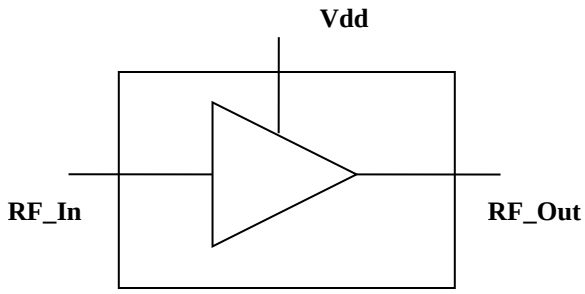
2.0 – 6.0 GHz Low Noise Amplifier Module

Features

- **Frequency Range: 2.0-6.0 GHz**
- **2dB Noise Figure**
- **Single supply operation, +5V**
- **25dB Nominal Gain**
- **20dBm Nominal P1dB**
- **Input Return Loss of 10dB**
- **Output Return Loss of 7dB**
- **Nominal Bias : 5V@ 140mA**
- **-40 to +70˚C Operating Temperature**

Functional Diagram



Typical Applications

- **Cellular system**
- **Test Instrumentation**
- **Communication receivers and transmitters**
- **Military & Space**

Description

The Aelius ASL10002M2 is a broadband Low Noise Amplifier module, with replaceable SMA connectors. It can also be used as a drop-in module. This self-biased amplifier operating in a frequency range of 2-6 GHz provides a gain of 25dB min. with a gain slope of around 1.3dB over the entire frequency band. It has a typical noise figure of 2dB & output power at 1dB gain compression is 20dBm. Aelius LA020624 requires a single +5V supply, with total current consumption of 140mA. The I/O ports of the amplifier are internally matched to 50Ohms and are internally DC blocked.

Absolute Maximum Ratings (1)

Parameter	Absolute Maximum	Units
Positive DC Supply	5.5	V
RF Input Power	12	dBm
Supply current	200	mA
Operating Temperature	-40 to +70	^{o}C
Storage Temperature	-65 to +150	^{o}C

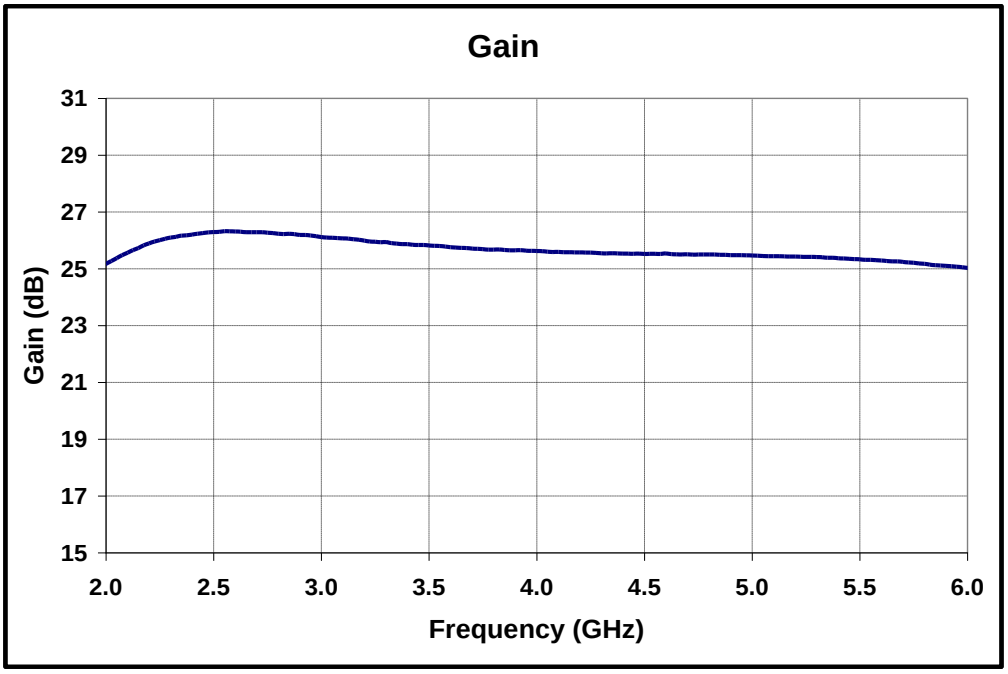
1. Operation beyond these limits may cause permanent damage to the component

