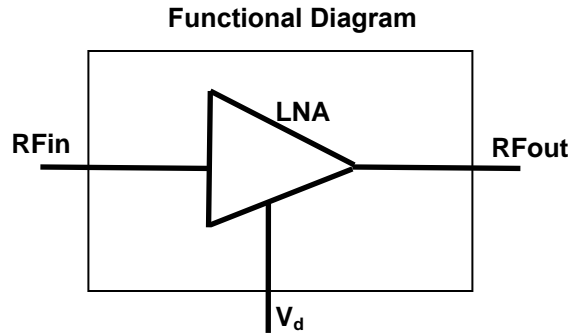


8.5 – 10.5 GHz Low Noise Amplifier Module

Features

- ◆ Frequency Range: 8.5 – 10.5 GHz
- ◆ 1.5 dB Noise Figure
- ◆ 26.5 dB Gain
- ◆ 14 dBm P1dB
- ◆ Single supply operation +15 V
- ◆ Input Return Loss of 10 dB (Typ)
- ◆ Output Return Loss of 15 dB (Typ)
- ◆ Nominal Bias 15V@ 80 mA
- ◆ 0.15-um InGaAs pHEMT Technology
- ◆ Small form factor



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 mid-band noise figure of 1.3 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 14 dBm.

The LNA features field replaceable SMA connectors and can be used as a drop-in if required. The module operates from a single +15 V supply.

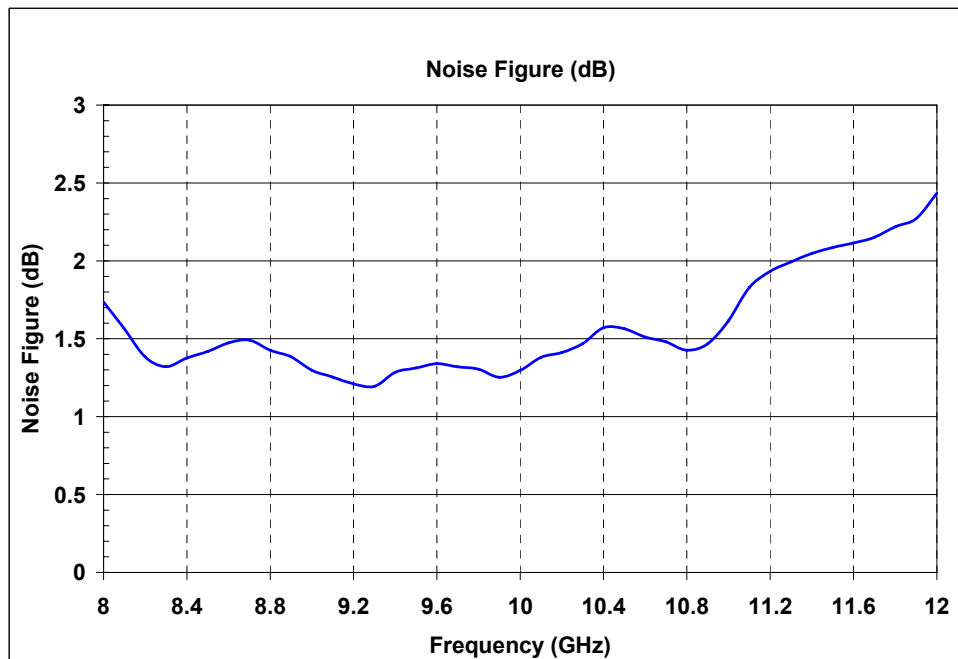
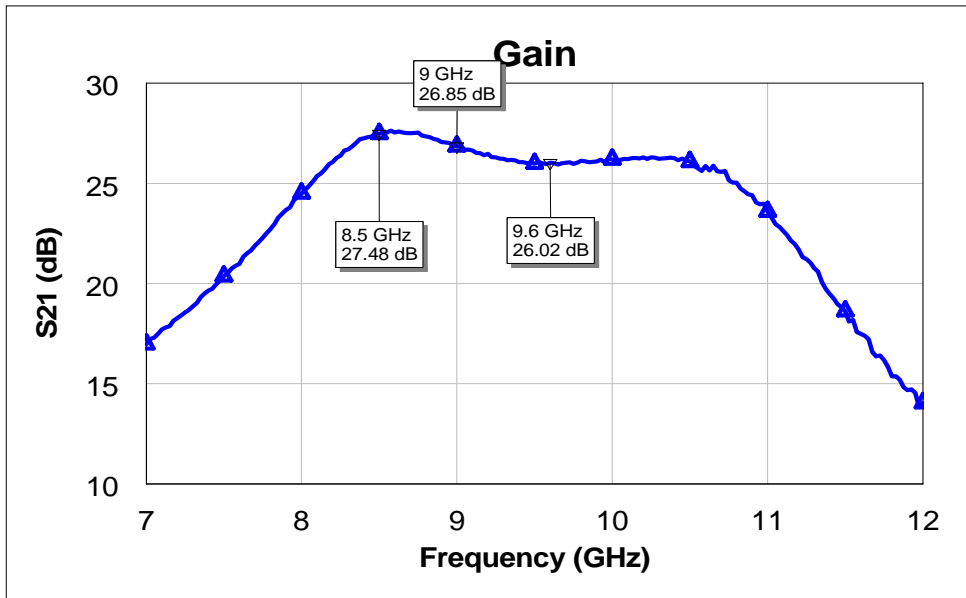
Absolute Maximum Ratings ⁽¹⁾

