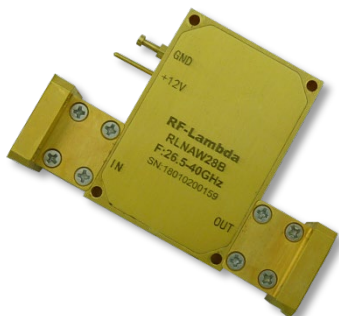


WR28 Low Noise Amplifier 26.5GHz ~ 40GHz



Features

- Gain: 48dB Typical
- Noise Figure: 3.0dB Typical
- P1dB Output Power: +21dB m Typical
- Supply Voltage: +12V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{CC} = +12\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	26.5		32	32		40	GHz
Gain	45	48		40	45		dB
Gain Flatness		± 2.0			± 3.0		dB
Gain Variation Over Temperature ($-40^\circ\text{C} \sim +85^\circ\text{C}$)		± 2.0			± 3.0		dB
Noise Figure		3.0	4.0		3.5	4.5	dB
Input VSWR		2.0			2.2		: 1
Output VSWR		2.0			2.2		: 1
Output 1dB Compression Point (P1dB)	18	21		16	19		dBm
Saturated Output Power (Psat)		23			20		dBm
Output Third Order Intercept (IP3)		26			23.5		dBm
Isolation S12		-60			-60		dB
Supply Current ($V_{CC}=+12\text{V}$)		420	500		420	500	mA
Weight	2.5 Max.						ounces
Impedance	50						Ohms
Input / Output Connectors	WR28						
Finish	Gold Plated						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

WR28 Low Noise Amplifier 26.5GHz ~ 40GHz

Absolute Maximum Ratings

Operating Voltage	+15V
RF Input Power	-20dBm

Biasing Up Procedure

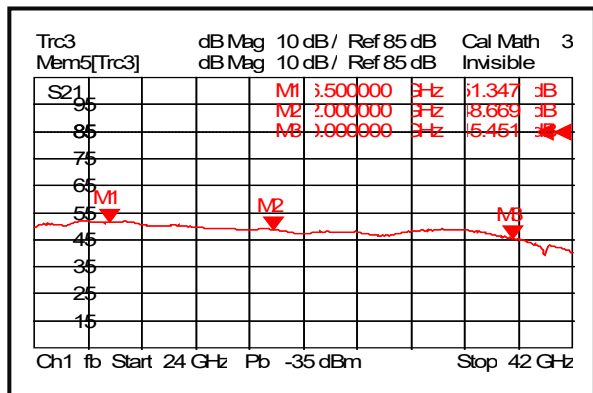
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +12V biasing
Power OFF Procedure	
Step 1	Turn off +12V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

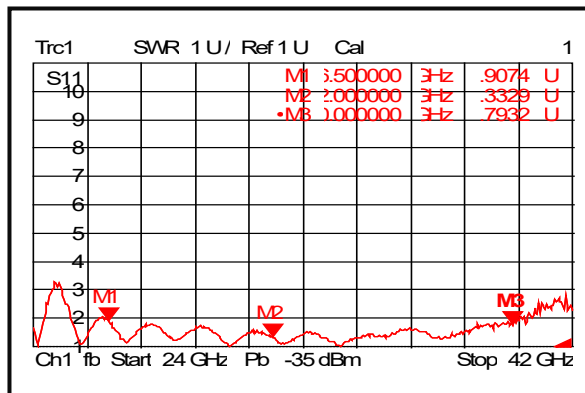
Parameter	Description
Operational Temperature	-40°C~+85°C (Case Temperature)
Storage Temperature	-50°C~+105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
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)

