Ultra Wide Band Low Noise Amplifier 24GHz~40GHz

RoHS Compliant

- Output power +15dBm Typ.
- Low Noise Figure: 3dB typical.
- High P1dB >12dBm full band.
- No External Matching Required
- Applicable for base station , repeaters, cellular networks
- Aerospace and military application
- LMDS multi-carrier operation
- High peak to average handling capability
- All specifications can be modified upon request

Electrical Specifications, TA = +25 ° C, Vdd = +4V Vg= -5V

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	24~32			32~40			GHz
Gain	10	11	12	10	12	14	dB
Gain Variation Over Temperature		0.5	0.8		0.5	0.8	dB
Noise Figure	2	2.5	3	2	2.5	3	dB
Input VSWR	1.9	2.0	2.1	1.2	2.0	2.1	
Output VSWR	1.1	1.5	4.5	1.6	1.9	2.1	
Output Power For 3dB Compression (P3dB)	12	13	14	13	13	14	dBm
Output Third Order Intercept (IP3)	18	19	20	18	19	20	dBm
Supply Current (Idd) (Vdd=+4V)		60			60		mA
Power Supply		4			4		V
Isolation S12	31	35	40	30	35	40	dB
Input Max		P3dB - Gain			P3dB - Gain		dBm
Weight	100						g
Impedance	50						Ohms
Input /Output Connector	2.92mm-Female						
Finishing	Gold plating						
Material	Aluminum/copper						

Note: Input/output return loss measurements may include 30dB attenuators to protect equipment

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Absolute Maximum Ratings	
Supply Voltage Vdd	+4.2 VDC
Supply Voltage Vg	-5.5 VDC
RF Input Power (RFIN)	P2dB - Gain
Storage Temperature(C°)	-50 to +125

Note: Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves

Biasing Up Procedure	
Step 1	Connect input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 2	Connect Ground Pin
Step 3	Connect -5V biasing
Step 4	Connect +4V biasing
Power OFF Procedure	
Step 1	Connect +4V biasing
Step 2	Connect -5V biasing
Step 2	Remove RF connection
Step 4	Remove Ground.

Environmental Specifications	
Operational Temperature (C°)	-45 ~ +85(Case Temperature must be less than 85C all time)
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msc half sin wave,3 axis both directions

Ordering Information	
Part No	Description
R24G40GSC	24GHz~40GHz Low Noise Amplifier

Amplifier Use

Ensure that the amplifier input and output ports are safely terminated into a proper 50 ohm load before turning on the power. Never operate the amplifier without a load. A proper 50 ohm load is defined as a load with impedance less than 1.9:1 or return loss larger than 10dB relative to 50 Ohm within the specified operating band width.

Power Supply Requirements

Power supply must be able to provide adequate current for the amplifier. Power supply should be able to provide 1.5 times the typical current or 1.2 times the maximum current (whichever is greater).

In most cases, RF-Lambda amplifiers will withstand severe mismatches without damage. However, operation with poor loads is discouraged. If prolonged operation with poor or unknown loads is expected, an external device such as an isolator or circulator should be used to protect the amplifier.

Ensure that the power is off when connecting or disconnecting the input or output of the amp.

Prevent overdriving the amplifier. Do not exceed the recommended input power level.

Adequate heat-sinking required for RF amplifier modules. Please inquire.

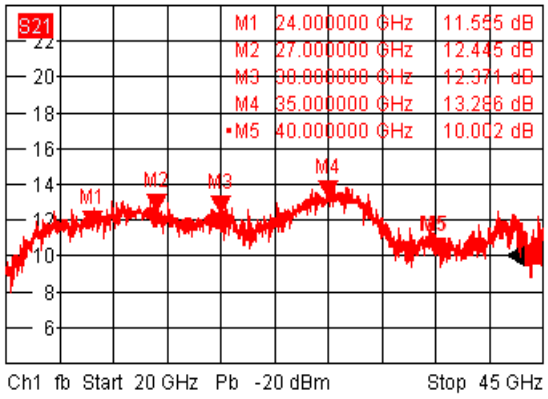
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

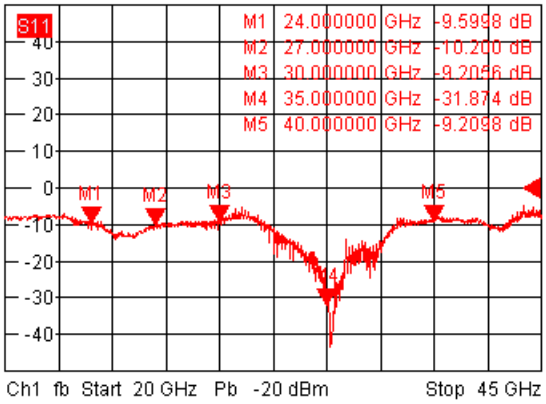
What is not covered with warranty?