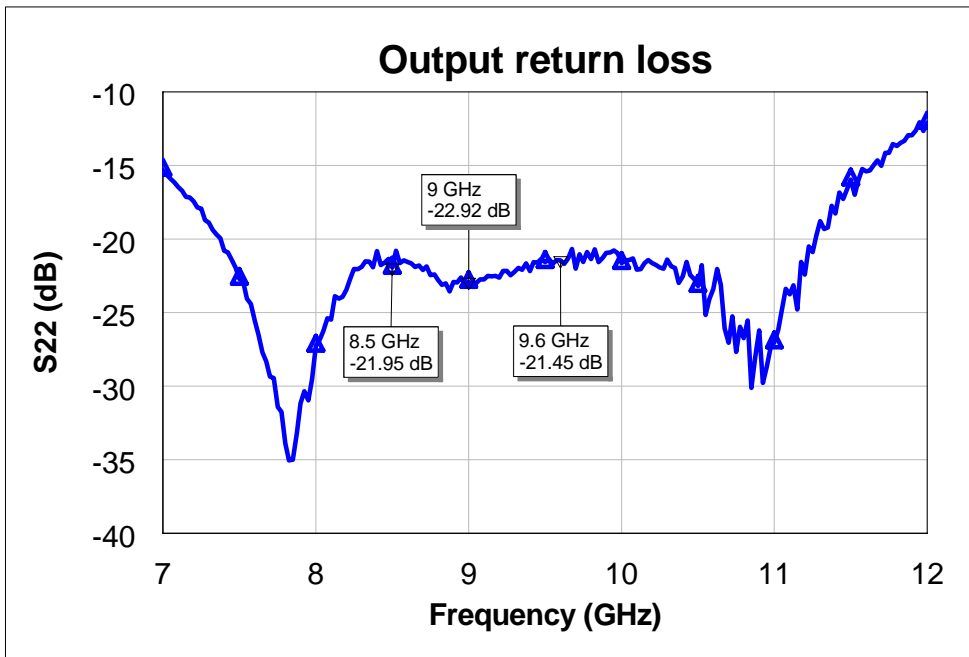
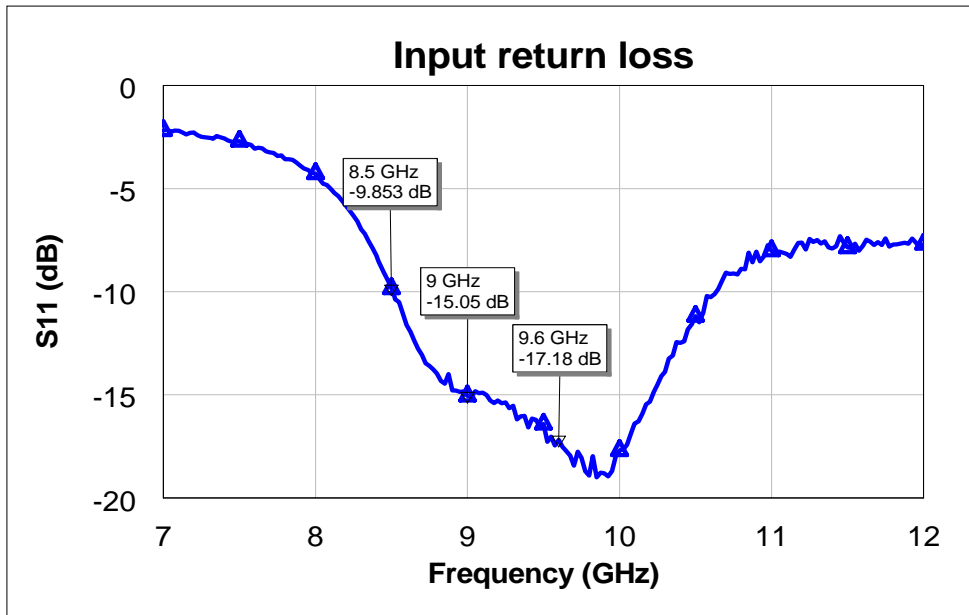
Parameter	Absolute Maximum	Units
Drain bias voltage (Vd)	+16	volts
RF input power (RFin at Vd=15V)	+10	dBm
Operating temperature	-55 to +85	°C
Storage Temperature	-65 to +150	°C

