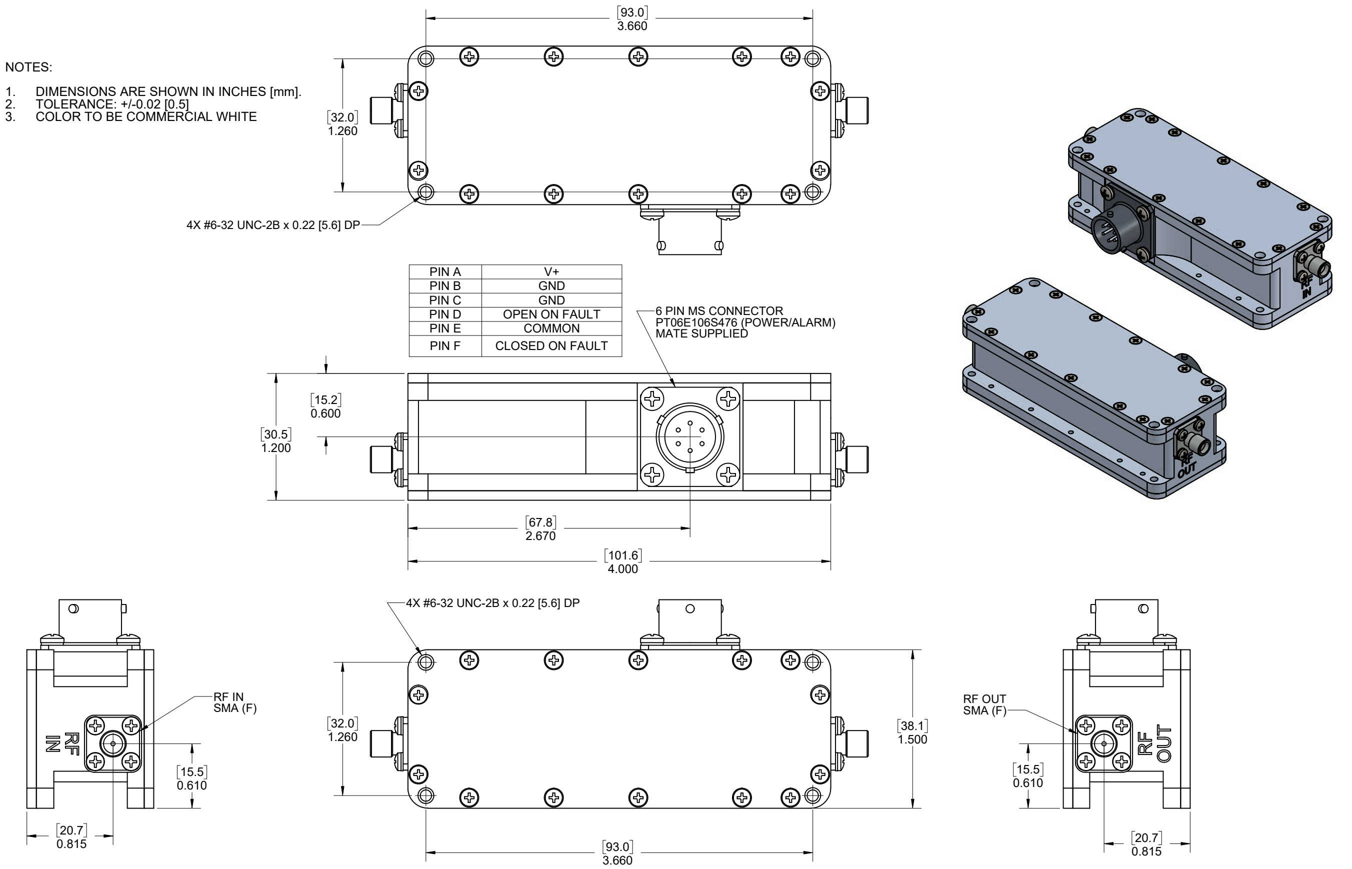
LSH2S series S-Band Low Noise Amplifiers are specifically designed for satellite earth station receiver front ends and other telecommunications applications.

Utilizing state-of-the-art MMIC technology, these amplifiers have been designed for both fixed and transportable applications. High performance models are available with noise temperatures as low as 35 K. Noise temperature specifications are guaranteed over the full bandwidth of the LNA.

