



2W Ultra Wide Band Power Amplifier 18GHz~47GHz

- High output power
- Microwave radio systems
- Satellite VSAT and DBS systems
- LMDS & Pt-Pt mmW Long Haul
- 802.16 & 802.20 WiMax BWA
- High Linearity and low noise figure
- All specifications can be modified upon request



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

| Parameter | Min. | Typ. | Max. | Min. | Typ. | Max. | Units |
|--|---------------------------------------|------|-------------|------|------|------|-------|
| Frequency Range | 18 – 30 | | 30 – 47 | | | | GHz |
| Gain | | 35 | | | 33 | | dB |
| Gain Flatness | | ±7 | | | ±5 | | dB |
| Gain Variation Over Temperature(-45 ~ +85) | | ±3 | | | ±3 | | dB |
| Noise Figure | | 13 | | | 13 | | dB |
| Input Return Loss | | 9 | | | 8 | | dB |
| Output Return Loss | | 10 | | | 10 | | dB |
| Output Power for 3 dB Compression (P3dB) | | 31.5 | | | 31.5 | | dBm |
| Output Third Order Intercept (IP3) | | 34 | | | 33 | | dBm |
| Supply Current (+12 VDC) | | 2200 | 4000 | | 2200 | 4000 | mA |
| Isolation S12 | 79 | 85 | | 76 | 86 | | dB |
| Input Max Power(no damage) | Psat – Gain | | Psat – Gain | | | | dBm |
| Weight | 1000 | | | | | | g |
| Impedance | 50 | | | | | | Ohms |
| Input /Output Connector | 2.4mm-Female (2.92mm female optional) | | | | | | |
| Finishing | Nickel Plating | | | | | | |
| Material | Aluminum/copper | | | | | | |

* 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.

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RF-LAMBDA

The power beyond expectations

RFLUPA18G47GD

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| Absolute Maximum Ratings | |
|--|-------------|
| Supply Voltage | +28Vdc |
| RF Input Power (RFIN) Pin _{max} = Psat - Gainsat | Psat – 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 ground pin |
| Step 2 | Connect input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss) |
| Step 3 | Connect +12V |
| Power OFF Procedure | |
| Step 1 | Turn off +12V |
| Step 2 | Remove RF connection |
| Step 3 | Remove Ground. |

| Environment 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 |

Note: The operating temperature for the unit is specified at the package base. It is the user's responsibility to ensure the part is in an environment capable of maintaining the temperature within the specified limits

| Ordering Information | | |
|----------------------|-------|-----------------------------|
| Part No | ECCN | Description |
| RFLUPA18G47GD | EAR99 | 18GHz~47GHz 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.

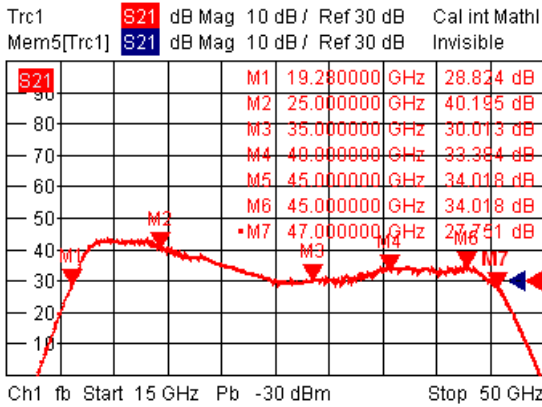
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

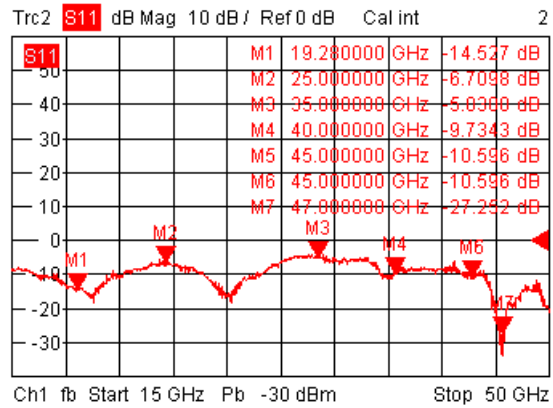
Each of RF-Lambda amplifiers will go through power and temperature stress testing. Due to fragile of the die, IC or MMIC, those are not covered by warranty. Any damage to those will NOT be free to repair.



