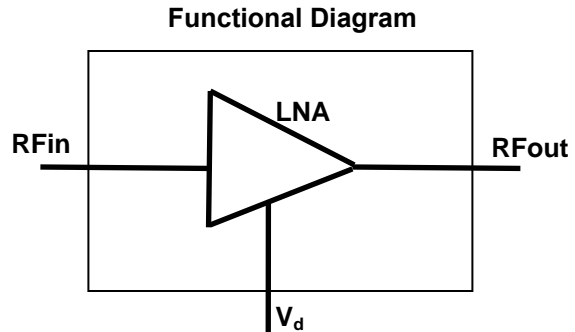


## 8.5 – 10.5 GHz Low Noise Amplifier Module

### 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.

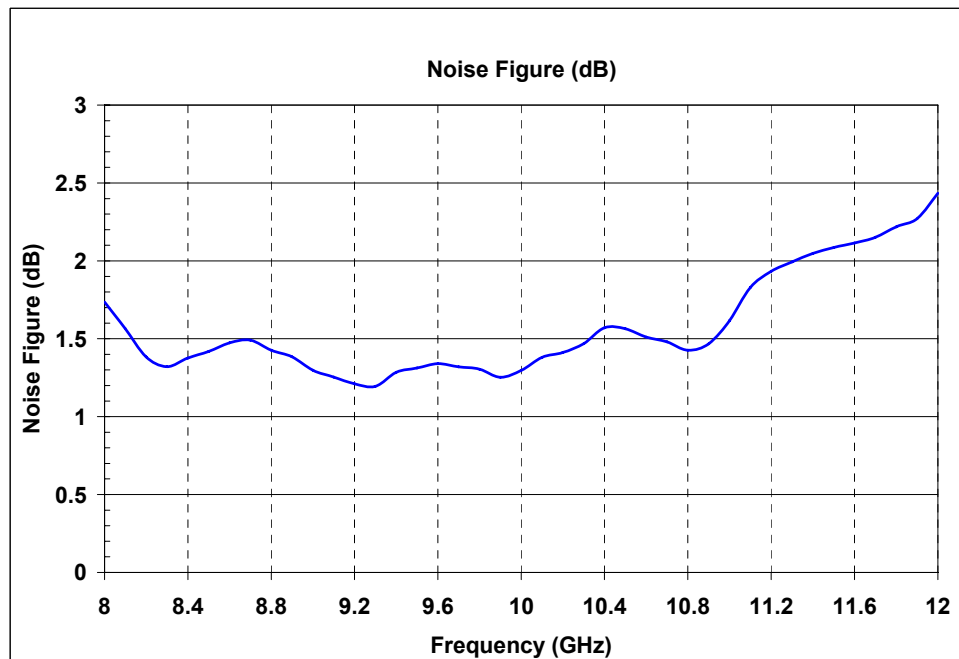
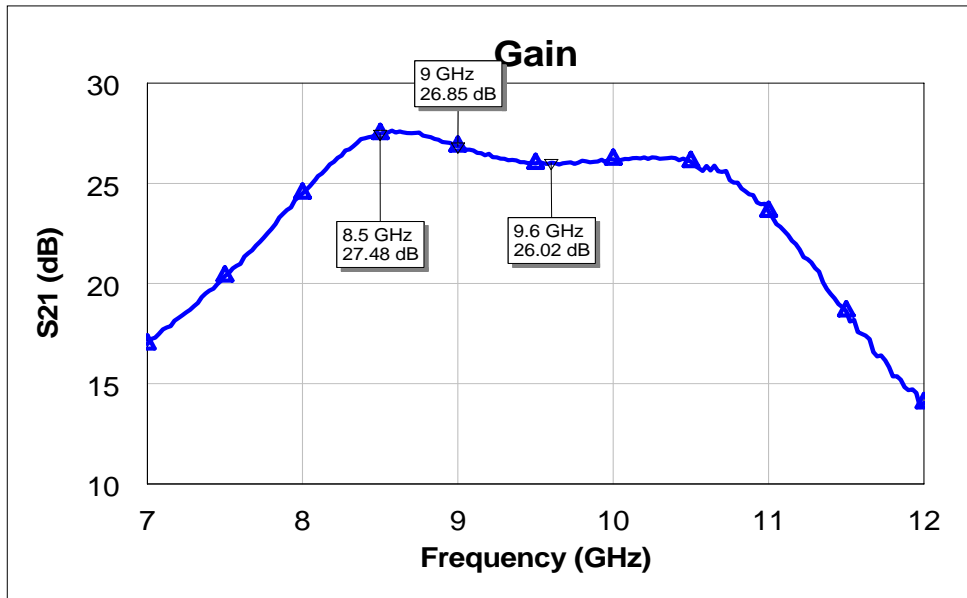
### Absolute Maximum Ratings <sup>(1)</sup>

