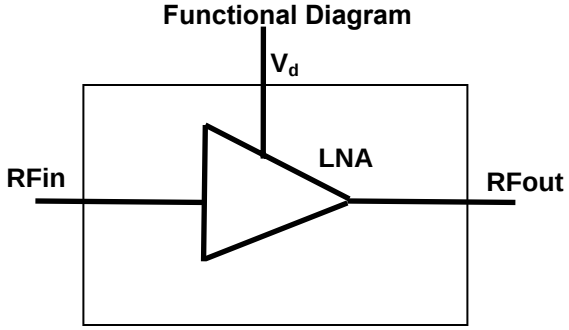
8.5 – 9.6 GHz Low Noise Amplifier Module

Features

- **Frequency Range: 8.5 – 9.6 GHz**
- **1.5 dB Noise Figure**
- **26.5 dB Gain**
- **12 dBm P1dB**
- **Single supply operation +15 V**
- **Input Return Loss of 10 dB (Typ)**
- **Output Return Loss of 15 dB (Typ)**
- **Nominal Bias 80 mA @15V**
- **0.15-um InGaAs pHEMT Technology**
- **Small form factor - 16mm x12mm x5 mm**

Functional Diagram



Typical Applications

- **RADAR**
- **Military & space**
- **VSAT**

Description

The AMT2142021M is a connectorised LNA module operating in the 8.5 - 10.5 GHz frequency range. The LNA exhibits 26.5 dB of nominal gain and has a typical noise figure of 1.5 dB. The typical input return loss of the LNA is about 10 dB and the output return loss 15 dB. The nominal 1 dB compression point is 12 dBm.

The LNA features a small form factor of 16mm x 12mm x 5mm with field replaceable SMA connectors. The module can be convineintly used as a drop-in if required. The module operates from a single +15 V supply.

Absolute Maximum Ratings (1)

Parameter	Absolute Maximum	Units
Drain bias voltage (Vd)	+16	volts
RF input power (RFin at Vd=15V)	+10	dBm
Operating temperature	-55 to +85	^{o}C
Storage Temperature	-65 to +150	^{o}C

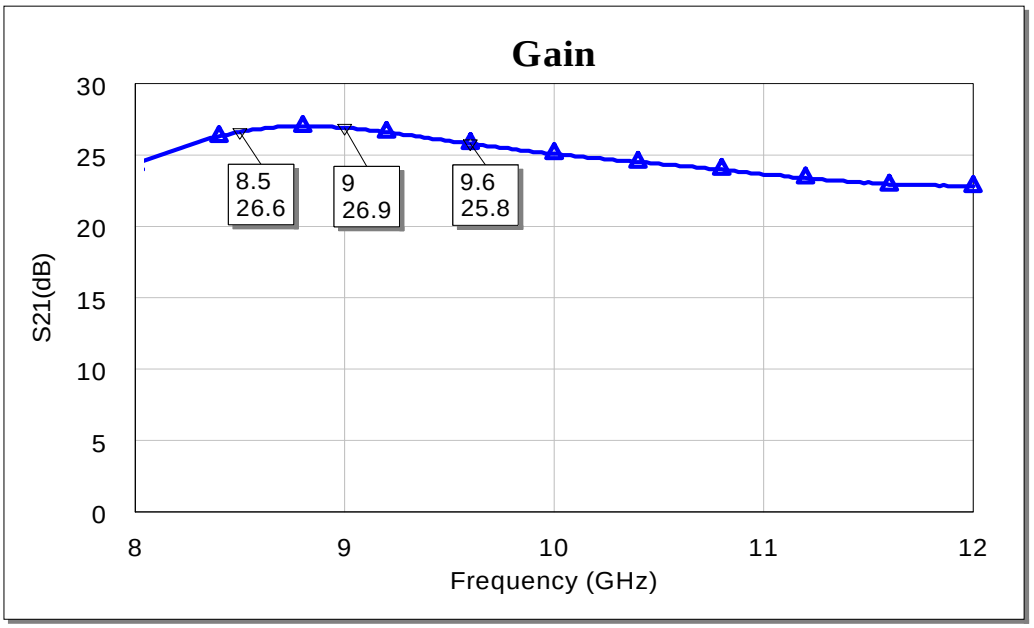
1. Operation beyond these limits may cause permanent damage to the component

