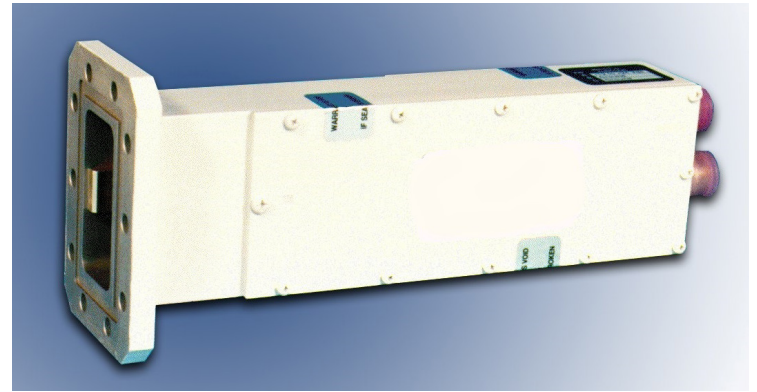


**LC-4000 series C-Band Low Noise Amplifiers are specifically designed for satellite earth station receiver front ends and other telecommunications applications.**

Utilizing state-of-the-art HEMT and GaAs FET technology, these amplifiers have been designed for both fixed and transportable applications. High performance models are available in several standard frequency ranges, with noise temperatures of 30, 35, 40 and 45 K. All noise temperature specifications are guaranteed over the full bandwidth of the LNA and are verified by cold load testing.



#### FEATURES:

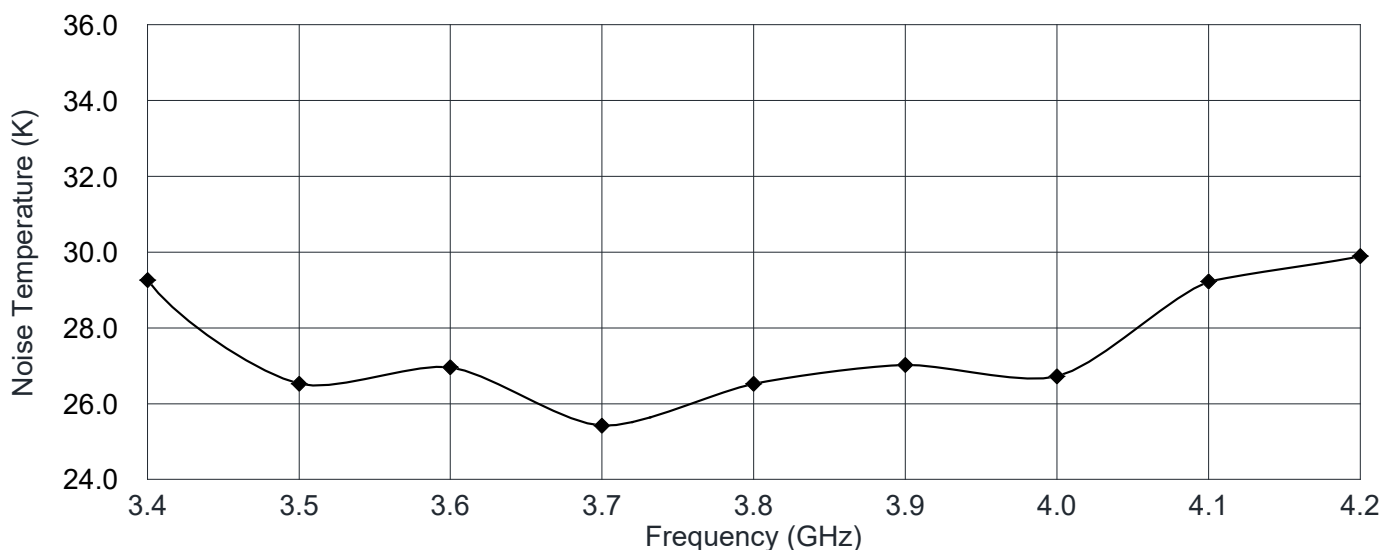
- State-of-the-art noise performance
- HEMT/GaAs FET design
- Weatherproof enclosure
- Internal low-loss input isolator
- Internal regulator
- Internal Form 'C' alarm
- Reverse polarity protection
- Surge and transient protection
- High reliability
- CE certified, RoHS compliant

