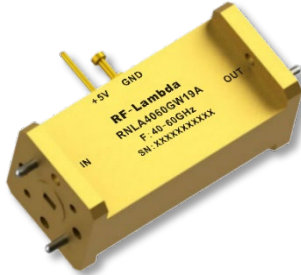


WR19 Waveguide Low Noise Amplifier 40GHz ~ 60GHz



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

Features

- Gain: 25dB Typical
- Noise Figure: 8dB 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	40		60	GHz
Gain		25		dB
Gain Flatness		± 4		dB
Gain Variation Over Temperature ($-40^\circ\text{C} \sim +85^\circ\text{C}$)		-		dB
Noise Figure		8		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 ($V_{cc}=+5\text{V}$)		700		mA
Isolation S12		-		dB
Weight		-		ounces
Impedance		50		Ohms
Input / Output Connectors	WR19			
Finish	Gold Plated			
Material	Aluminum / Copper			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

WR19 Waveguide Low Noise Amplifier 40GHz ~ 60GHz

Absolute Maximum Ratings

Operating Voltage	+5V
RF Input Power	0dBm

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.

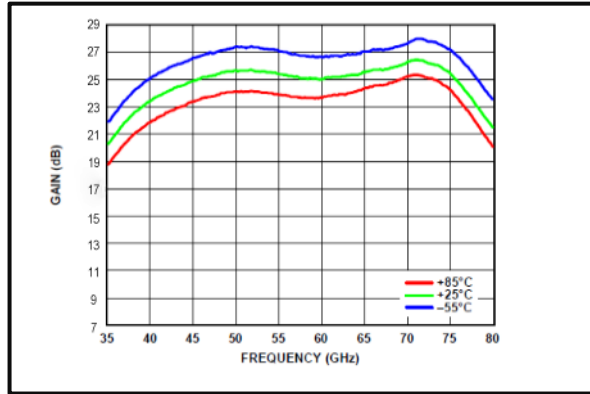
Environmental Specifications and Test Standards

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)

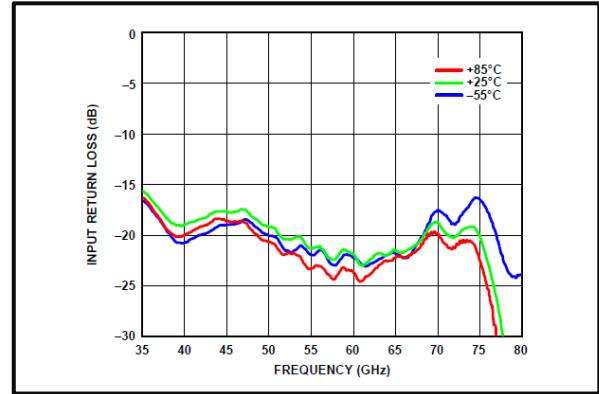
WR19 Waveguide Low Noise Amplifier 40GHz ~ 60GHz