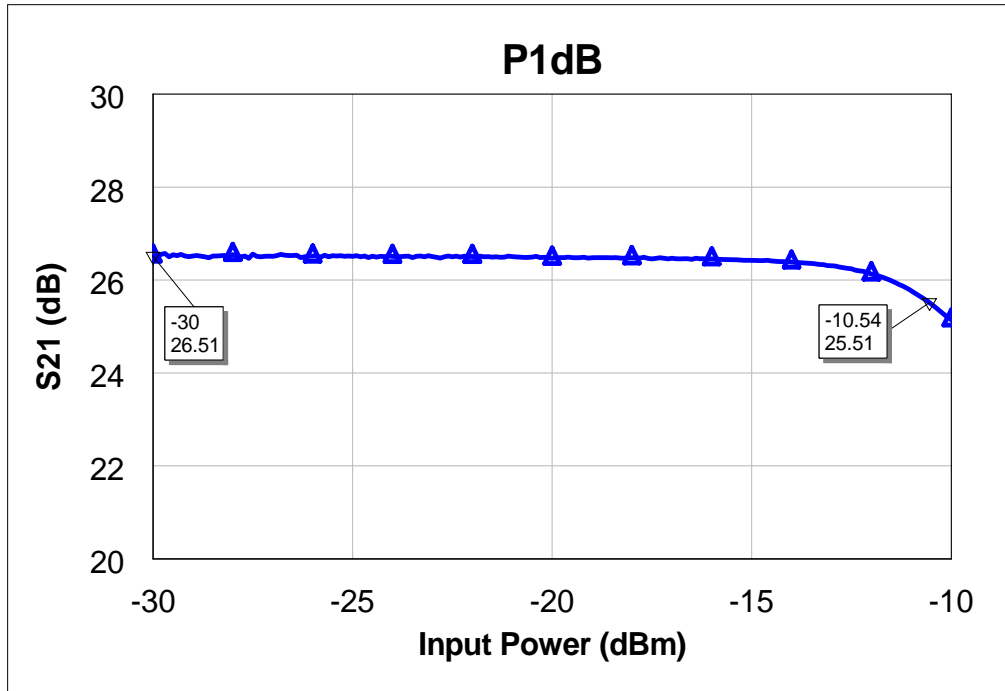
1. Operation beyond these limits may cause permanent damage to the component