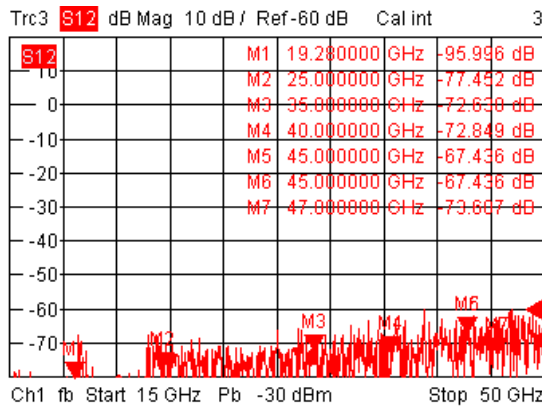
Gain



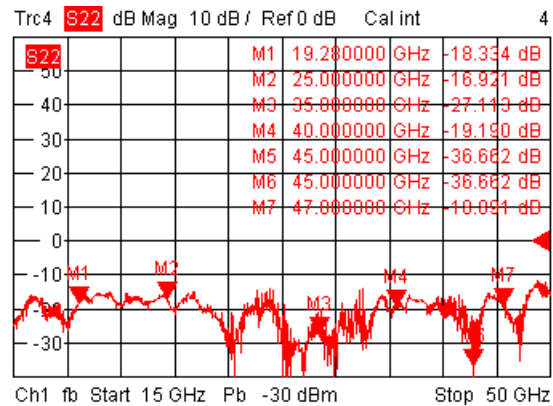
Input Return Loss



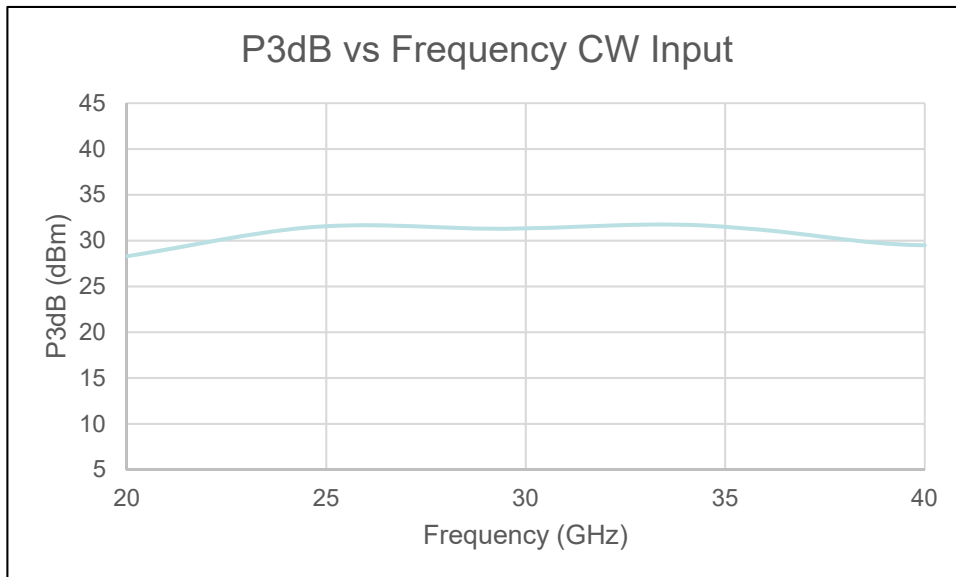
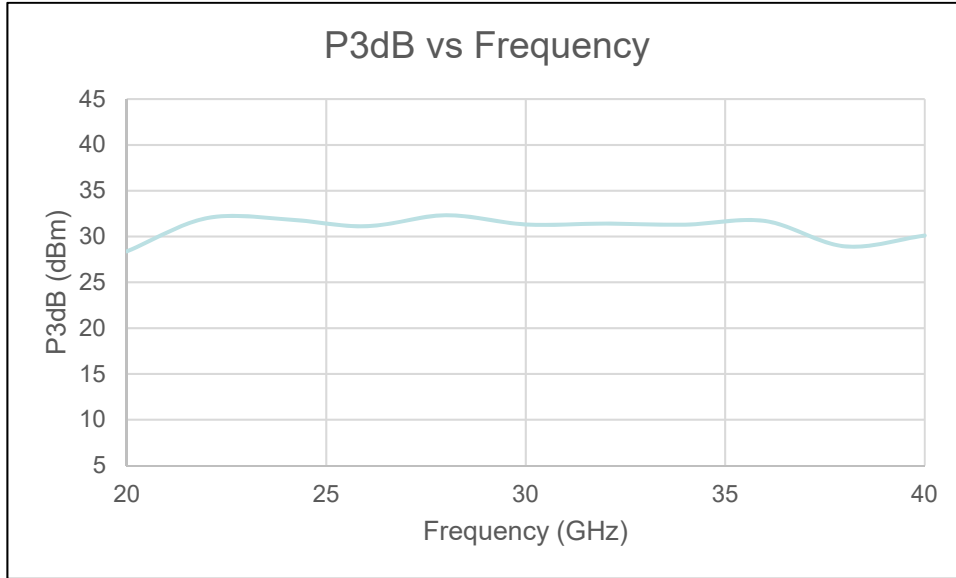
Isolation