Each of RF-Lambda amplifiers will go through power and temperature stress testing.
Due to fragile of the die, IC or MMIC, those are not covered by warranty. Any damage to those will NOT be free to repair.

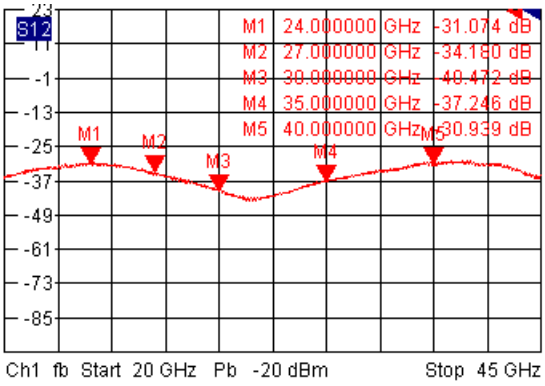
Gain



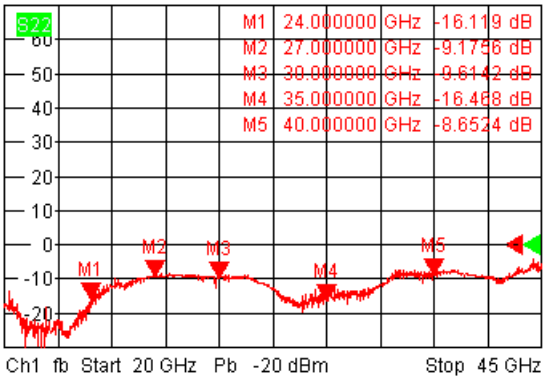
Input Return Loss



Isolation



Output Return Loss



Note: Input/output return loss measurements include attenuators to protect equipment

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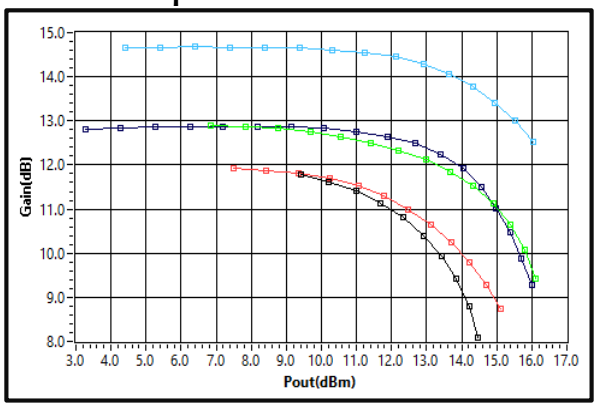
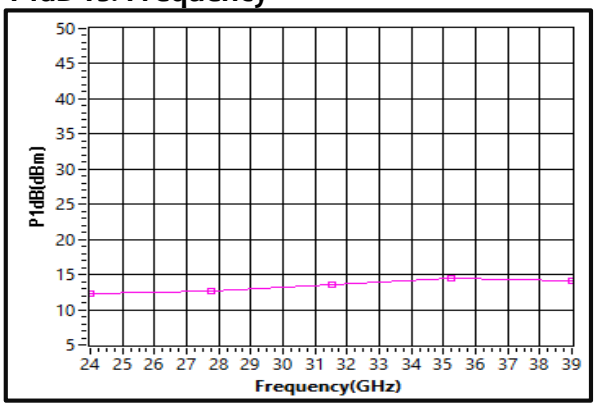
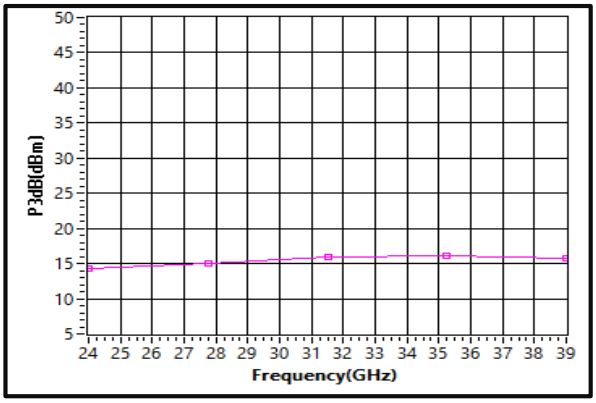
Gain vs. Output Power



