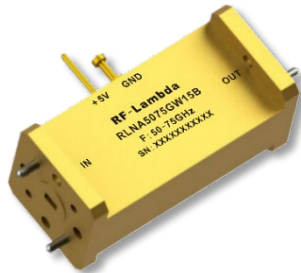


WR15 Waveguide Low Noise Amplifier 50GHz ~ 75GHz



Note: The photo is for illustration purposes only.
Please refer to the outline drawing.

Features

- Gain: 35dB Typical
- Noise Figure: 6dB Typical
- P1dB Output Power: +20dBm Typical
- Supply Voltage: +5V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{CC} = +5\text{V}$

| Parameter | Min. | Typ. | Max. | Units |
|--|--------------------------------|---------|------|--------|
| Frequency Range | 50 | | 75 | GHz |
| Gain | | 35 | | dB |
| Gain Flatness | | ± 3 | | dB |
| Gain Variation Over Temperature (-40°C ~ +85°C) | | - | | dB |
| Noise Figure | | 6 | | dB |
| Input VSWR | | 2 | | : 1 |
| Output VSWR | | 2 | | : 1 |
| Output 1dB Compression Point (P1dB) | | 20 | | dBm |
| Saturated Output Power (Psat) | | 22 | | dBm |
| Output Third Order Intercept (OIP3) | | 30 | | dBm |
| Supply Current ($V_{CC}=+5\text{V}$) | | 1100 | | mA |
| Isolation S12 | | - | | dB |
| Weight | | - | | ounces |
| Impedance | | 50 | | Ohms |
| Input / Output Connectors | WR15 | | | |
| Finish | Gold Plated | | | |
| Material | Aluminum / Copper | | | |
| Package Sealing | Epoxy Sealed (Standard) | | | |
| | Hermetically Sealed (Optional) | | | |

WR15 Waveguide Low Noise Amplifier 50GHz ~ 75GHz

Absolute Maximum Ratings

| | |
|-------------------|--------|
| Operating Voltage | +6V |
| RF Input Power | -10dBm |

Biasing Up Procedure

| | |
|---------------------|--------------------------|
| Step 1 | Connect Ground Pin |
| Step 2 | Connect input and output |
| Step 3 | Connect +5V biasing |
| Power OFF Procedure | |
| Step 1 | Turn off +5V biasing |
| Step 2 | Remove RF connection |
| Step 3 | Remove Ground. |

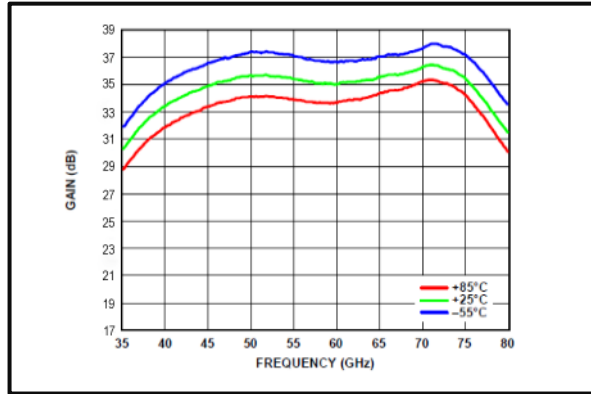
Environmental Specifications and Test Standards

| Parameter | Description |
|--------------------------------|---|
| Operational Temperature | -40°C~+85°C (Case Temperature) |
| Storage Temperature | -50°C~+105°C |
| Thermal Shock | -40°C → +85°C (5 Cycles / 10 hours) |
| Random Vibration | MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis |
| High Temperature Burn In | Temperature +85°C for 72 Hours |
| Shock | 1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction). |
| Altitude | Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min) |
| Hermetically Sealed (Optional) | MIL-STD-883 (For Hermetically Sealed Units) |

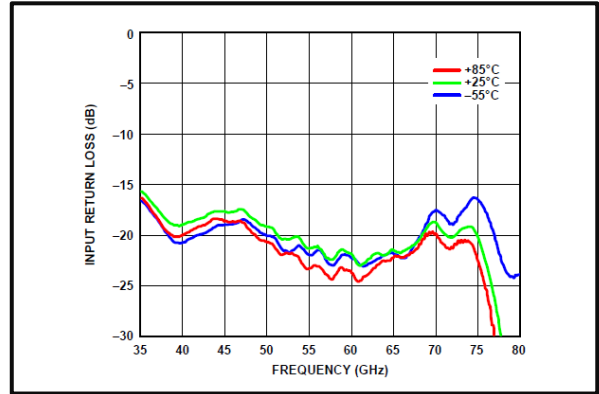
WR15 Waveguide Low Noise Amplifier 50GHz ~ 75GHz