Typical Performance Plots

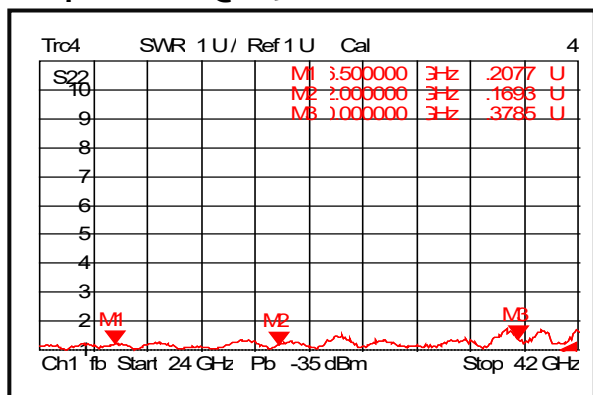
Gain @+25°C



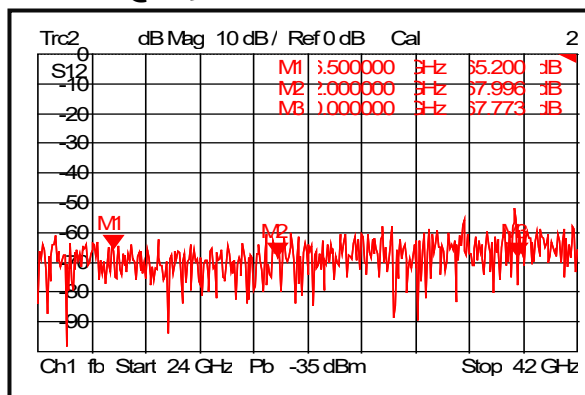
Input VSWR @+25°C



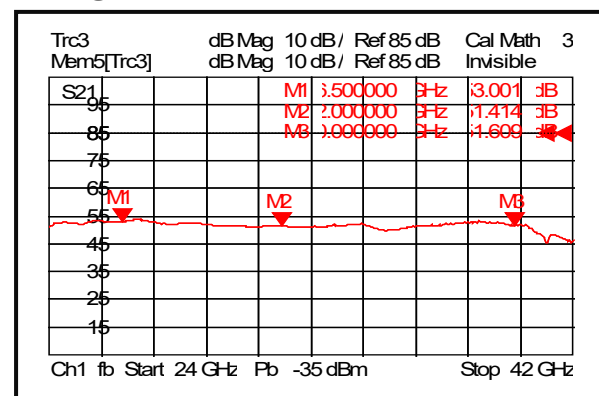
Output VSWR @+25°C



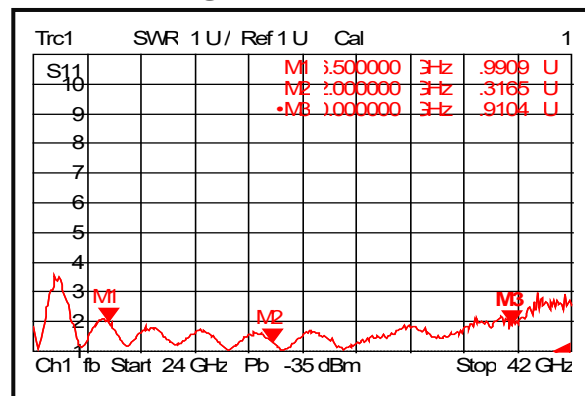
Isolation @+25°C



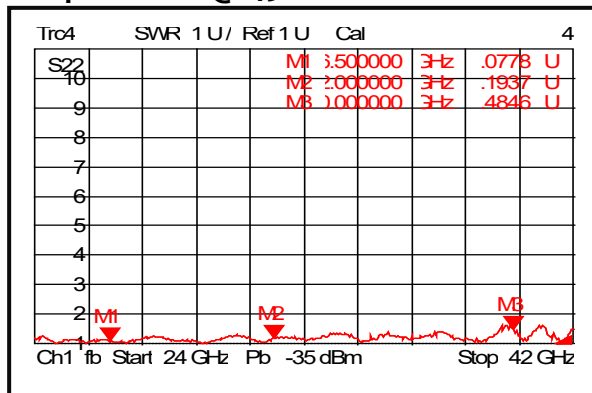
Gain @-40°C



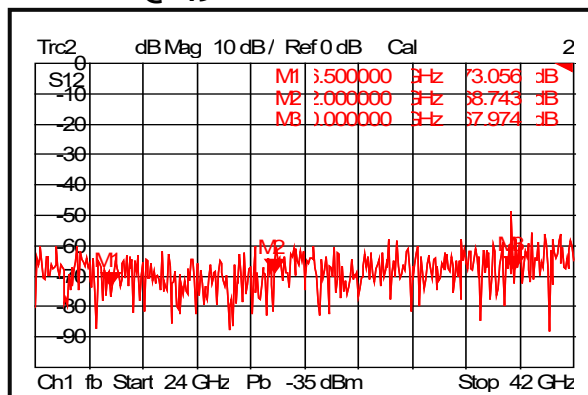
Input VSWR @-40°C



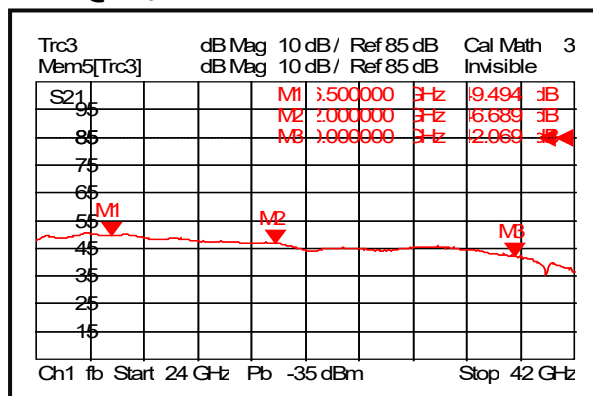
Output VSWR @-45°C