#### OPTIONS:

- High output power, +20 dBm
- Universal input ac power supply
- Standard or extended band

### 30 K C-Band LNA, Model LCD4S30-XX

(◆ = Actual Measured Cold-Load Data)



Parameter	Notes	Specification
Frequency Range	Band "C" Band "D"	3.6 to 4.2 GHz 3.4 to 4.2 GHz
Gain		60 dB min., 64 dB typical, 66 dB max.,
Gain Flatness		±0.5 dB max., full band ±0.2 dB max., per 40 MHz
VSWR	Input Output	1.20:1 typical, 1.25:1 max. 1.20:1 typical, 1.50:1 max.
Noise Temperature (1)	At +23°C Versus temperature	See Table 1 See Table 2
Power Output at 1dB compression (P <sub>1dB</sub> )		+10 dBm min., +15 dBm typical, Standard +20 dBm min., +22 dBm typical, Option 2
3 <sup>rd</sup> Order Output Intercept Point		+20 dBm min., +26 dBm typical, Standard +30 dBm min., +32 dBm typical, Option 2
Group Delay per 40 MHz	Linear Parabolic Ripple	0.01 ns/MHz 0.001 ns/MHz <sup>2</sup> 0.1 ns peak to peak
AM/PM Conversion		0.05°/dB max., -5 dBm output power
Gain Stability (Constant Temp)	Short term (10 min.) Medium term (24 hrs) Long term (1 week)	±0.1 dB max ±0.2 dB max ±0.5 dB max
Gain Stability vs. Temperature		-0.05 dB per °C
Maximum Input Power	Damage Threshold Desens. Threshold 5.825-6.425	-0 dBm max. -10 dBm max.
Connectors	Input Output Power	CPR-229G-Flange Type N Female PT02E10-6P-027 (mate supplied)
Power Requirements	Voltage, standard Current, standard Current, with Option 2	12 V min., 15 V typical, 24 V max. 140 mA typical, 180 mA max. 200 mA typical, 240 mA max.
Operating Temperature		-40°C to +70°C
MTBF-(MIL-HDBK-217F)	Ground fixed, +40°C	296,000 hours
(1) Maximum noise temperature at +23°C at any frequency in the specified band.		

Table 1 - Part Number/Ordering Information

	LC	4S	-		
<b>Frequency Range</b>					
3.6-4.2 GHz.....		C			
3.4-4.2 GHz.....		D			
<b>Noise Temperature</b>					
45 K.....				45	
40 K.....				40	
35 K.....				35	
30 K.....				30	
<b>Output Power</b>					
+10 dBm.....				X	
+20 dBm.....				2	
<b>Power Configuration</b>					
+12 to +24 Vdc.....				X	
90-265 Vac, 47-63 Hz.....				4	

Consult factory for custom configurations.