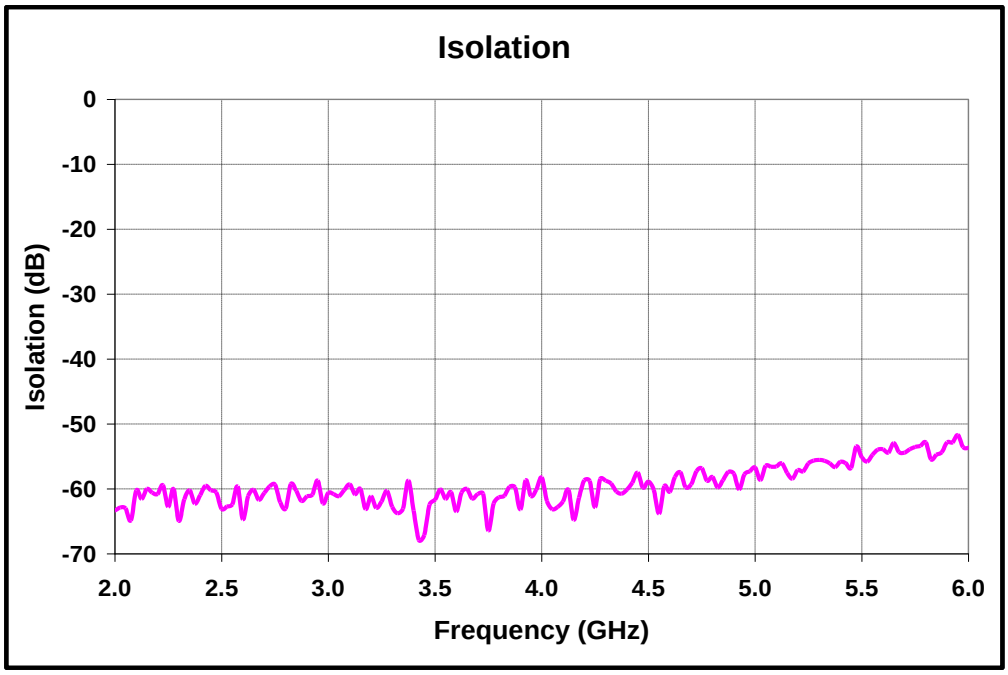
Electrical Specifications @ T_A = 25 °C, V_{dd} = +5V, Z_o =50 Ω

Parameter	Typical Value	Units
Frequency Range	2.0 – 6.0	GHz
Gain	25.7	dB
Gain Flatness	± 0.7	dB
Noise Figure (Max)	2.0	dB
Input Return Loss (Min)	10.0	dB
Output Return Loss (Min)	7.0	dB
Reverse Isolation	60	dB
Output Power (P1dB)	20	dBm
Supply Current	140	mA