Typical Performance Plots

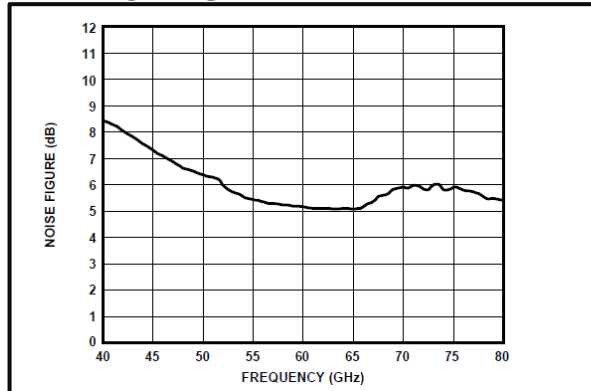
Gain vs. Frequency



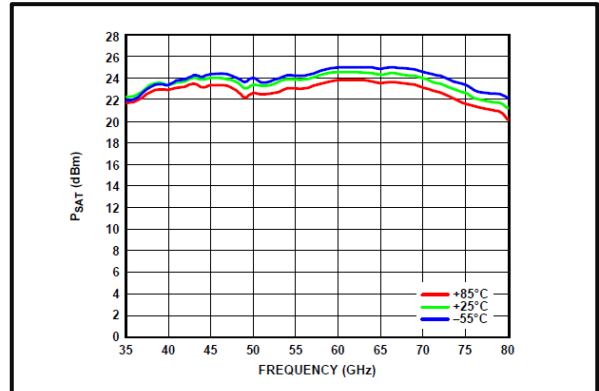
Input Return Loss



Noise Figure @ +25°C



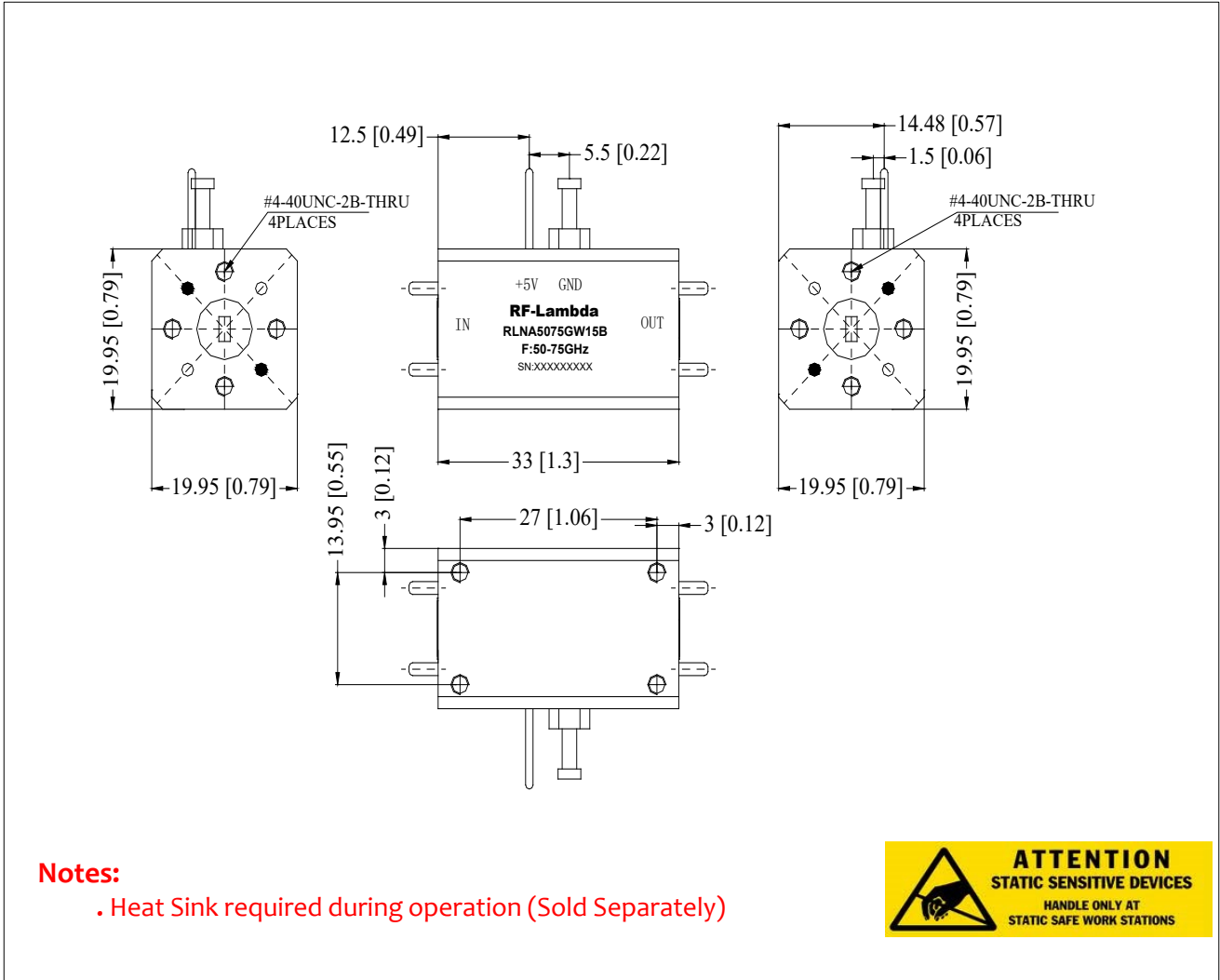
Psat vs. Frequency



WR15 Waveguide Low Noise Amplifier 50GHz ~ 75GHz

Outline Drawing:

All Dimensions in mm [inches]



Notes:

. Heat Sink required during operation (Sold Separately)



Ordering Information

| Part No. | Description |
|---------------|---|
| RLNA5075GW15B | 50-75GHz WR15 Waveguide Low Noise Amplifier |

Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information. RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.