FEATURES:

- State-of-the-art noise performance
- MMIC design
- Internal regulator
- Reverse polarity protection
- High reliability
- Fault alarm

Outline Drawing



Outline 33551-1

Parameter	Notes	Specification
Frequency Range	Band "H"	2100 to 2500 MHz
Gain	-X -1	60 dB min., 63 dB typical, 66 dB max. 50 dB min., 53 dB typical, 56 dB max.
Gain Flatness		±0.5 dB max. over the full band ±0.25 dB max. per 10 MHz
VSWR	Input Output	1.50:1 typical, 1.75:1 max. 1.50:1 typical, 1.75:1 max.
Noise Temperature (1)		See Table 1 for maximum, at +23°C See Table 2 for typical, versus temperature
Power Output at 1dB compression ($P_{1\,dB}$)		+10 dBm min., +13 dBm typical
3rd Order Intercept	Output, OIP_3	+20 dBm min., +23 dBm typical
Group Delay per 36 MHz	Linear Parabolic Ripple	0.05 ns/MHz 0.005 ns/MHz^2 1.0 ns peak to peak
AM/PM Conversion		0.05°/dB typical, -5° dBm output power
Gain Stability (Constant Temperature)		±0.1. dB max. Short term (10 min) ±0.2. dB max. Medium term (24 hrs) ±0.5. dB max. Long term (1 week).
Gain Stability versus temperature		-0.04 dB per °C
Maximum Input Power	Damage threshold	+10 dBm max.
Connectors	Input, Output Power	SMA Female MS-6 pin (mate supplied)
Power Requirements	Voltage Current	11 V min., 12 V typical, 15 V max. 190 mA typical, 220 mA max.
Operating Temperature		-40°C to +60°C

(1) Maximum noise temperature at +23 °C at any frequency in the specified band.

Table 1 - Part Number Ordering Information

LS□2S□–□

Frequency Band

2100–2500 MHz .... H

Noise Temperature

35 K 35

Gain

63 dB Typ. X

53 dB Typ. 1

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_2 = Noise Temperature at T_2

NT_1 = Noise Temperature at T_1

T_2 = Temperature 2 in K

T_1 = Temperature 1 in K

(K = °C + 273)

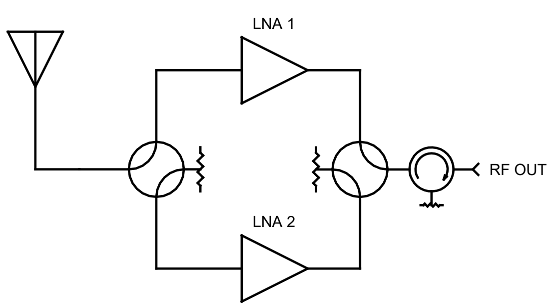
For the case where T_1 = 296 K (+23 °C), the ratio NT_2 /NT_1 is shown in the table below:

Ambient Temperature T_2 (°C)	Ratio NT_2 / NT_1
0	0.88
+23	1.00
+40	1.09
+50	1.14
+60	1.19

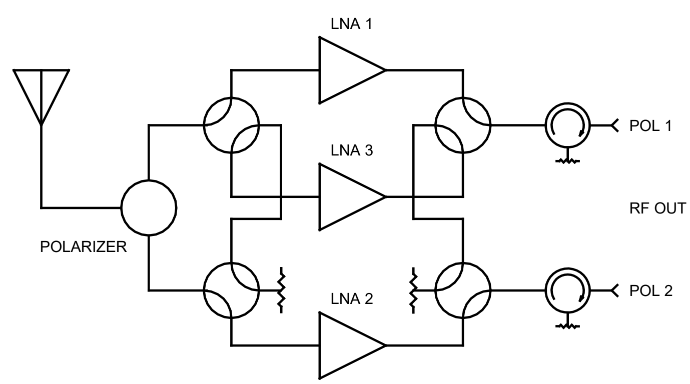
Example: For model LSH2535-X, NT_1 = 35 K at +23 °C; what is NT_2 at +50 °C?
From the table, NT_2 /NT_1 at +50 °C = 1.14: NT_2 = 1.14 x (35 K) = 40 K at +50 °C

Typical Applications

1:1 Redundant Systems



1:2 Redundant Systems



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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.