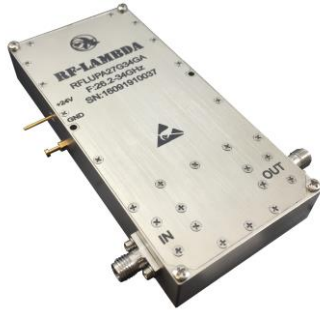


## Solid State Power Amplifier 32GHz~38GHz



### Features

- Wideband Solid State Power Amplifier
- Psat: + 35dBm
- Gain: 32 dB
- Supply Voltage: +24V

### Typical Applications

- Wireless Infrastructure
- Military & Aerospace Applications
- Test and Measurement

Electrical Specifications,  $T_A = +25^{\circ}\text{C}$ ,  $V_{CC} = +24\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	32 – 34		35 – 38				GHz
Gain		30			32		dB
Gain Flatness		±10			±10		dB
Gain Variation Over Temperature (-45°C ~ +85°C)		±3			±3		dB
Input Return Loss		5			10		dB
Output Return Loss		12			15		dB
Saturated Output Power (Psat)		35			35		dBm
Supply Current (+24 VDC)		1000	2000		1000	2000	mA
Isolation S12		70			70		dB
Input Max Power	Psat – Gain		Psat – Gain				dBm
Weight	≈ 650						g
Impedance	50						Ohms
Input / Output Connectors	2.92-Female						
Finish	Nickel Plated						
Material	Aluminum / Copper						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

\* P1dB, P3dB and Psat power test signal: 200µs pulse width with 10% duty cycle.

\* For average CW power testing or increased duty cycle, a 5dB back off from Psat is required unless water/oil cooling system is applied.

Absolute Maximum Ratings	
Supply Voltage	+28Vdc
RF Input Power (RFIN) Pin_max = Psat - Gainsat	Psat – Gain

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 Ground
Step 2	Connect input and output with 50 Ohm source/load. ( in band VSWR<1.9:1 or >10dB return loss)
Step 3	Connect +24V
Power OFF Procedure	
Step 1	Turn off +24V
Step 2	Remove RF Connection
Step 3	Remove Ground

**Environmental Specifications and Test Standards**

Parameter	Description
Operational Temperature	-40°C~+50°C (Case Temperature Less Than 85°C)
Storage Temperature	-50°C~+125°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)

**Solid State Power Amplifier 32GHz-38GHz**

Ordering Information	
Part No.	Description
RFLUPA32G38GA	32GHz~38GHz Power 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.

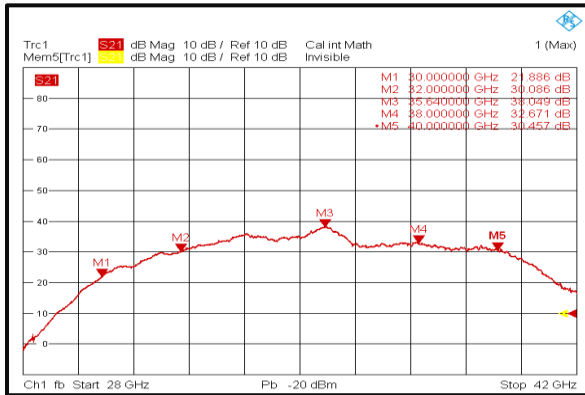
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

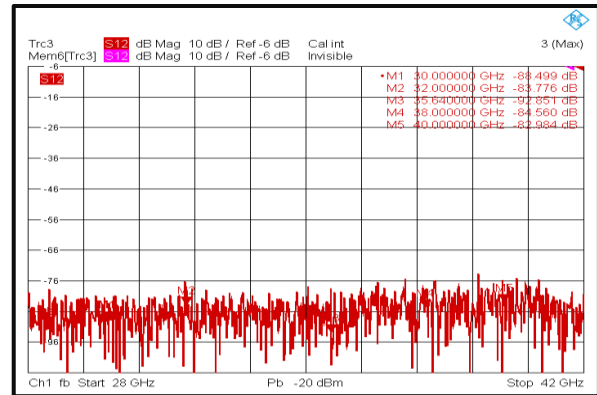
Each of RF-Lambda amplifiers will go through power and temperature stress testing. Due to fragility of the die, IC or MMIC, those are not covered by warranty. Any damage to those will NOT be free to repair.