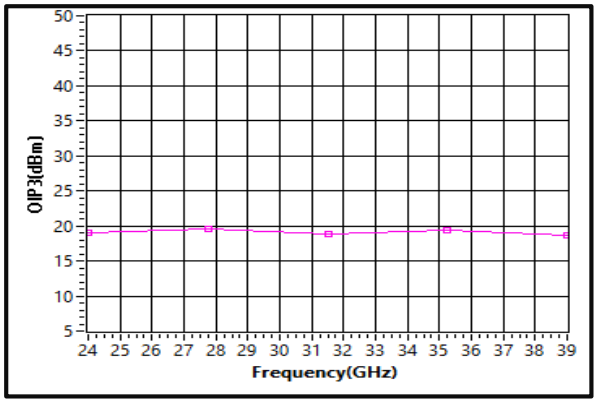
P1dB vs. Frequency



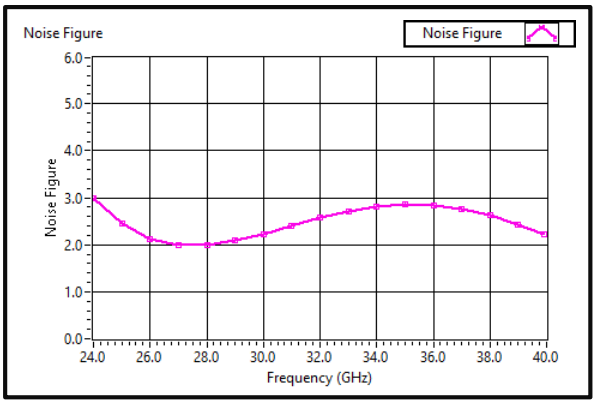
P3dB vs. Frequency



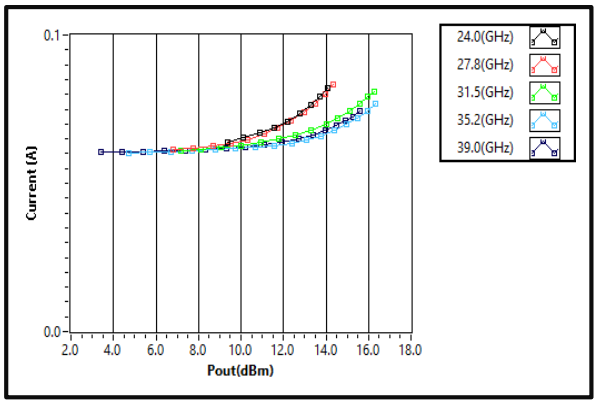
OIP3 vs. Frequency

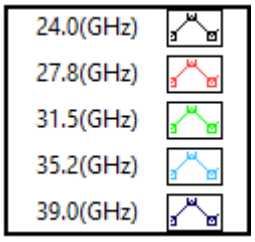


Noise Figure vs. Frequency

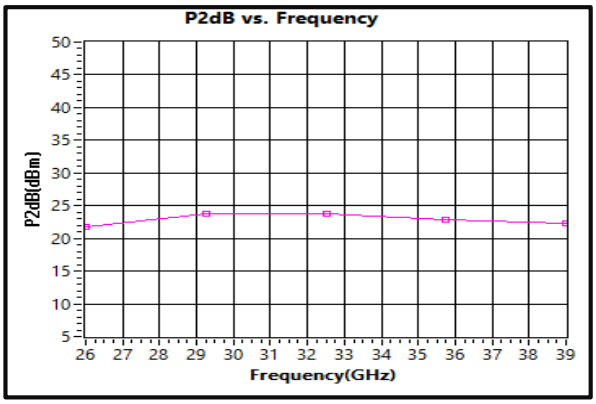


Current vs. Pout

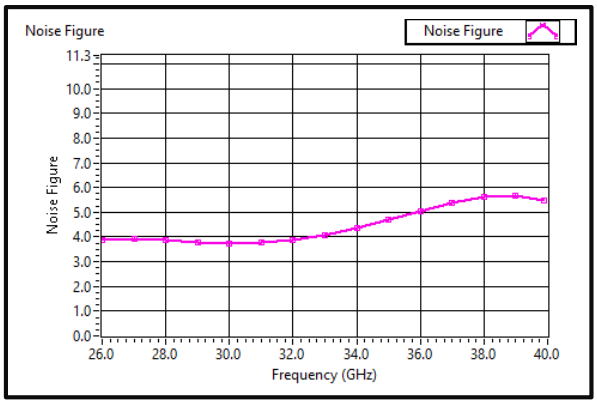




