Wide Band Solid State Power Amplifier
37GHz ~ 43GHz

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

Features

- Solid State Power Amplifier
- Gain: 50dB typical
- Output Power: +43dBm typical
- Supply Voltage: +48V

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications, TA = +25°C, Vcc = +48V

Parameter	Min.	Typ.	Max.	Units
Frequency Range	37		43	GHz
Gain	48	50		dB
Gain Flatness		±4.0		dB
Gain Variation Over Temperature (-40°C~+70°C)		±3.0		dB
Input VSWR		2.0		: 1
Output 1dB Compression Point (P1dB)		38		dBm
Saturated Output Power (Psat) CW		43		dBm
IM3		-30		dBc
Isolation S12		-65		dB
Supply Current (Vcc=+48V)		5	10	A
Amplifier Weight	/			ounces
Weight (Including Heat sink)	/			ounces
Impedance	50			Ohms
Input / Output Connectors	Input 2.4mm-Female/ Output WR22			
Finish	Nickel Plated			
Material	Aluminum / Copper			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

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Absolute Maximum Ratings

Operating Voltage	+50V
RF Input Power	+5dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +48V biasing
Power OFF Procedure	
Step 1	Turn off +48V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40℃~+70℃ (Case Temperature)
Storage Temperature	-50℃~+105℃
Thermal Shock	-40℃ → +85℃ (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℃ 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)

Ordering Information

Part No.	Description
RFLUPA37G43GDS	37-43GHz 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.

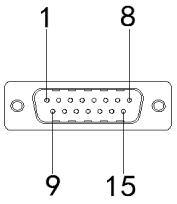
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

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

What is not covered with warranty?

Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

User Control Connector

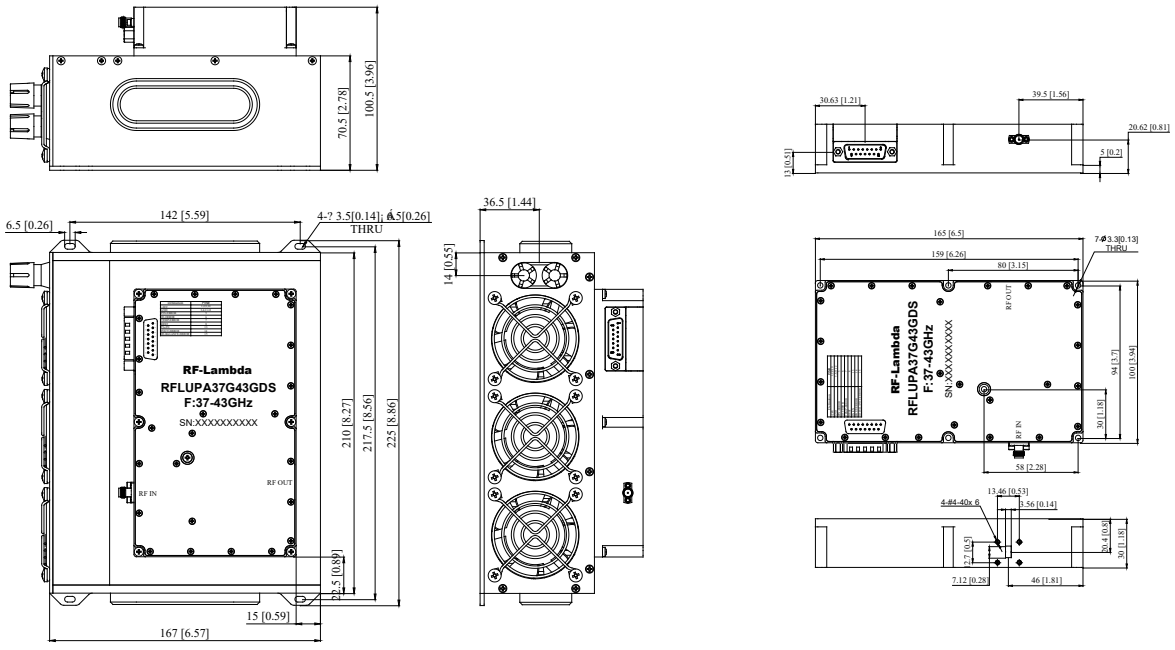


Pin #	Name	Function	Initial State	Description	Applied
1	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
2	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
3	GND	Ground	GND	Ground	Yes
4	GND	Ground	GND	Ground	Yes
5	RF IN Over	Indicator	LOW	Pin will be latched to logic HIGH when input signal is over limit	Yes
6	Current Over	Indicator	LOW	Pin will be latched to logic HIGH when drain current limit is reached	Yes
7	Temp Over	Indicator	LOW	Pin will be latched to logic HIGH when amplifier is driven over temperature	Yes
8	Reset	Control		Resets PA when logic LOW is applied and released	
9	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
10	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
11	GND	Ground	GND	Ground	Yes
12	GND	Ground	GND	Ground	Yes
13	PA EN	Control		Applying logic HIGH to open amplifiers	Yes
14	RF Out Error	Indicator	LOW	Pin will be latched to logic HIGH when output reflection is over limit	Yes
15	ID Imbalance	Indicator	LOW	Pin will be latched to logic HIGH when an imbalance in the drain current of the combining branches occurs	Yes

HIGH/LOW voltages are standard TTL signals:
0.0V-0.8V = LOW
2V-5V = HIGH

Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

Important Notice

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