Table 2 - Noise Temperature vs Ambient Temperature

Noise temperature vs. ambient temperature can be found from the equation,

$$NT_2/NT_1 = (T_2/T_1)^{1.5}$$

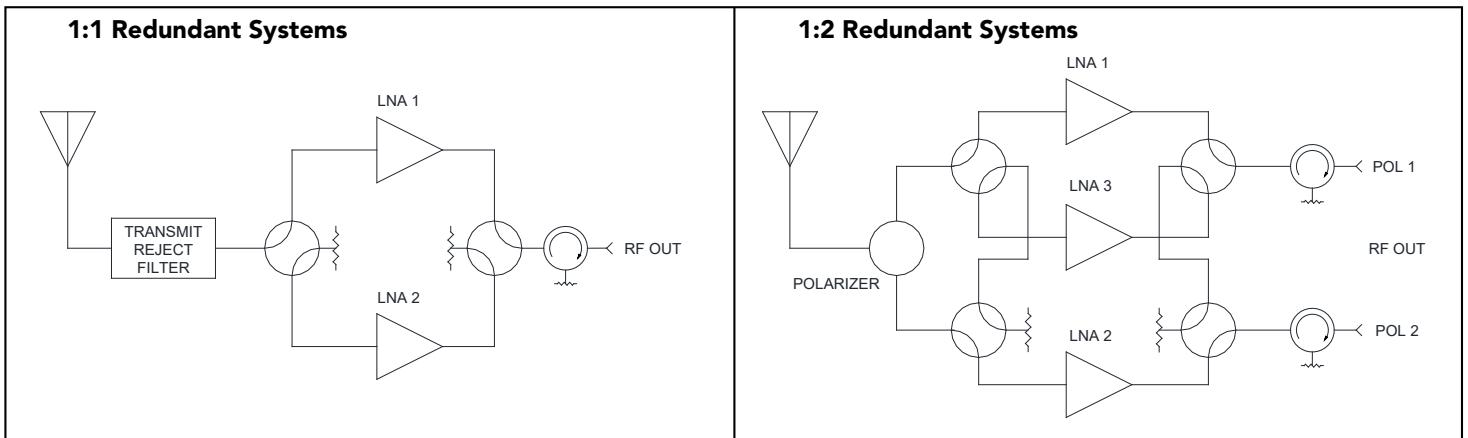
where:

- NT<sub>2</sub> = Noise Temperature at T<sub>2</sub>
- NT<sub>1</sub> = Noise Temperature at T<sub>1</sub>
- T<sub>2</sub> = Temperature 2 in K
- T<sub>1</sub> = Temperature 1 in K  
(K = °C + 273)

For the case where T<sub>1</sub> = 296 K (+23 °C), the ratio NT<sub>2</sub> / NT<sub>1</sub> is shown in the table below:

Ambient Temperature T <sub>2</sub> (°C)	Ratio NT <sub>2</sub> / NT <sub>1</sub>
0	0.89
+23	1.00
+40	1.09
+50	1.14
+60	1.19

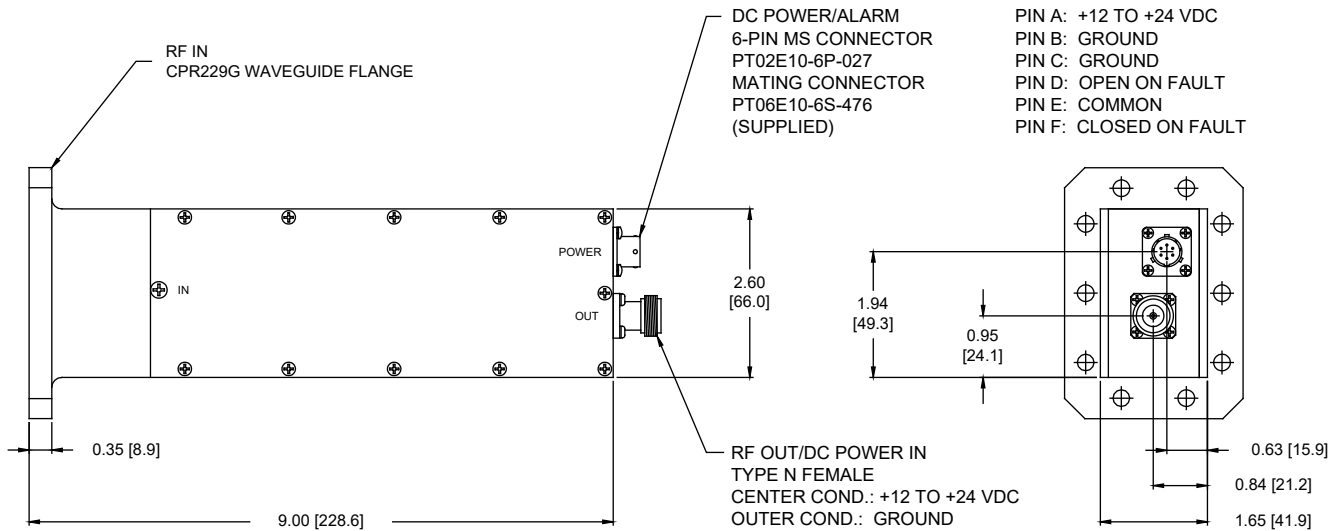
Typical Applications



### Outline Drawing, Standard LNA

NOTE:

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES [mm].