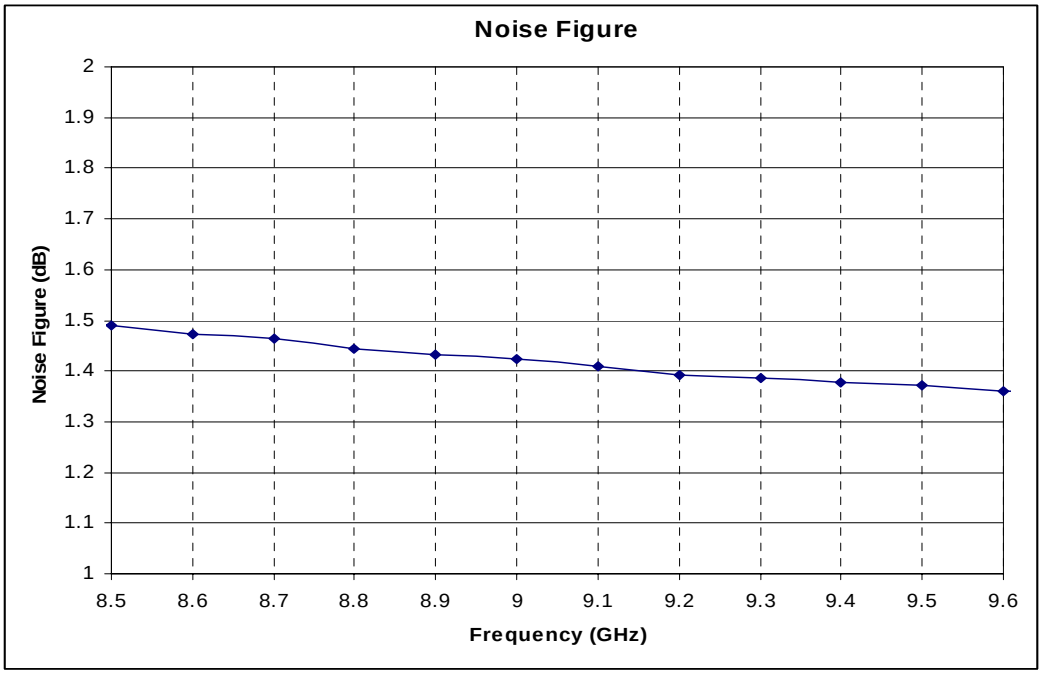
Electrical Specifications @ T_A = 25 °C, Vd = +15V, Zo =50 Ω

Parameter	Min.	Typ.	Max.	Units
Frequency Range	8.5	-	9.6	GHz
Gain	25	26.5	27	dB
Gain Flatness	-	±0.7	±1.0	dB
Noise Figure (max.)	-	1.5	-	dB
Input Return Loss	9	10	-	dB
Output Return Loss	12	15	-	dB
Output Power (P1dB)	10	12		dBm
Supply Current (Id)	70	80	100	mA

Test fixture data

Vd =15 V, Current = 80 mA , T_A = 25 °C





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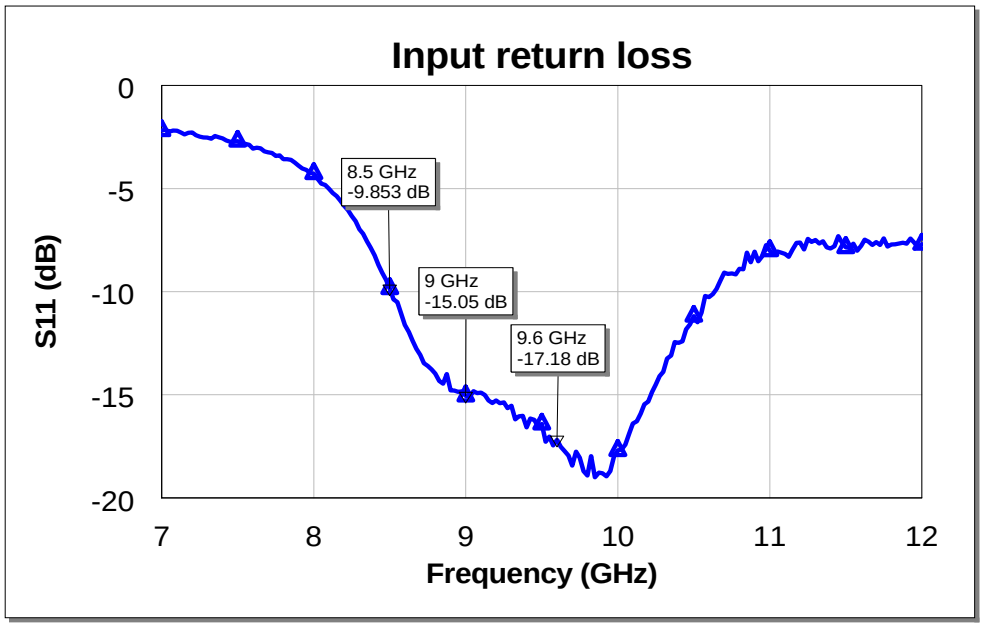