Output Return Loss



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



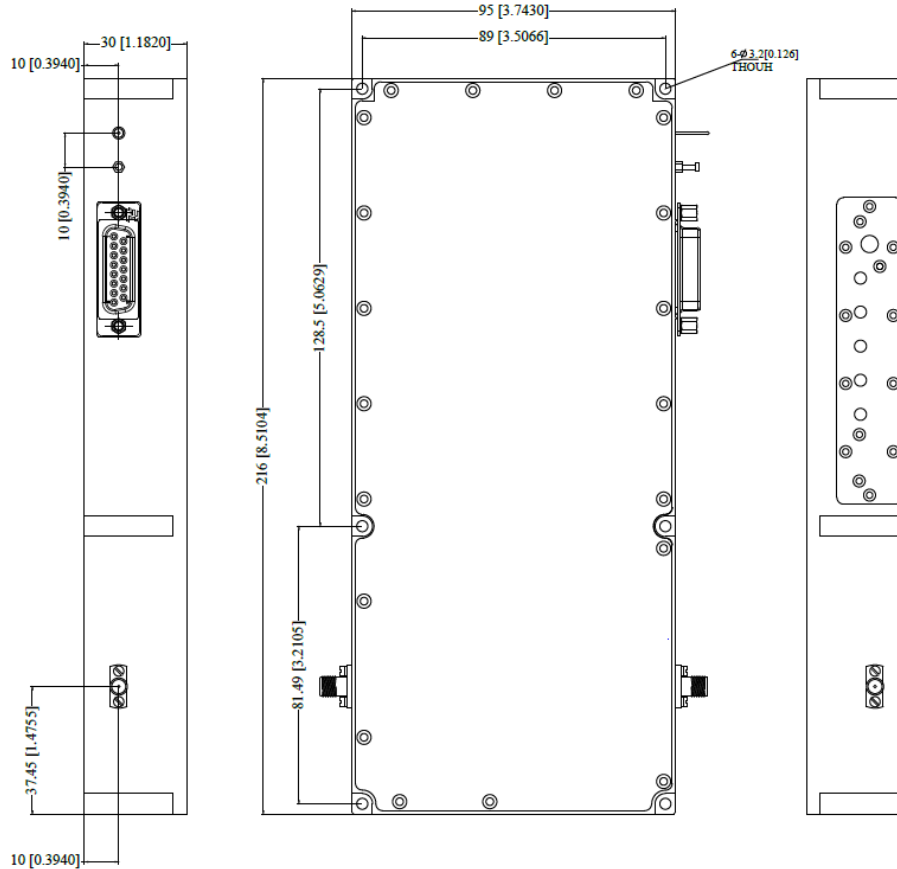


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*****Heat Sink and cooling fan required during operation*****



Important Notice

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