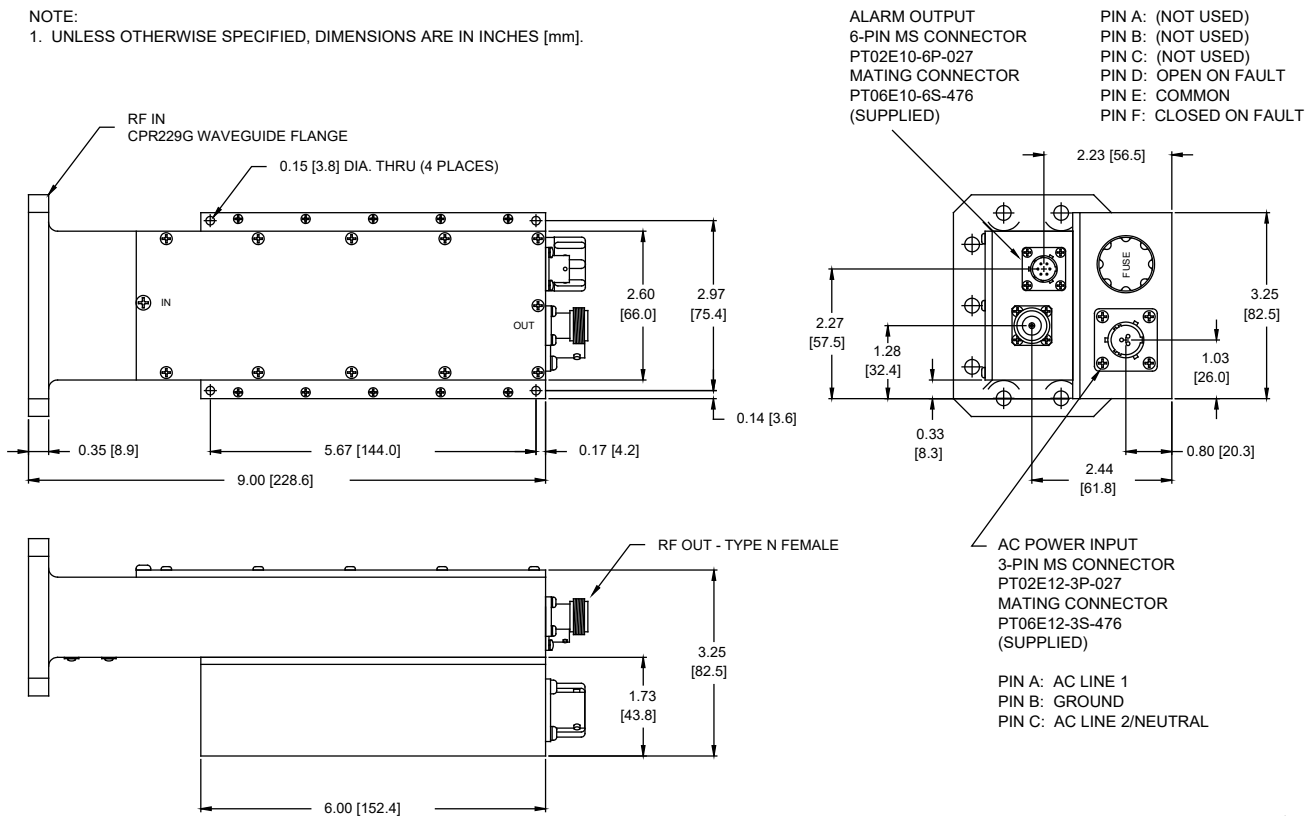


Outline 1045

### Outline Drawing, LNA with AC Power Supply

NOTE:

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES [mm].



Outline 1620