Typical Performance Plots

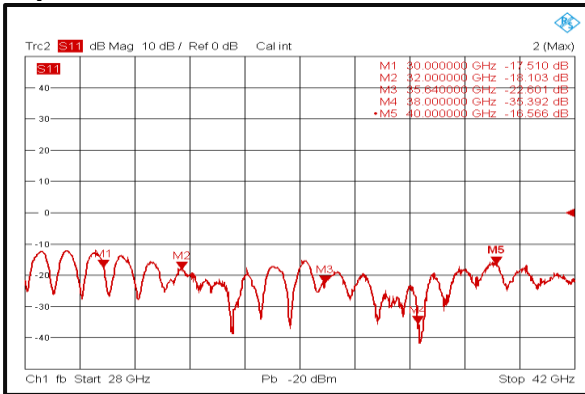
**Gain vs. Frequency**



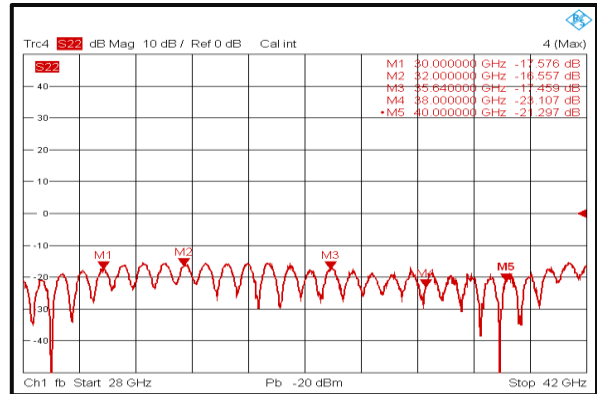
**Isolation**



**Input Return Loss**



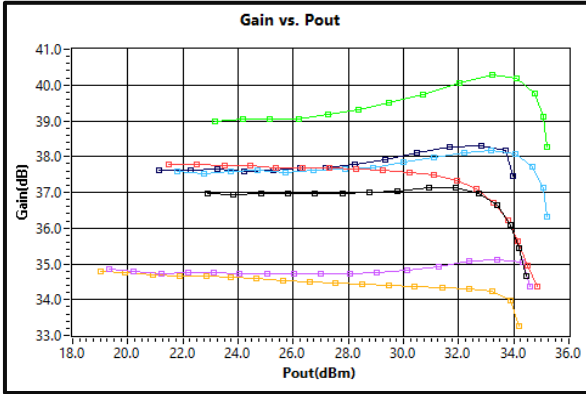
**Output Return Loss**



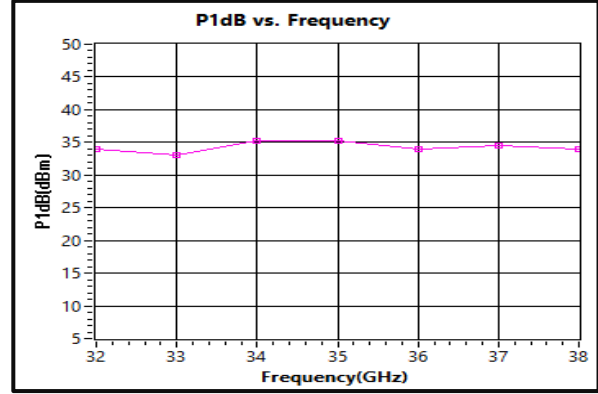
**Note: Input / Output return loss measurements include attenuators to protect equipment**

**Solid State Power Amplifier 32GHz-38GHz**

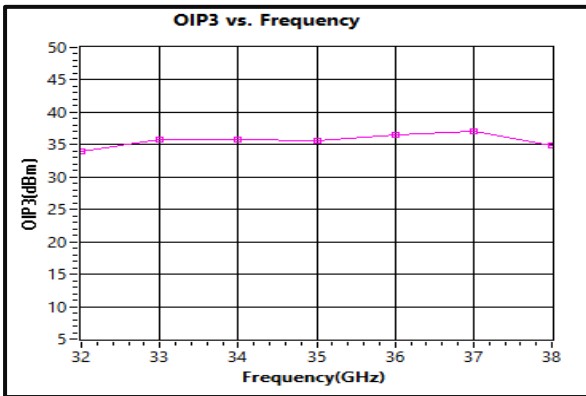
**Gain vs. Output Power**



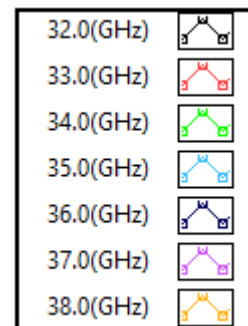
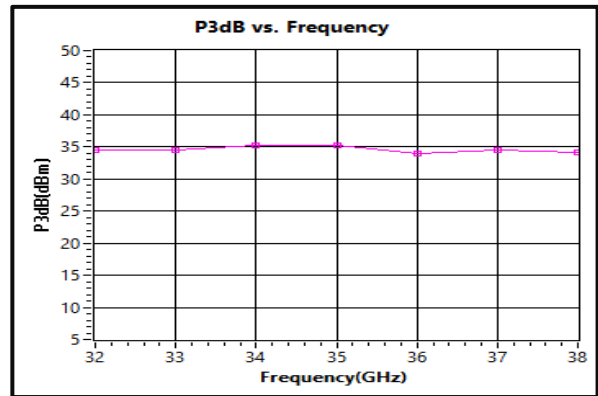
**P1dB vs. Frequency**