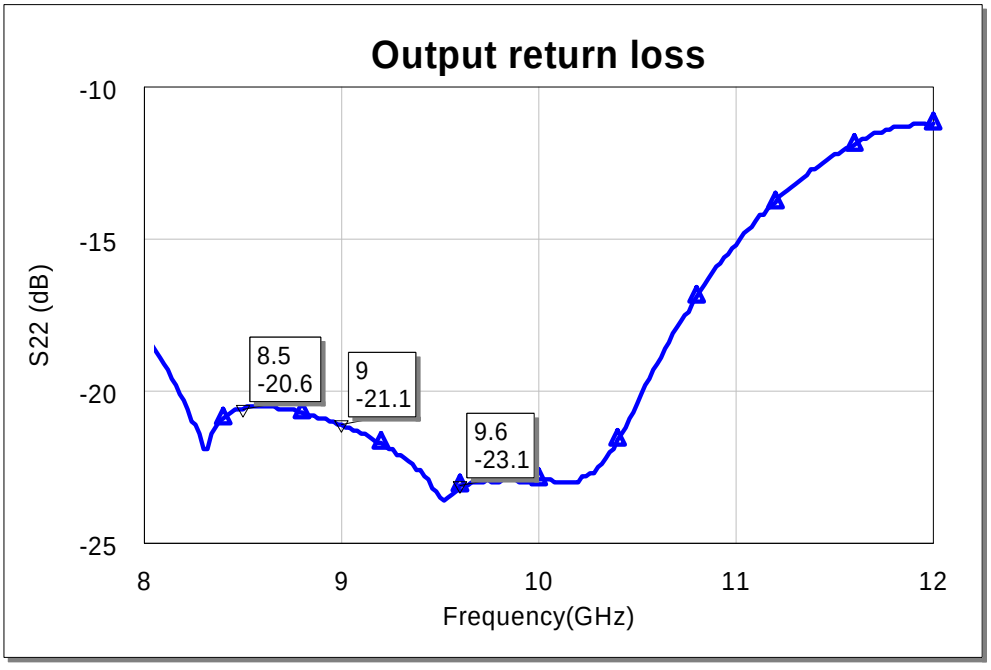

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