Test fixture data

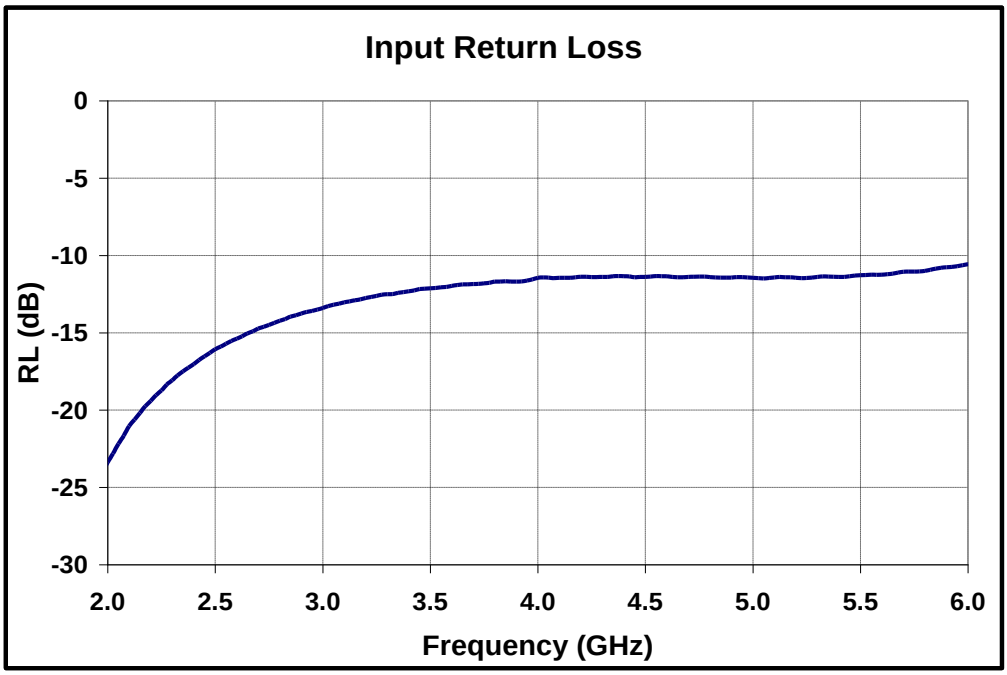
V_{dd} = 5V, Total Current = 140mA, T_A = 25 °C

