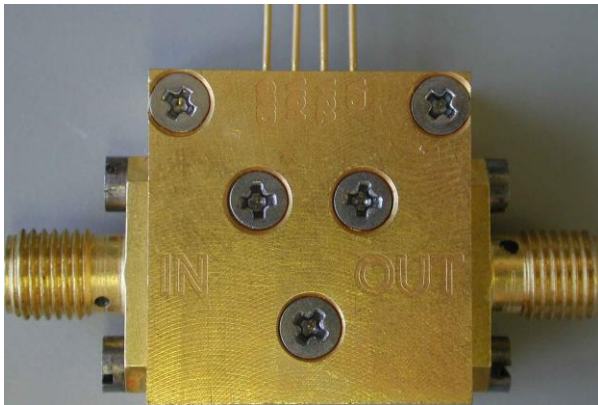


**Features**

RF Frequency:	1-12 GHz
Gain @ 21K:	32 dB $\pm$ 2 dB (2-12 GHz), typical
Noise temperature @ 21 K:	< 8 K, typical average
Noise figure @ 21 K:	< 0.11 dB, typical average
IRL:	> 10 dB (4.5-12 GHz), typical
ORL:	> 15 dB (2.5-12 GHz), typical
Operating temperature:	4.2 K- 320 K
DC power @ 21 K:	1.0 Vdc at 22 mA, typical

**Description**

The CITCRYO1-12D is a cryogenic, low noise, broadband amplifier. In its standard configuration it comes with female SMA connectors on the RF-input and output and a 4-pin 2 mm pitch header for the DC. The amplifier requires three separate DC-voltages.



Performance Characteristics ( $T_a=21K$ )

Parameter	Min	Typ	Max	Unit
Linear Gain				
1 GHz	28.0	35		dB
7 GHz	30.0	35		dB
12 GHz	29.0	34		dB
Noise Temp				
1 GHz		8.0	12.0	K
7 GHz		4.0	7.0	K
12 GHz		8.0	12.0	K

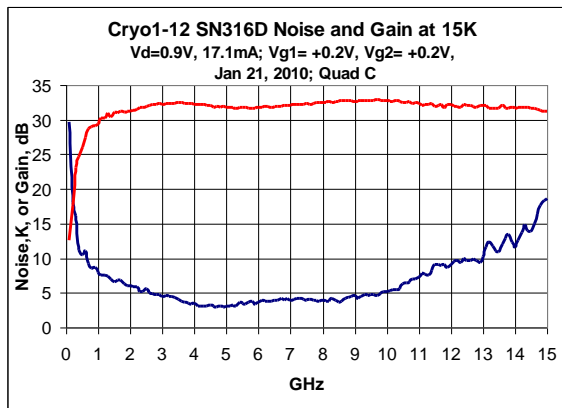
Parameter	Min	Typ	Max	Unit
IRL				
1 GHz	0.3	0.5		dB
7 GHz	13.0	16.0		dB
12 GHz	9.0	12.0		dB
ORL				
1 GHz	6	9		dB
7 GHz	13.0	16.0		dB
12 GHz	8.0	10.0		dB

# CITCRYO1-12D

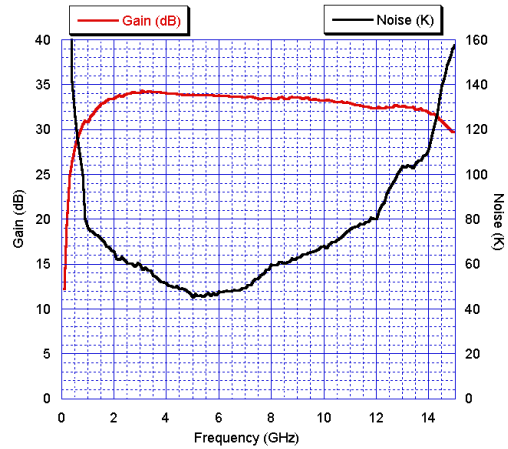
## Cryogenic HEMT Low Noise Amplifier

Measured typical performance characteristics ( $T_a=297K$  unless otherwise indicated)