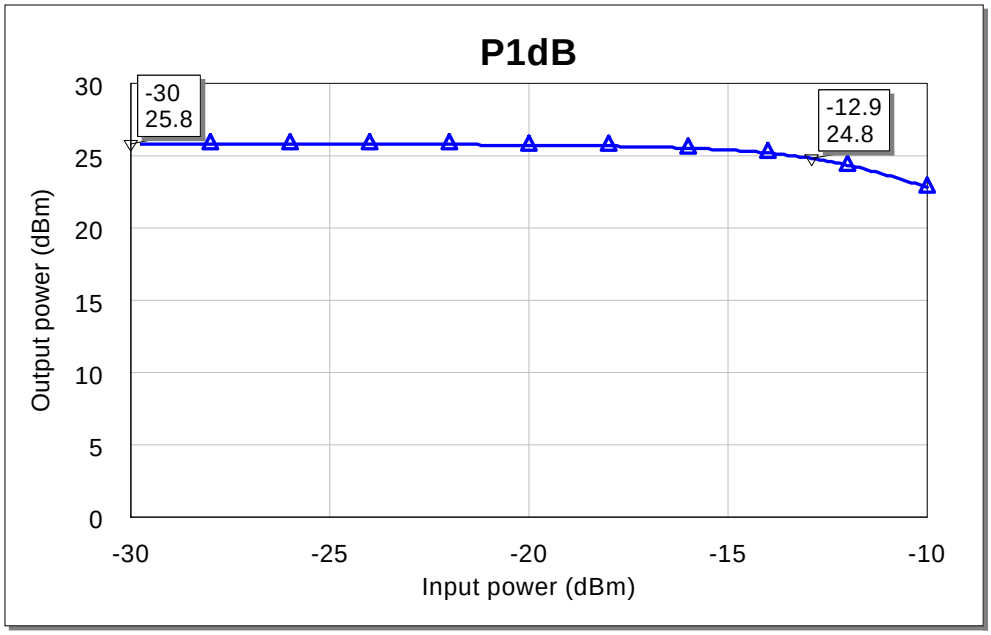
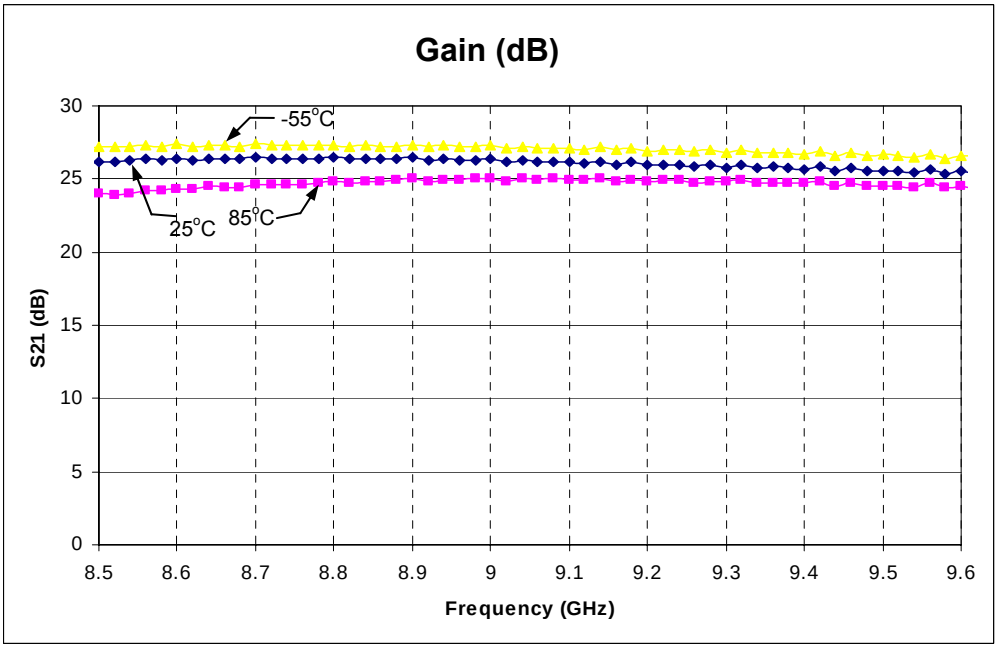
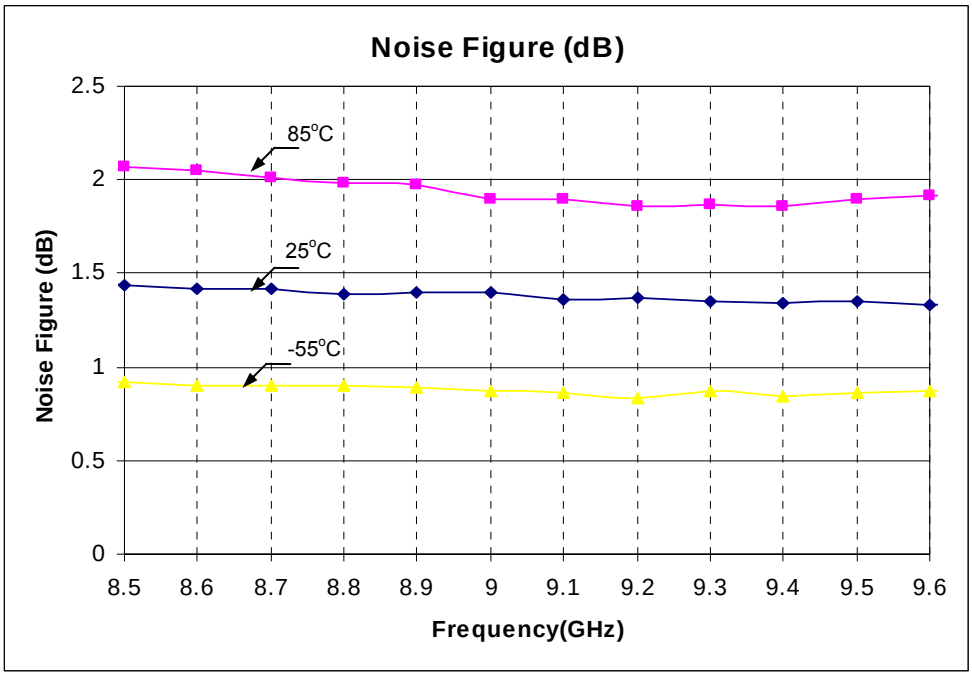