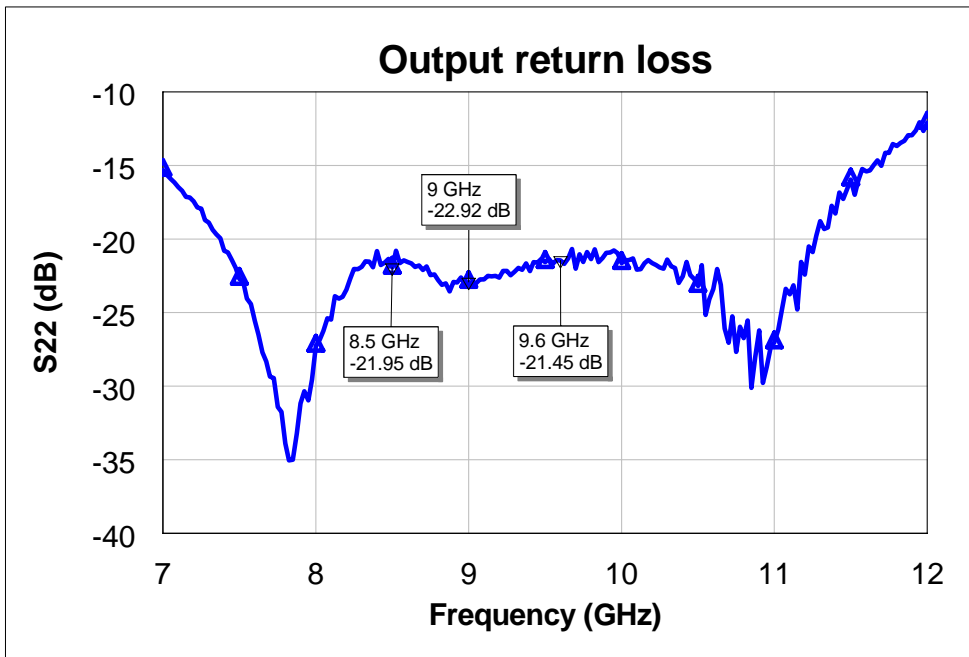
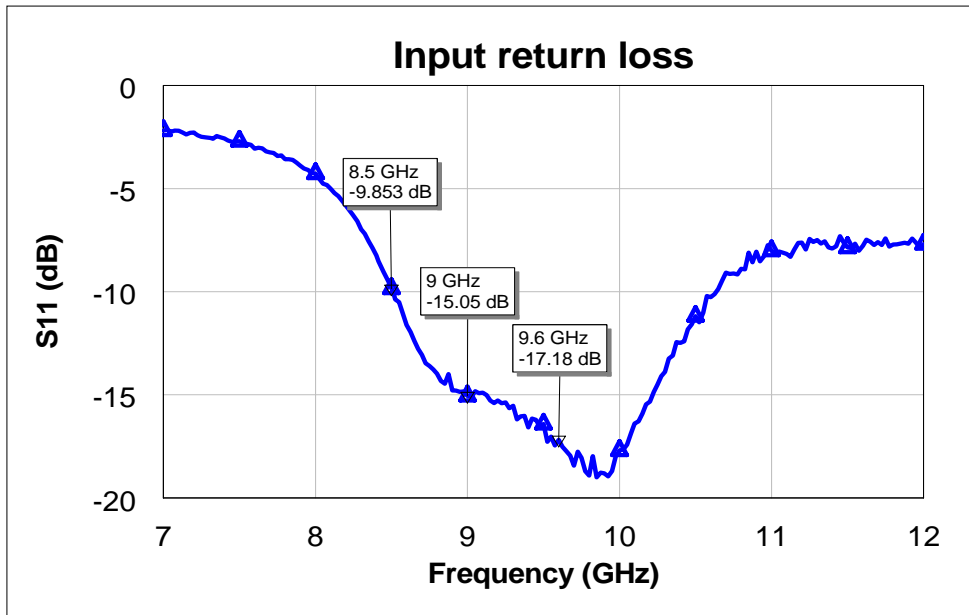
Parameter	Absolute Maximum	Units
Drain bias voltage (V <sub>d</sub> )	+16	volts
RF input power (RFin at V <sub>d</sub> =15V)	+10	dBm
Operating temperature	-55 to +85	°C
Storage Temperature	-65 to +150	°C