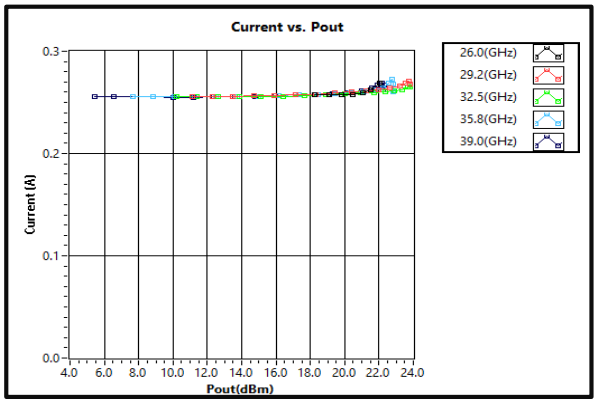
P2dB vs. Frequency



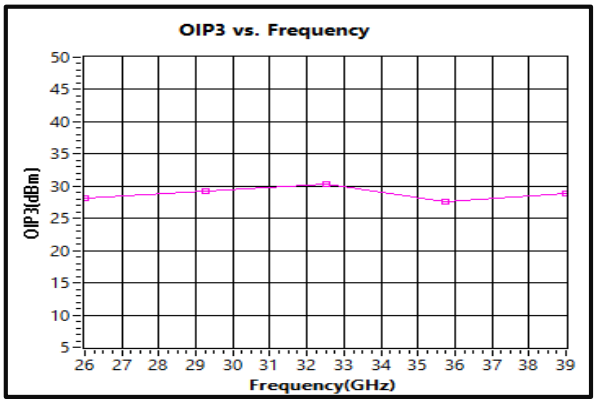
Noise Figure vs. Frequency

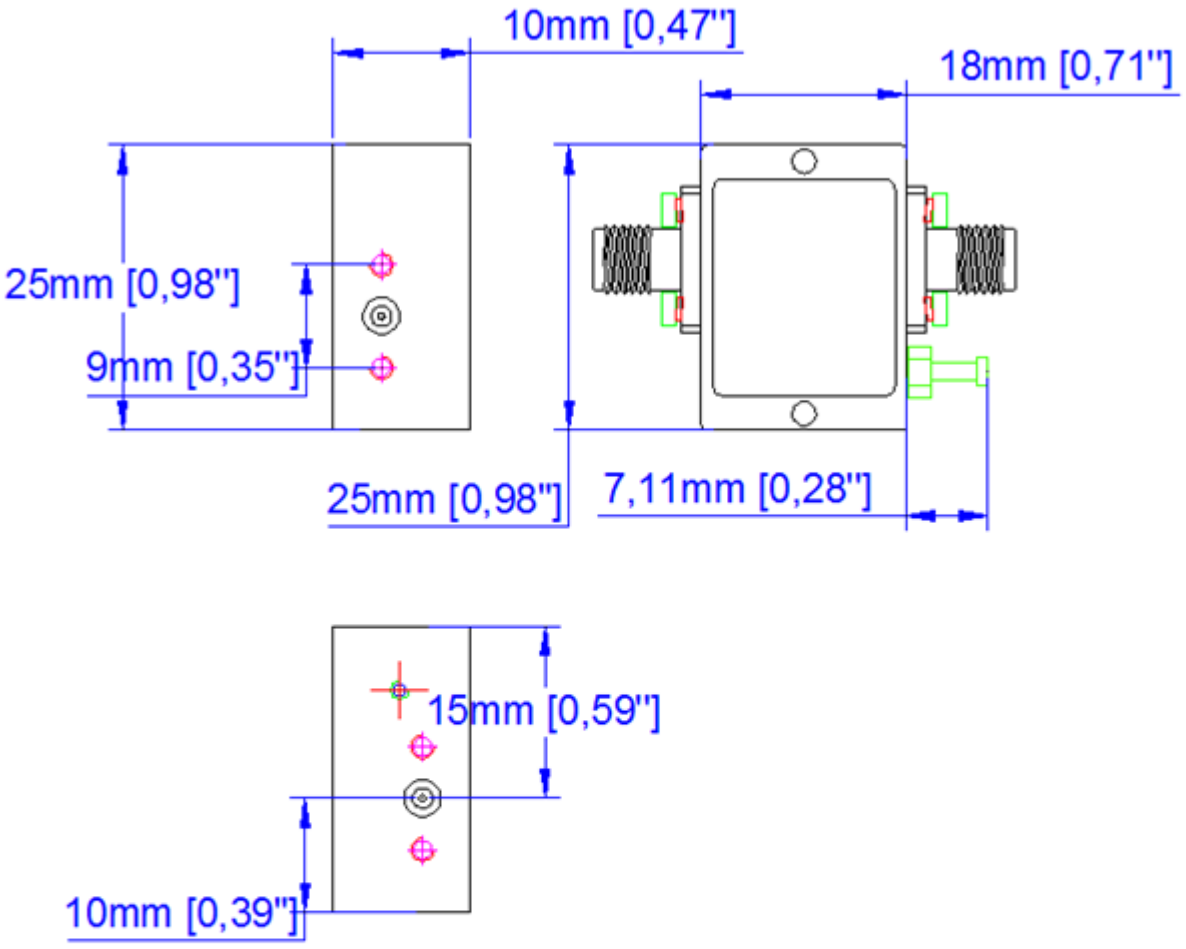


Current vs. Pout



OIP3 vs. Frequency





Heat Sink required during operation.

Important Notice

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