**Output Third Order Intercept (IP3)**

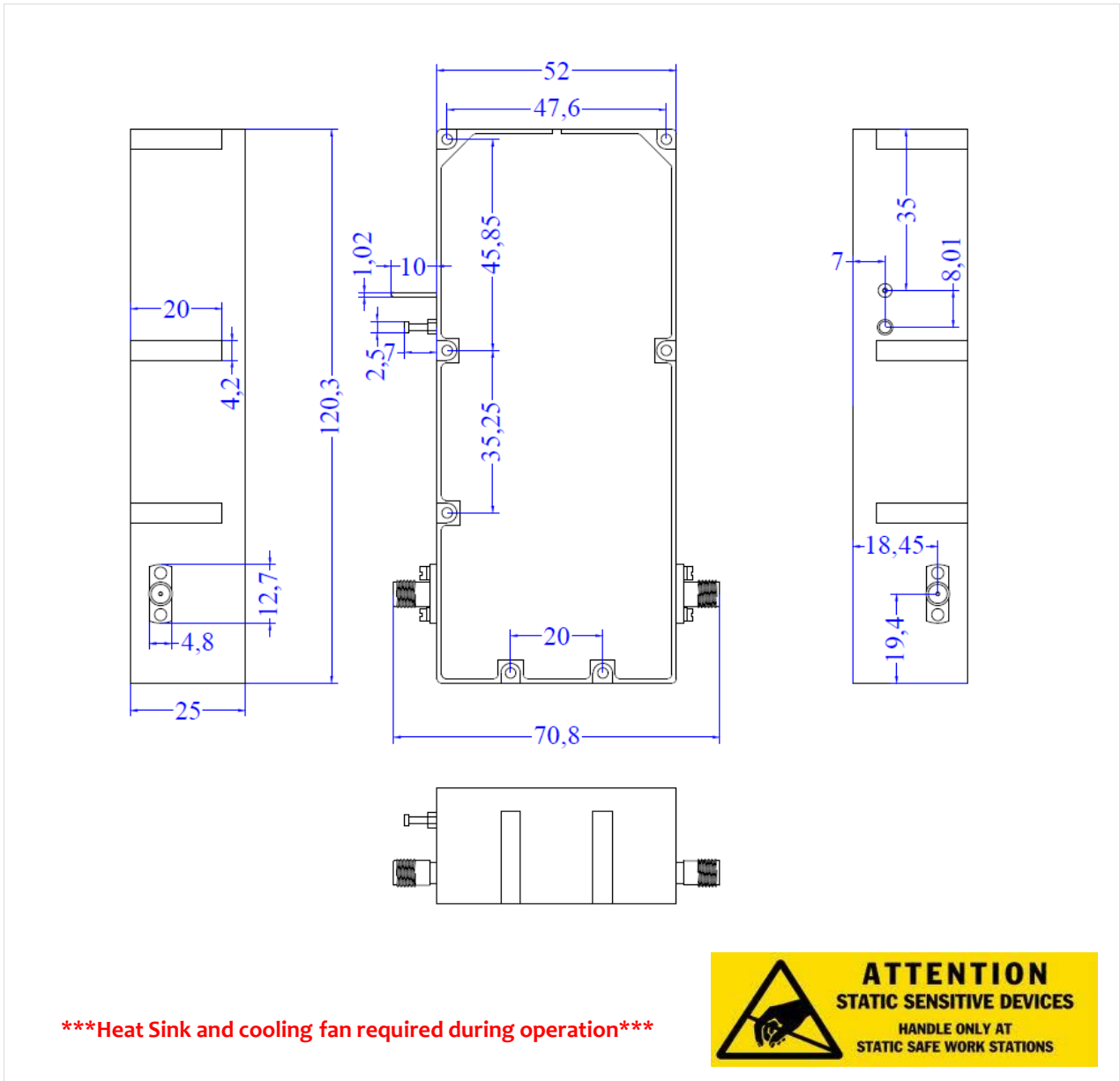


**P3dB vs. Frequency**



**Outline Drawing:**

All Dimensions in mm



**Solid State Power Amplifier 32GHz-38GHz**

**Important Notice**

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