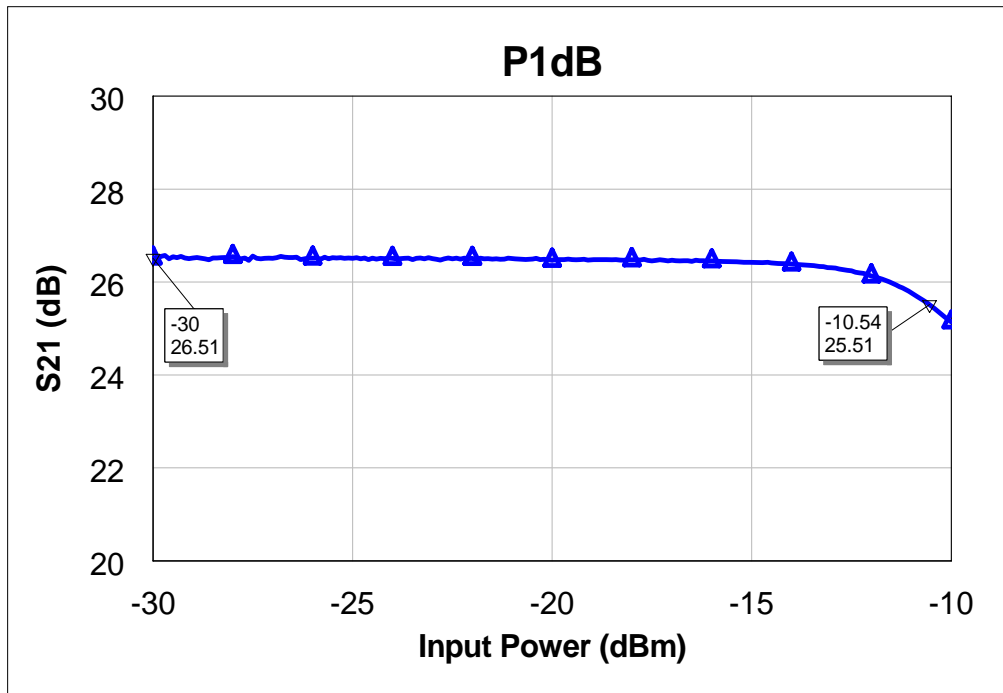
1. Operation beyond these limits may cause permanent damage to the component

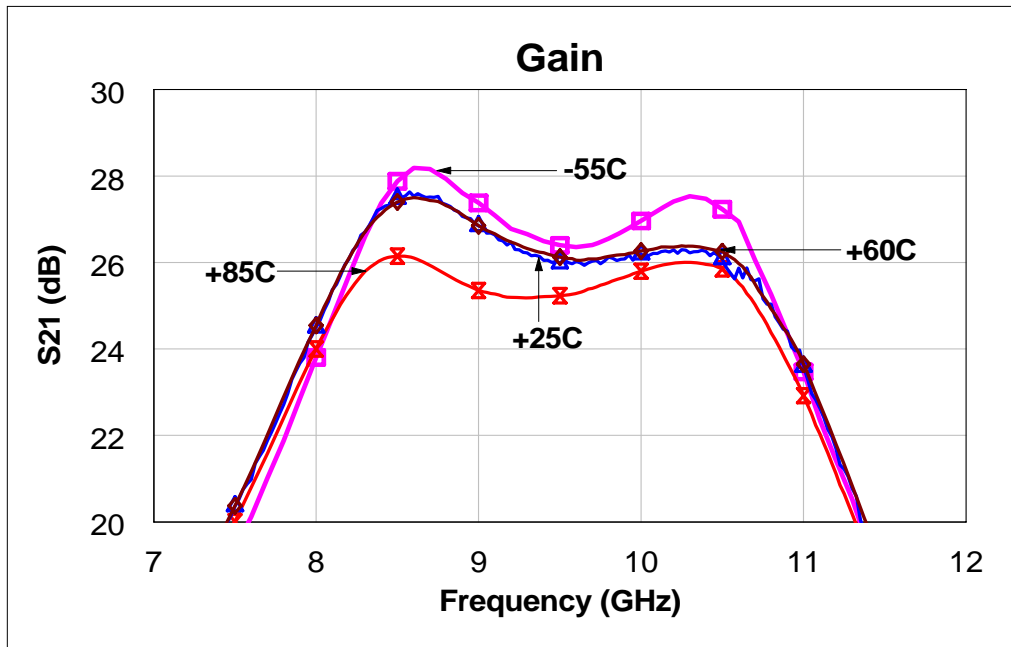
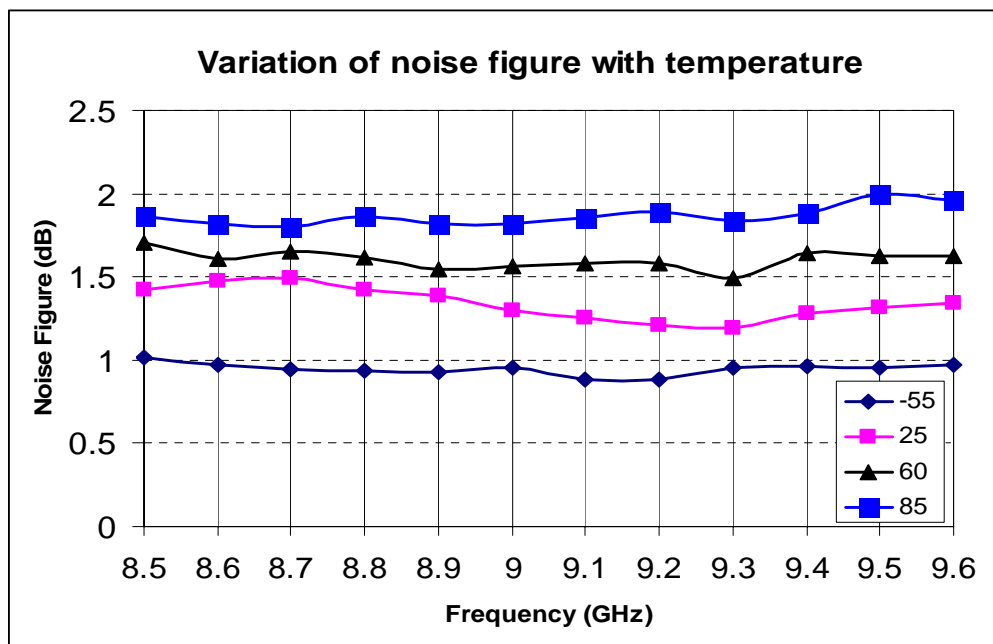
**Electrical Specifications @  $T_A = 25\text{ }^\circ\text{C}$ ,  $V_d = +15\text{V}$ ,  $Z_o = 50\text{ }\Omega$** 