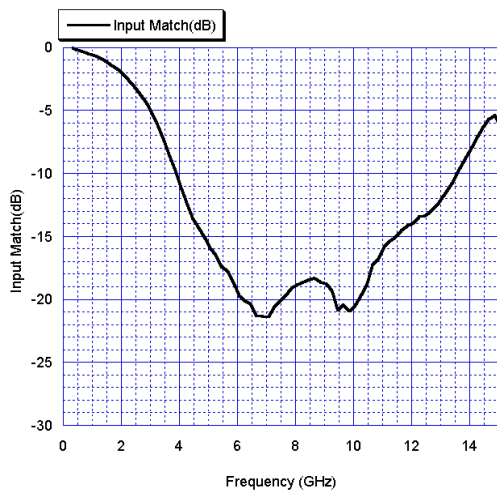
Typical Gain and Noise at 21K



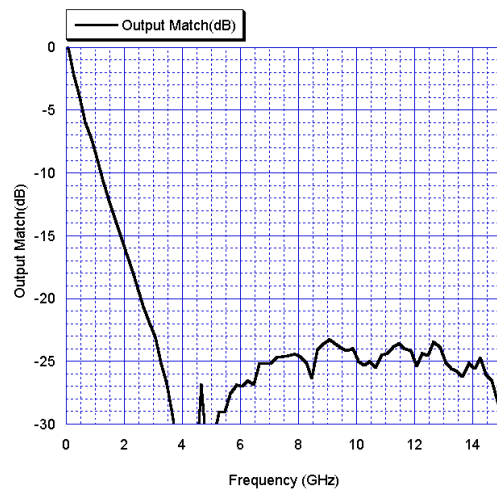
Typical Gain and Noise at 295K



Typical Input Match

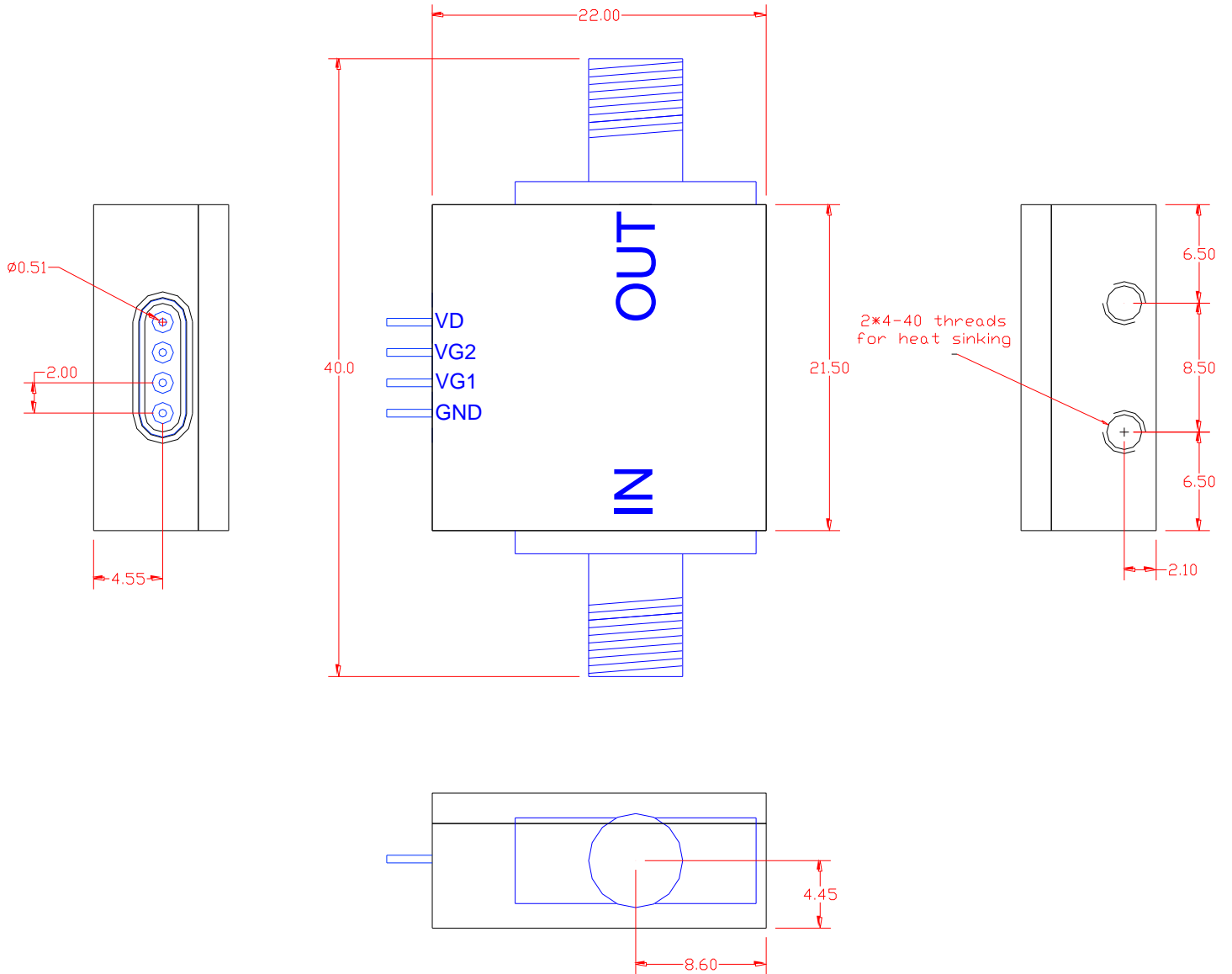


Typical Output Match



# CITCRYO1-12D Cryogenic HEMT Low Noise Amplifier

## Module drawing



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