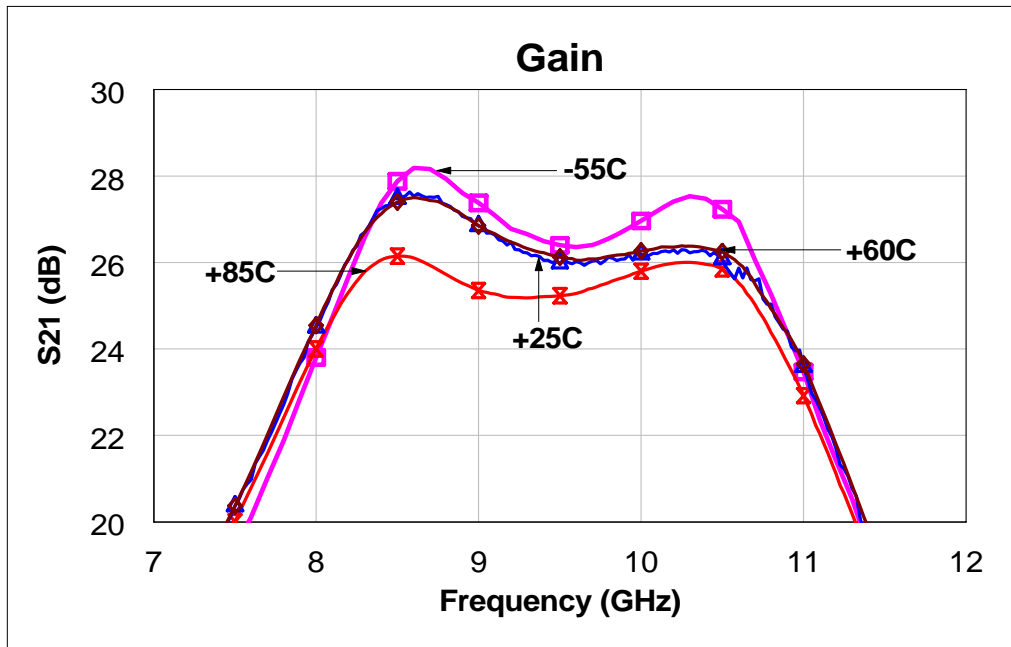
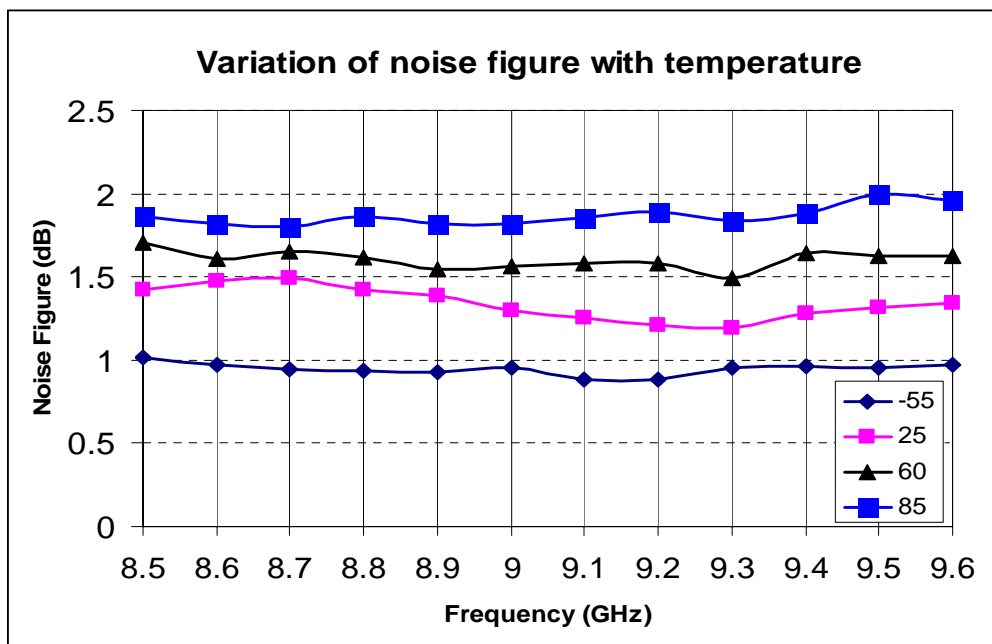
Electrical Specifications @ $T_A = 25\text{ }^\circ\text{C}$, $V_d = +15\text{V}$, $Z_o = 50\text{ }\Omega$