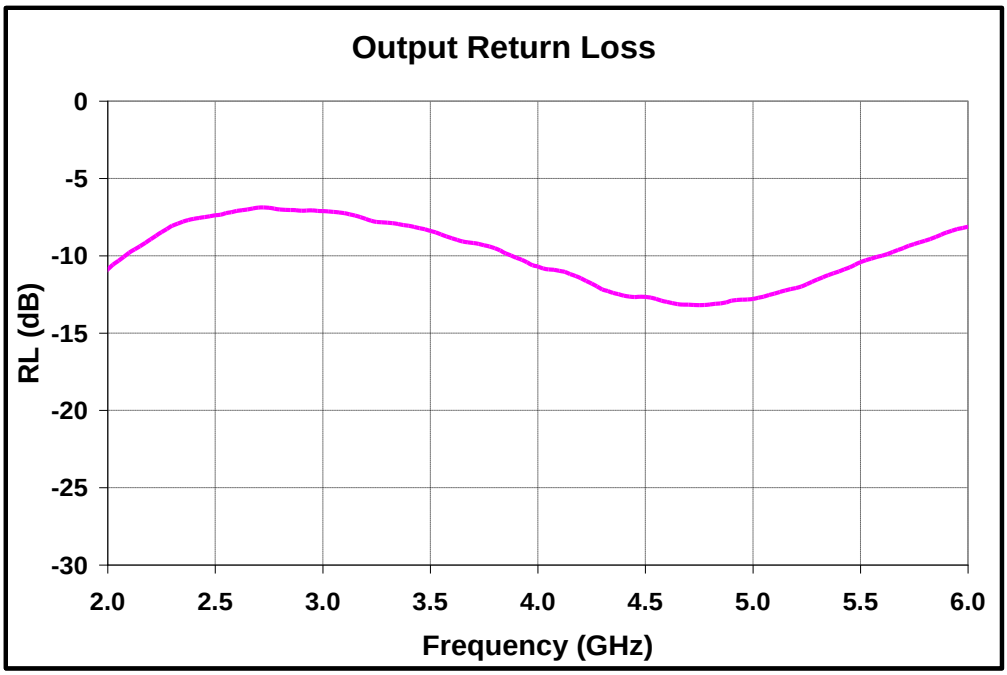




Test fixture data

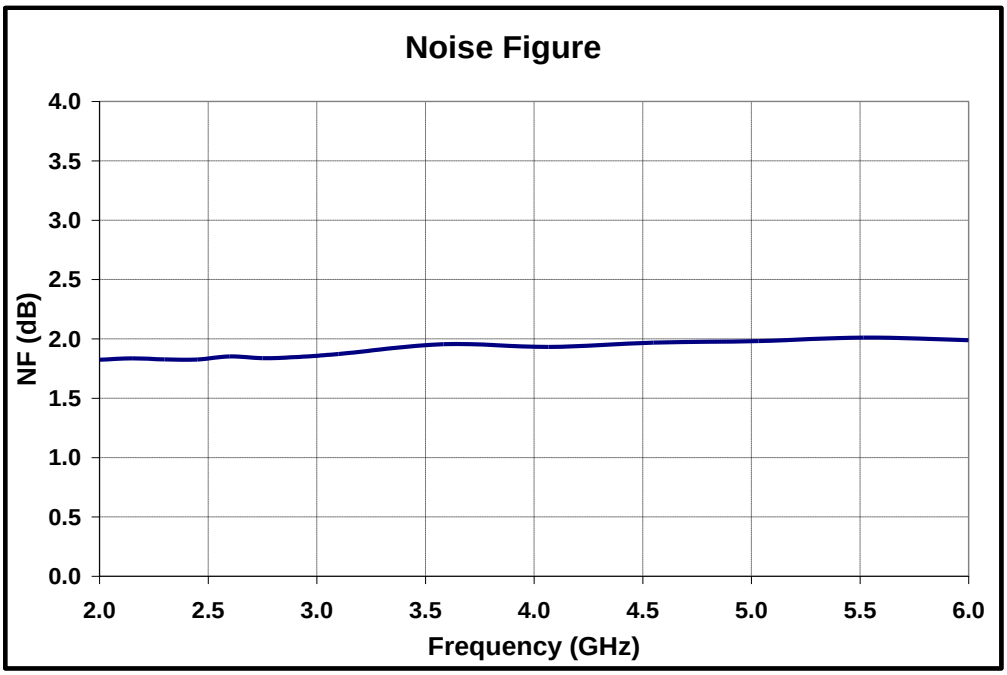
V_{dd} = 5V, Total Current = 140 mA, T_A = 25 °C