RF Performance over Temperature

Vd =15 V, Current = 80 mA @25°C





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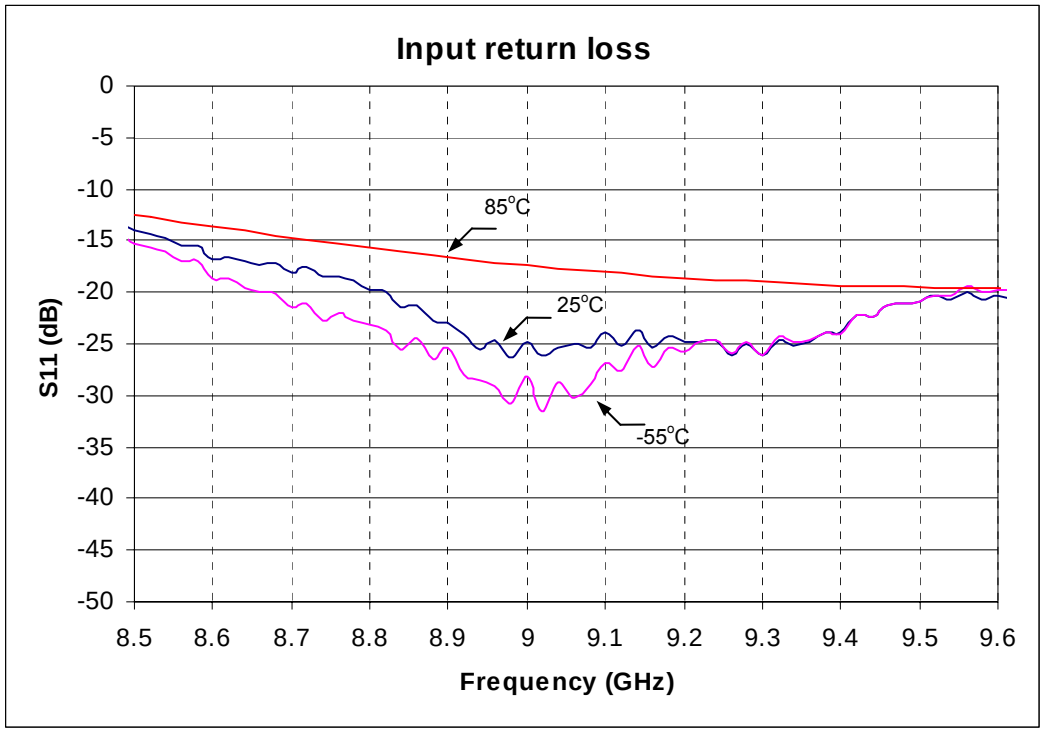