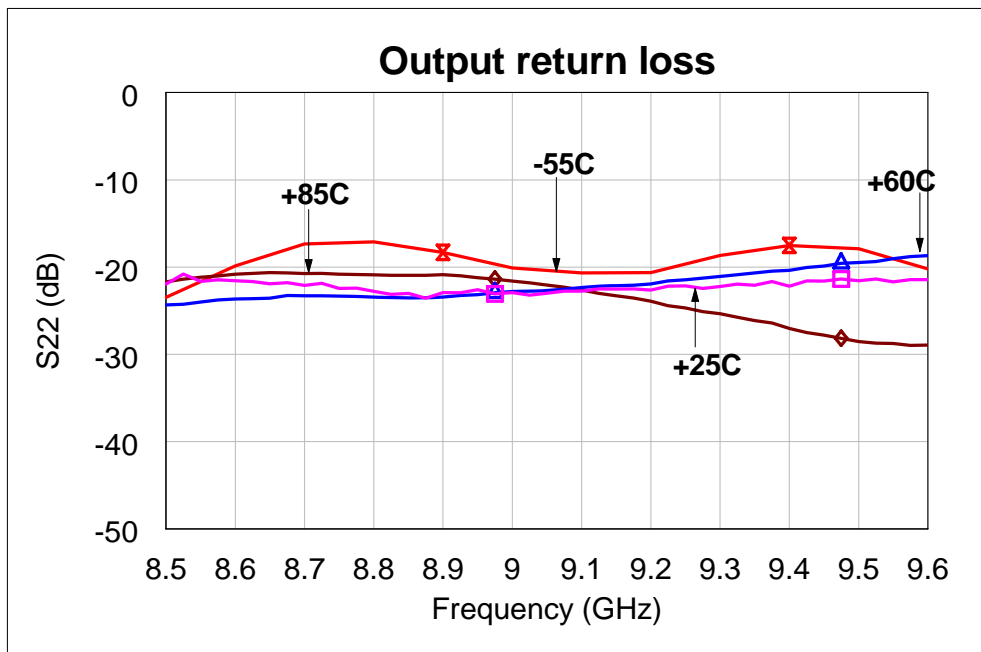
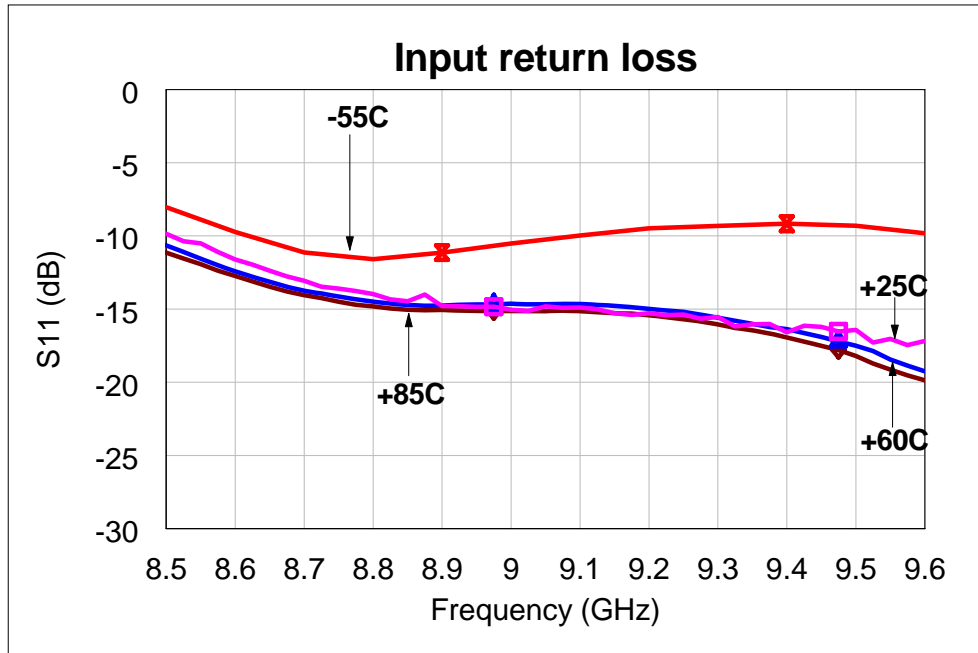
Parameter	Typ.	Units
Frequency Range	8.5 -10.5	GHz
Gain	26.5	dB
Gain Flatness	± 0.8	dB
Noise Figure (max.)	1.6	dB
Input Return Loss	10	dB
Output Return Loss	15	dB
Output Power (P1dB)	+14	dBm
Supply Current (I _d)	80	mA