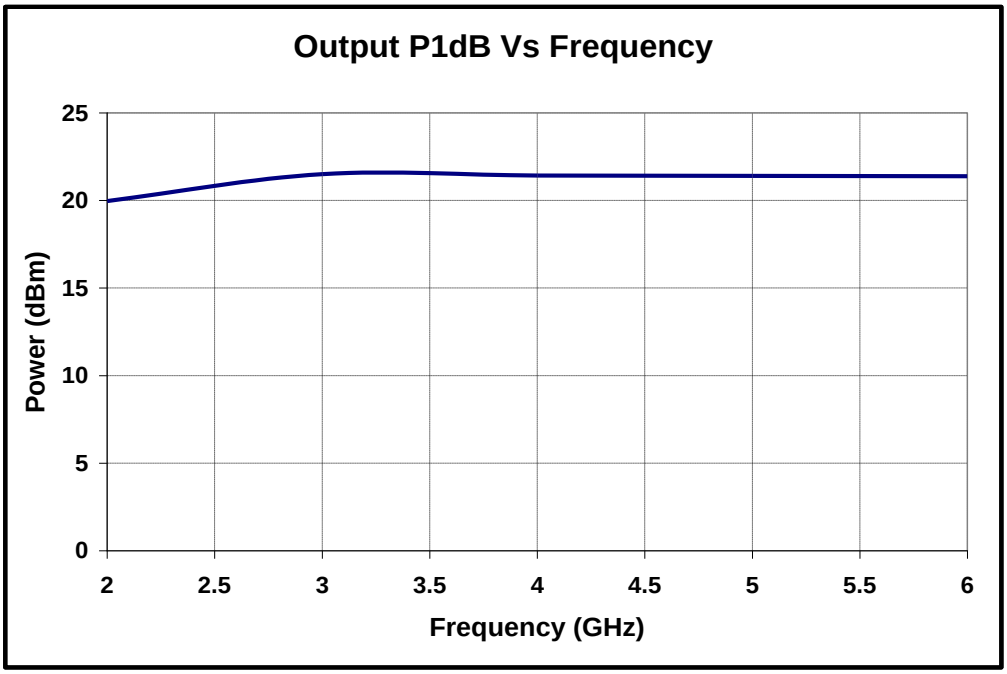




Test fixture data

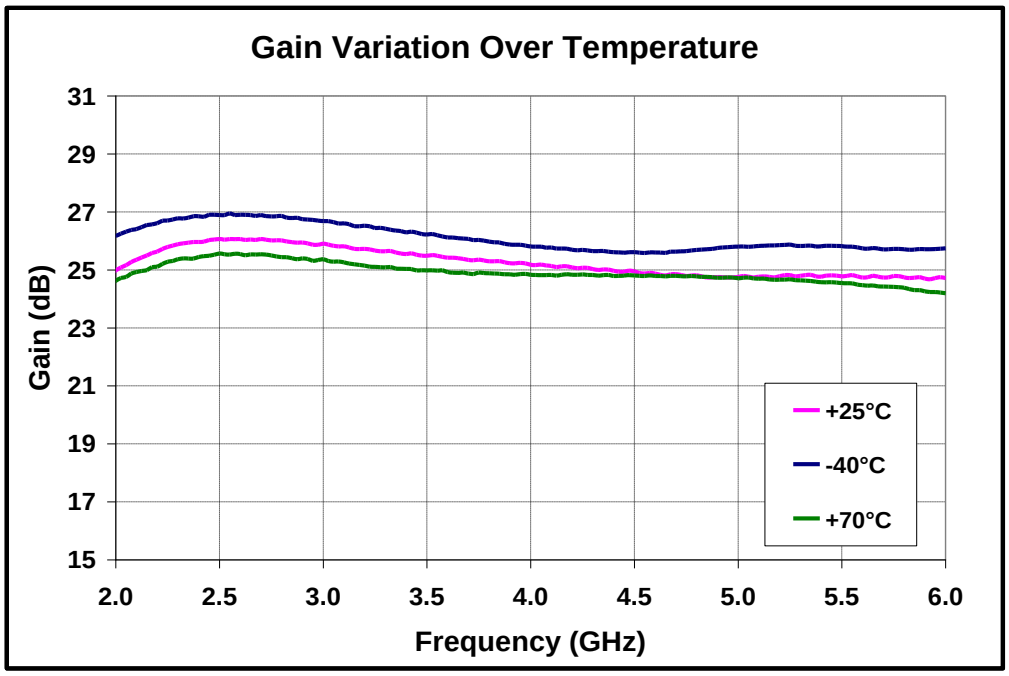
V_{dd} = 5V , Total Current = 140mA , T_A = 25 °C