Typical Performance Plots

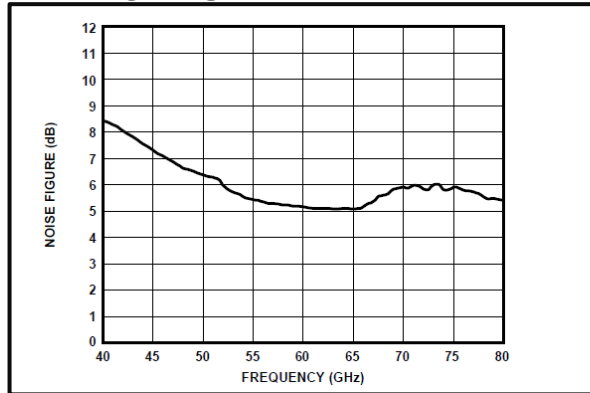
Gain vs. Frequency



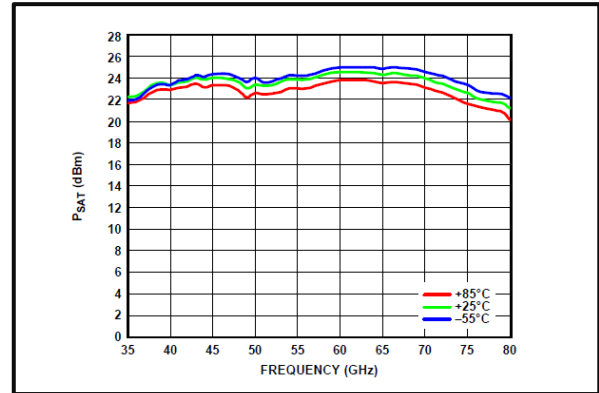
Input Return Loss



Noise Figure @ +25°C



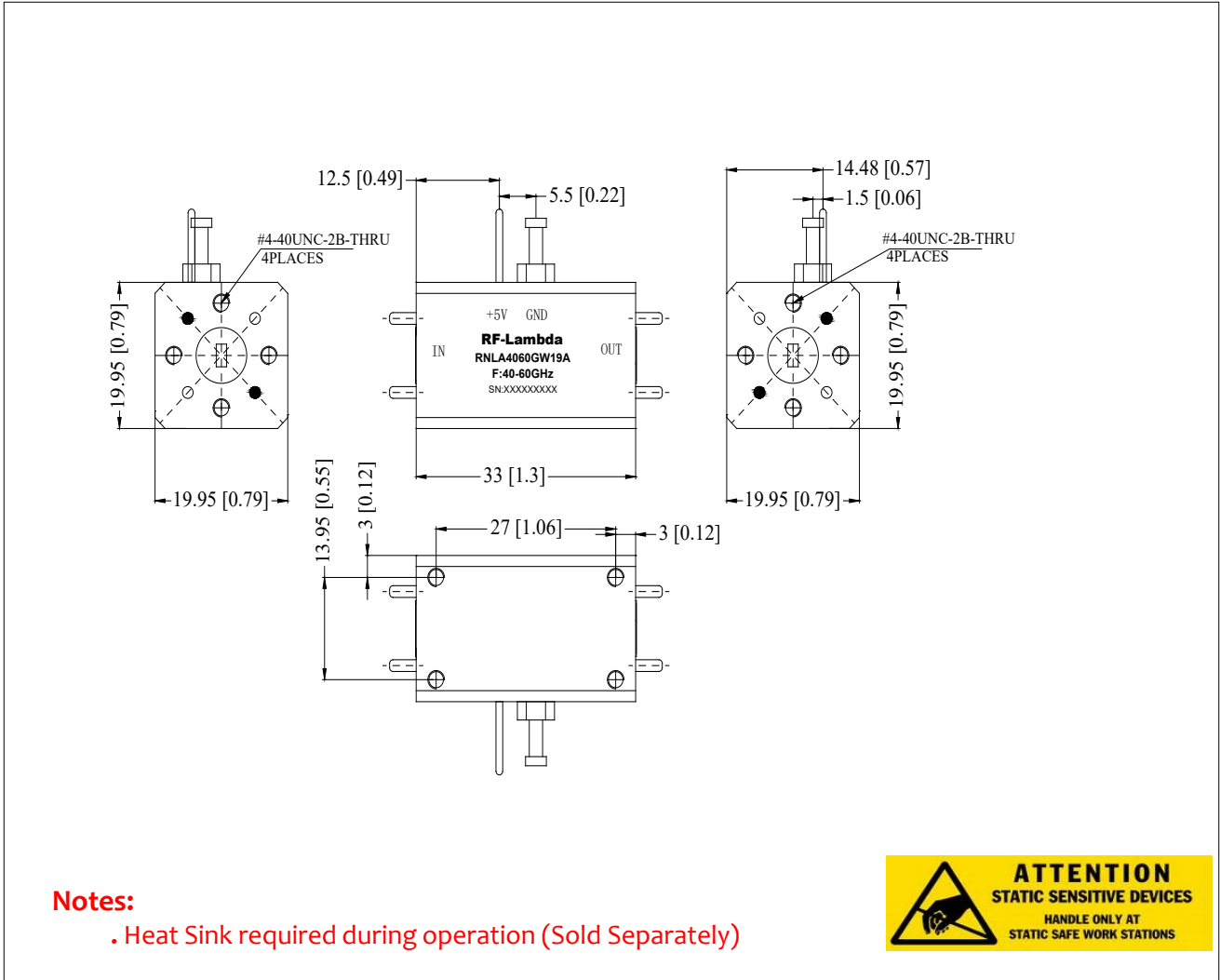
Psat vs. Frequency



WR19 Waveguide Low Noise Amplifier 40GHz ~ 60GHz

Outline Drawing:

All Dimensions in mm [inches]



Ordering Information

Part No.	Description
RNLA4060GW19A	40-60GHz WR19 Waveguide Low Noise Amplifier

Important Notice

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