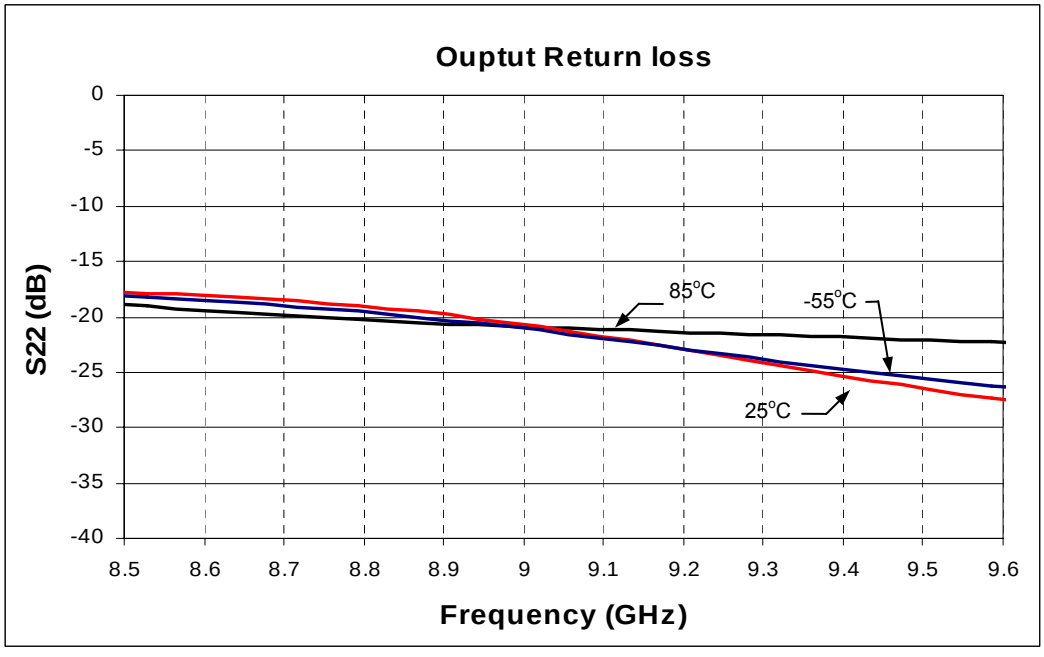
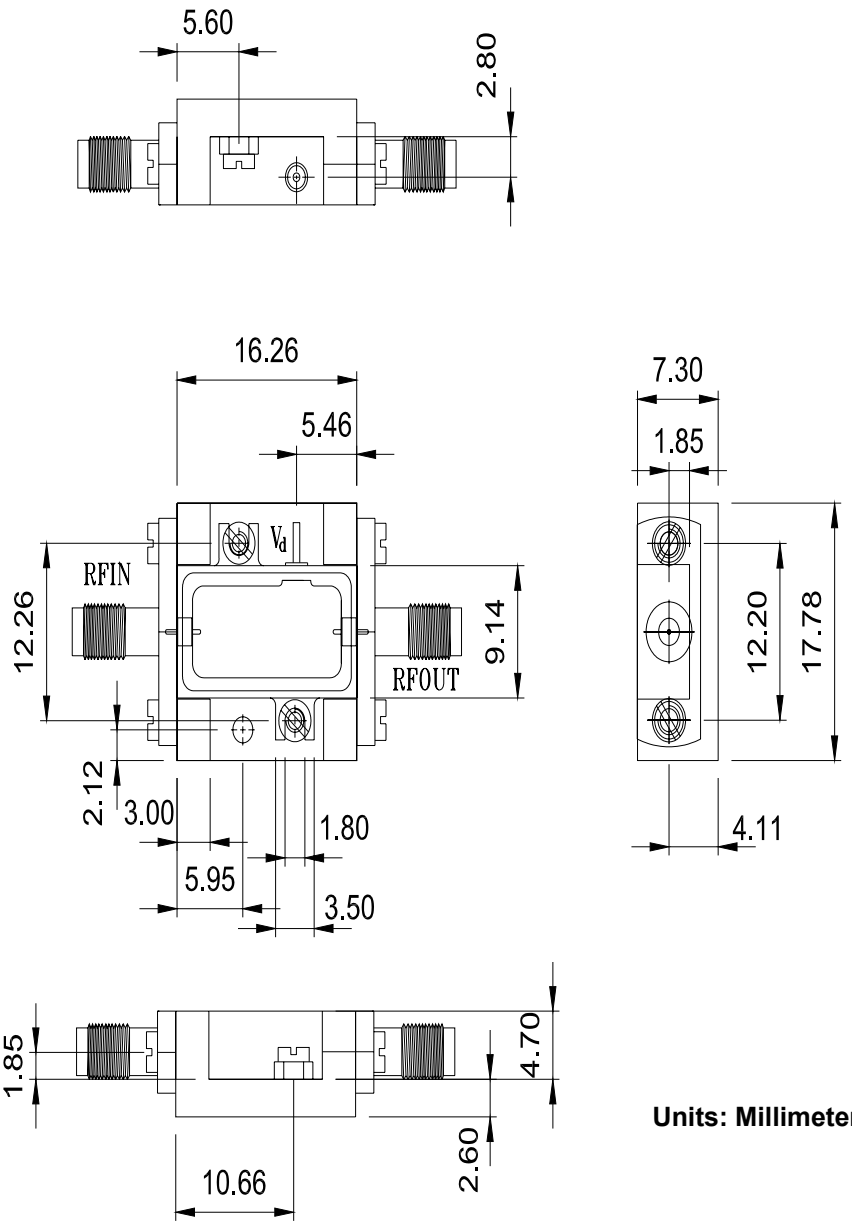




Mechanical Characteristics



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