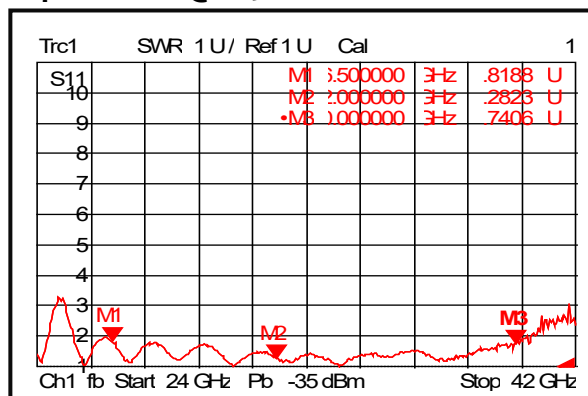
Isolation @-45°C



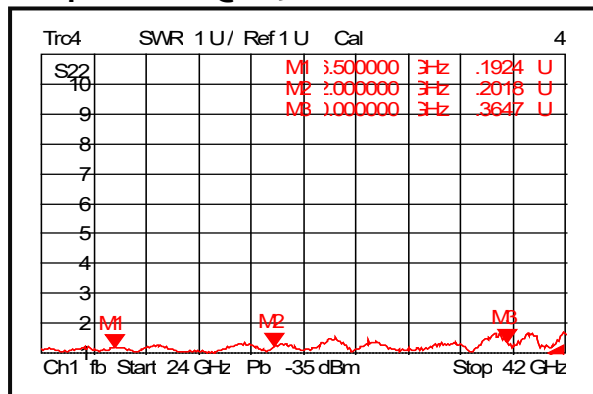
Gain @+85°C



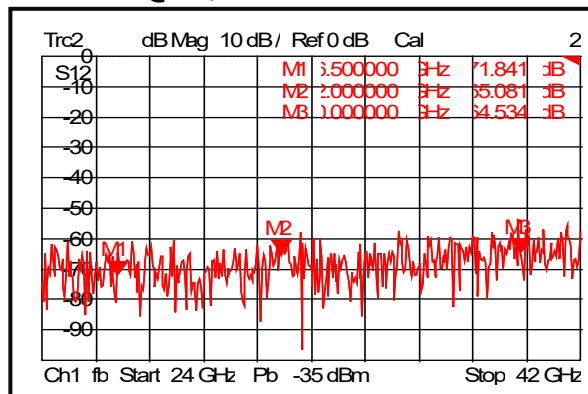
Input VSWR @+85°C



Output VSWR @+85°C

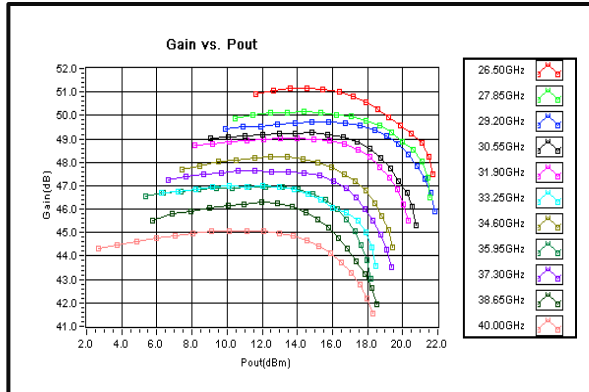


Isolation @+85°C

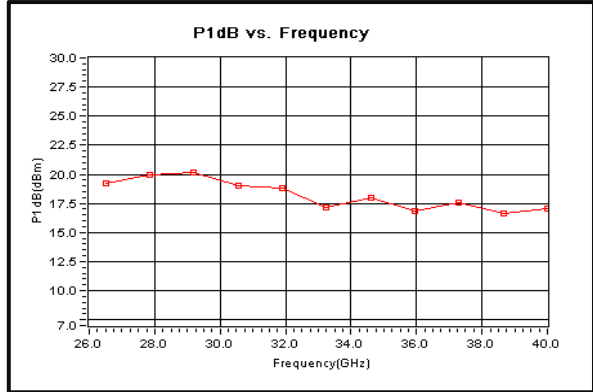


WR28 Low Noise Amplifier 26.5GHz ~ 40GHz

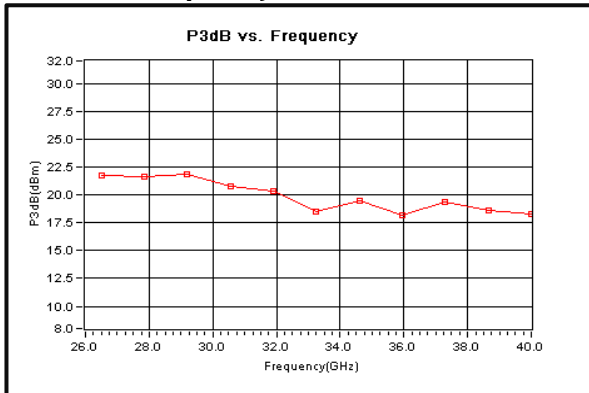
Gain vs. Output Power



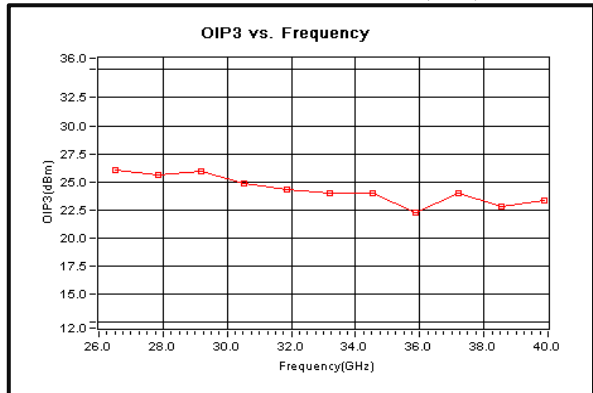
P1dB vs. Frequency