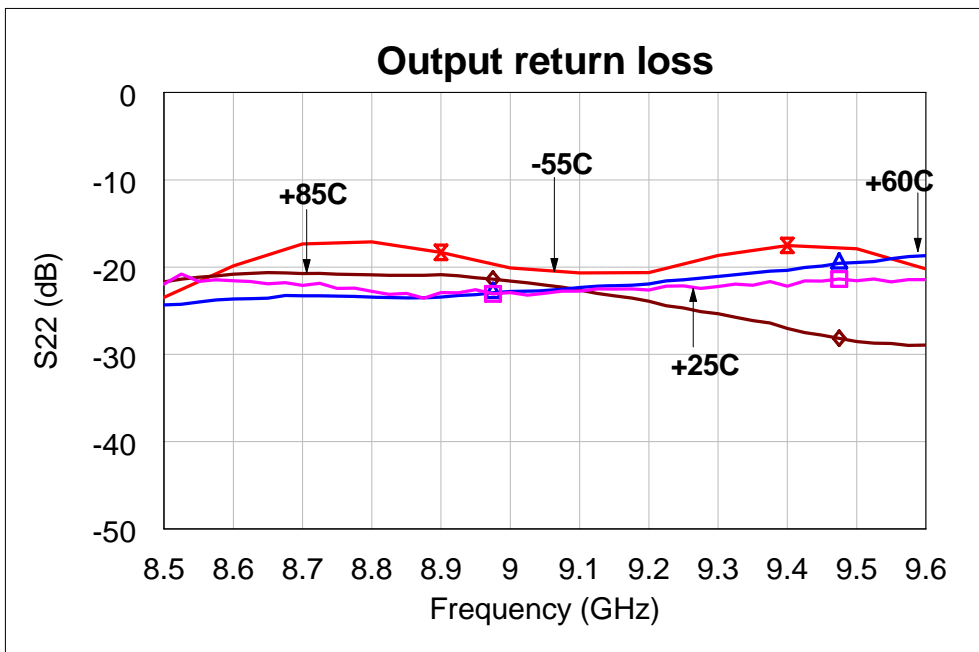
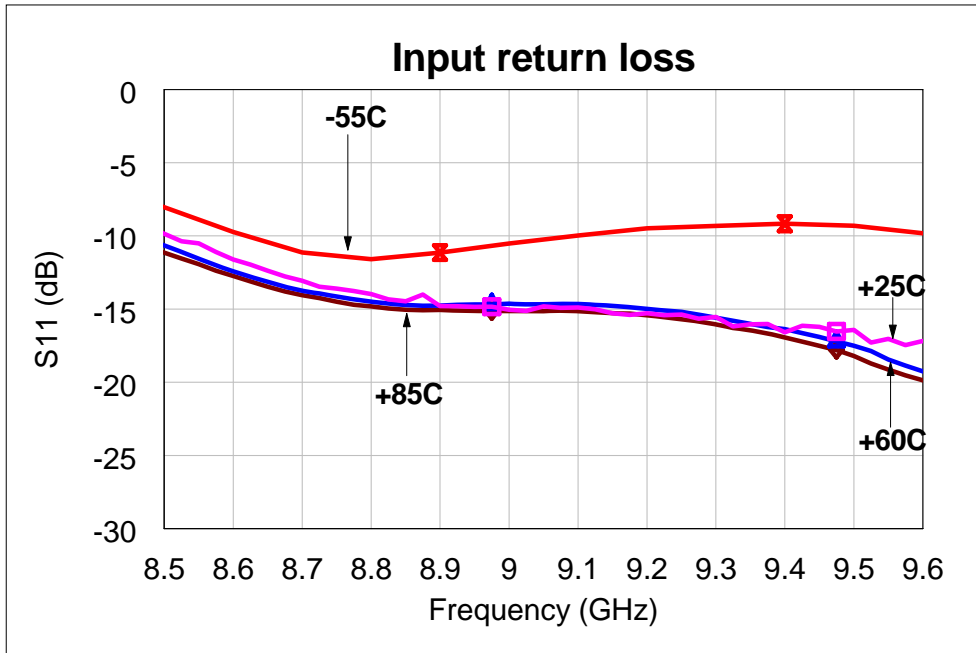
Parameter	Typ.	Units
Frequency Range	8.5 -10.5	GHz
Gain	26.5	dB
Gain Flatness	$\pm 0.8$	dB
Noise Figure (max.)	1.6	dB
Input Return Loss	10	dB
Output Return Loss	15	dB
Output Power (P1dB)	+14	dBm
Supply Current (I <sub>d</sub> )	80	mA