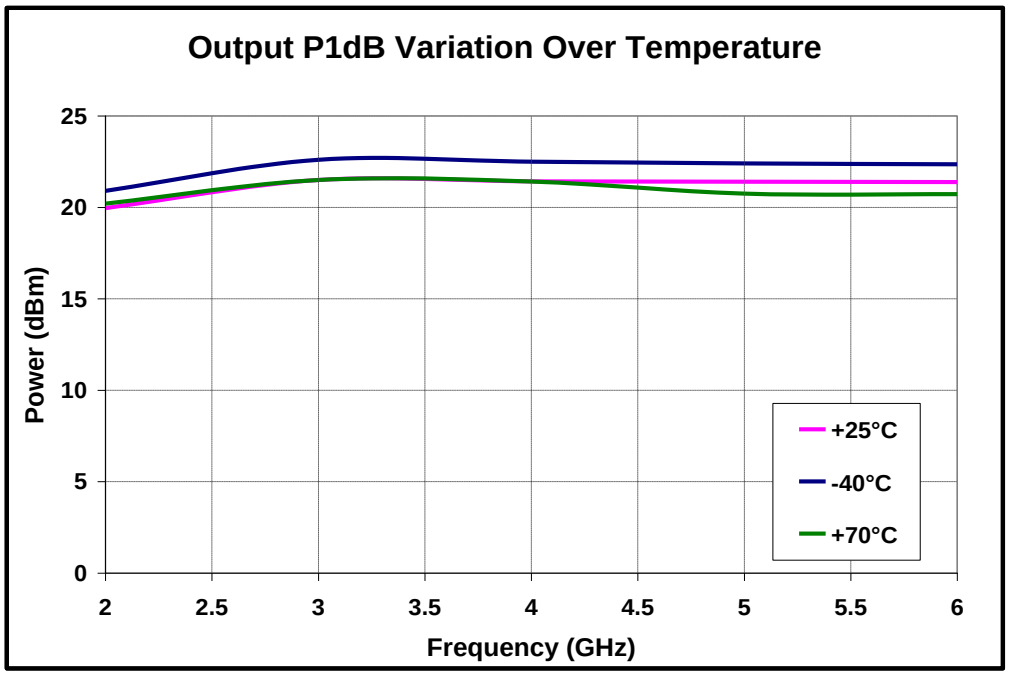




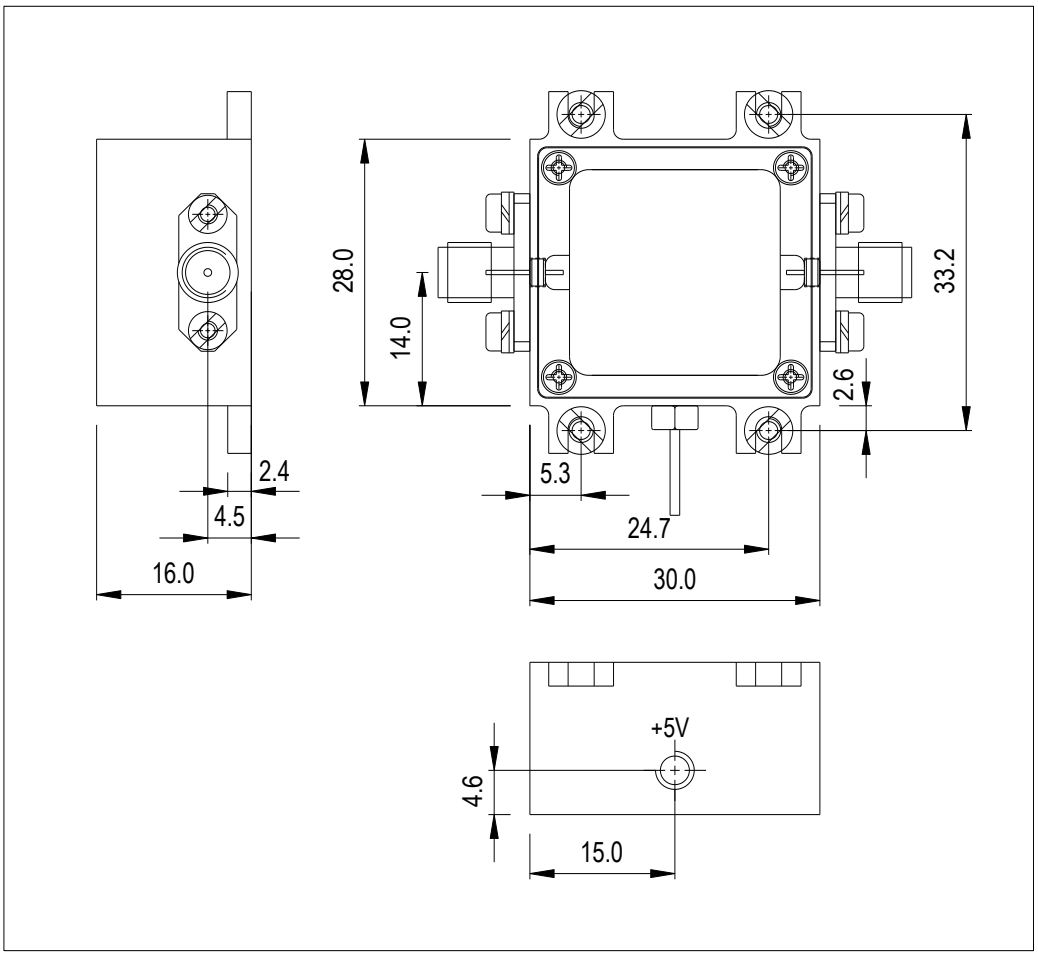
Test fixture data

V_{dd} = 5V , Total Current = 140mA





Mechanical Characteristics



Note: All dimensions are in mm.

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