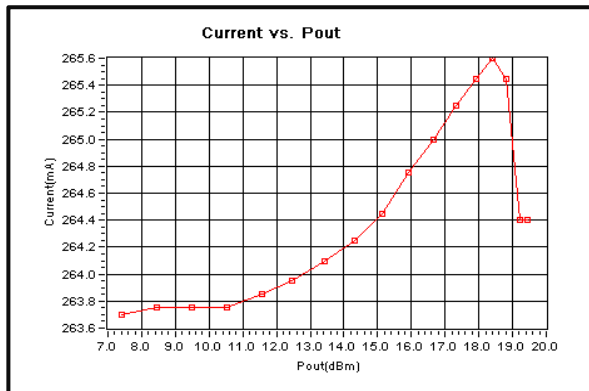
P3dB vs. Frequency



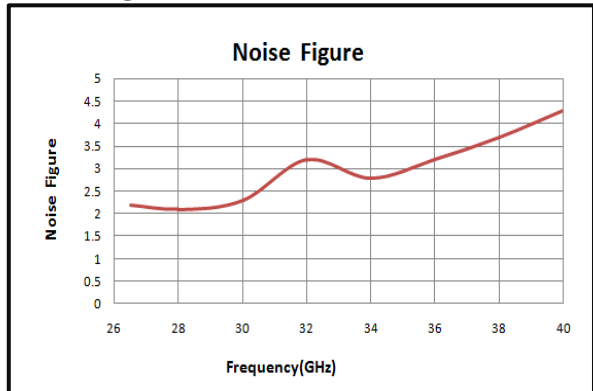
Output Third Order Intercept (IP3)



Current



Noise Figure

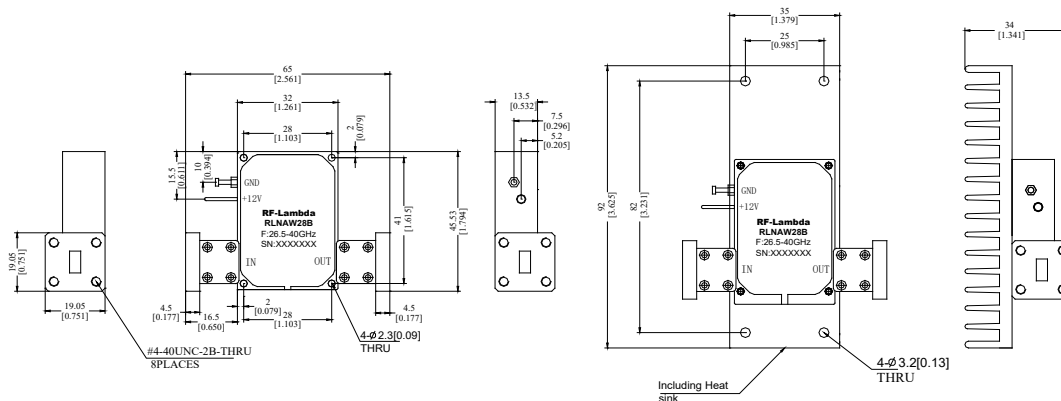


WR28 Low Noise Amplifier 26.5GHz ~ 40GHz

Outline Drawing:

All Dimensions in mm [inches]

Housing Tolerances ± 0.1 [0.004]



WR28	WG22	R320
UG599/U		
Dimensions	inches	mm
A	0.75	19.05
E	0.265	6.73
F	0.250	6.35
Hole Dia.	0.116	2.98

The diagram shows a square mounting hole pattern with dimensions A, E, and F. A is the overall width, E is the distance between the top holes, and F is the distance between the side holes.

Notes:

- . Heat Sink required during operation (Sold Separately)
- . Standard torque wrench must be used to secure RF connectors.



Ordering Information

Part No.	Description
RLNAW28B	26.5-40GHz WR28 Low Noise Amplifier

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