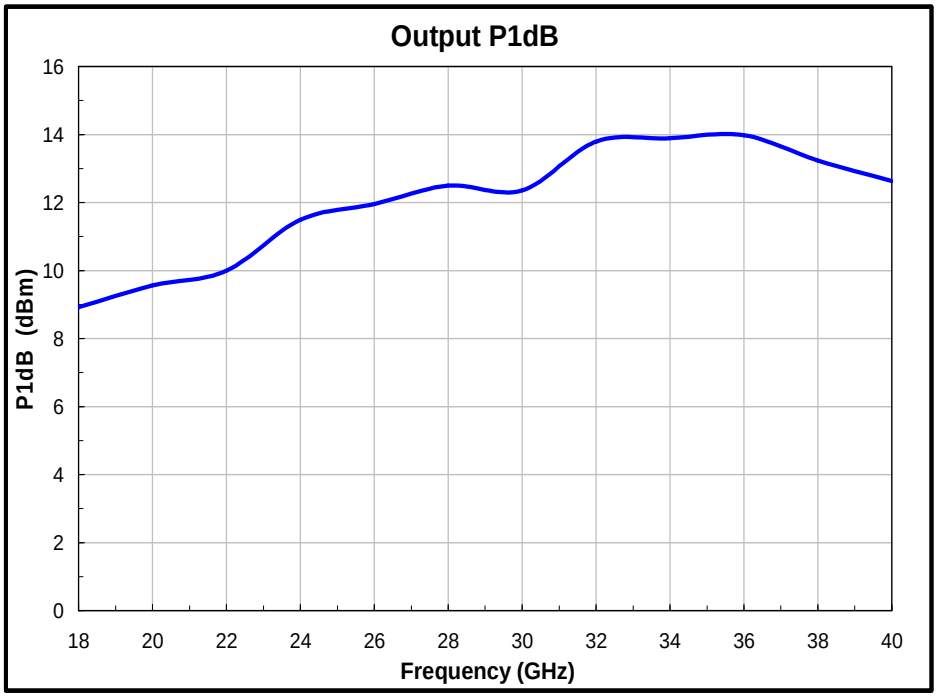
Test fixture data

Vd =12 V, Total Current = 110 mA , T_A = 55 ^oC

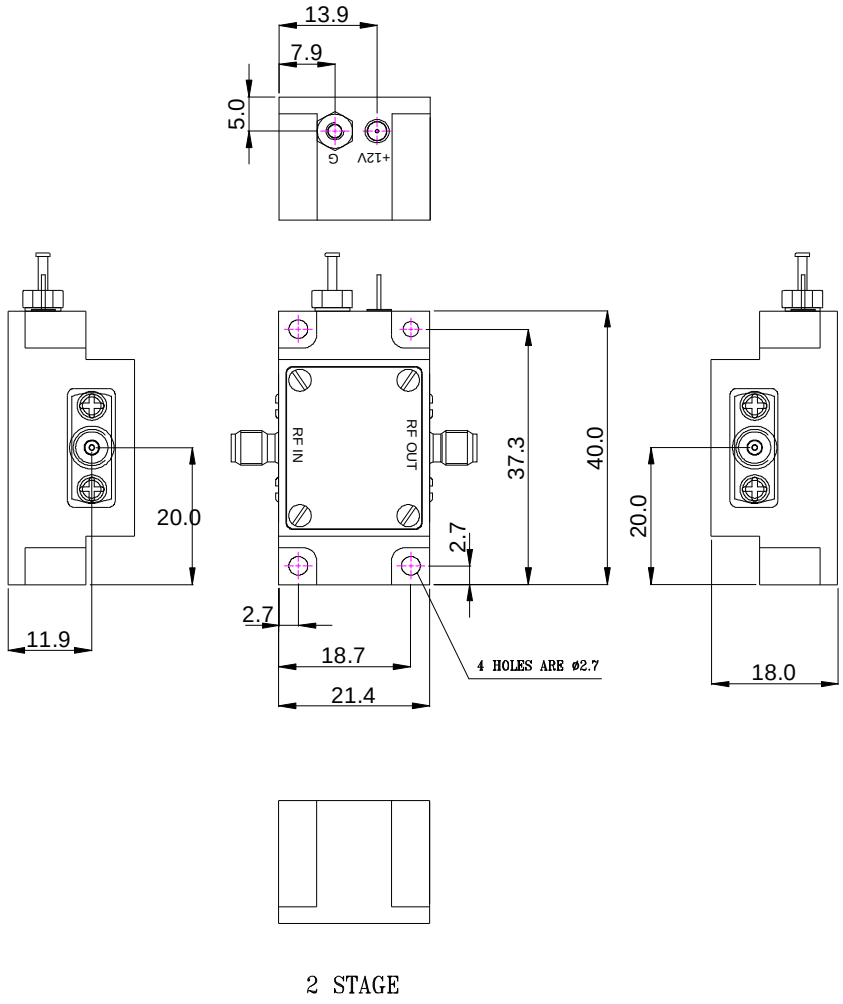


Test fixture data

Vd =12 V, Total Current = 110 mA , T_A = 25 ^oC



Mechanical Characteristics



2 STAGE

Units: Millimeters

GaAs MMIC devices are susceptible to Electrostatic discharge. Proper precautions should be observed during handling, assembly & testing

All information and Specifications are subject to change without prior notice