**Test fixture data**
*V<sub>d</sub> = 15 V, Total Current = 80 mA, T<sub>A</sub> = 25 °C*


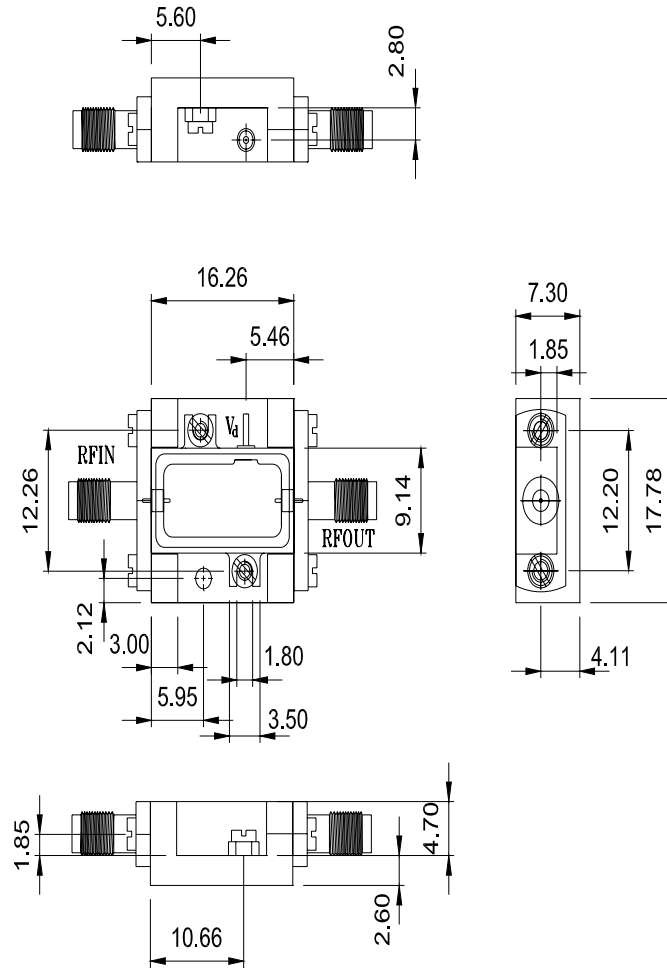
**Test fixture data**
*V<sub>d</sub> = 15 V, Total Current = 80 mA, T<sub>A</sub> = 25 °C*


**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