Test fixture data
V_d = 15 V, Total Current = 80 mA, T_A = 25 °C


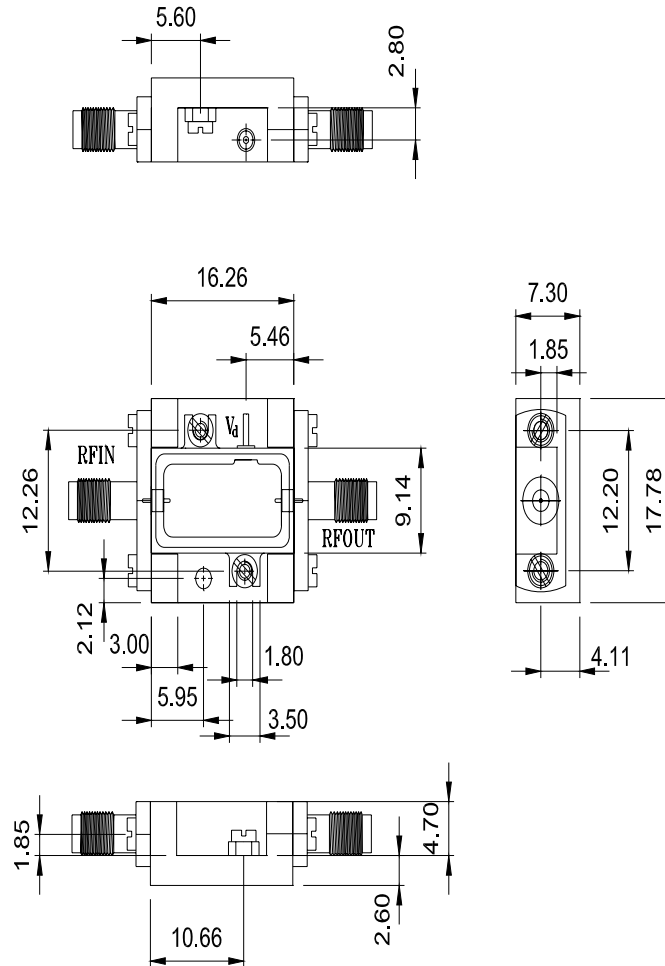
Test fixture data $V_d = 15\text{ V}$, Total Current = 80 mA, $T_A = 25\text{ }^\circ\text{C}$ 

Test fixture data $V_d = 15\text{ V}$, Total Current = 80 mA, $T_A = 25\text{ }^\circ\text{C}$ **Gain Compression @ 9.1 GHz**

Test fixture data
 $V_d = 15\text{ V}$, Total Current = 80 mA, $T_A = 25\text{ }^\circ\text{C}$
Gain Variation with Temperature

Noise Figure Variation with Temperature


Test fixture data
 $V_d = 15\text{ V}$, Total Current = 80 mA, $T_A = 25\text{ }^\circ\text{C}$
Return loss Variation with Temperature


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