

## Wide Band Power Amplifier 0.7GHz~6GHz



### Features

- Wide Band Power Amplifier
- Gain: 48dB typical
- Output power +45dBm typical

### Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test and Measurement

Electrical Specifications,  $T_A = +25^\circ\text{C}$ ,  $V_{CC} = +28\text{V}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.7		3	3		6	GHz
Gain		48			48		dB
Gain Flatness		$\pm 2.5$			$\pm 2.5$		dB
Gain Variation Over Temperature (-40°C~+60°C)		$\pm 2.0$			$\pm 2.0$		dB
Input VSWR		1.6			1.6		: 1
Output 1dB Compression Point (P1dB)		43			43		dBm
Saturated Output Power (Psat)		45			45		dBm
Isolation S12		-55			-55		dB
Supply Current ( $V_{CC}=+28\text{V}$ )		0.8	5		0.8	5	A
Efficiency at P1dB		20			20		%
Weight	Amplifier	-- Max.					ounces
	Including Heat sink	-- Max.					ounces
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finish	Nickel Plated						
Material	Aluminum						
Package Sealing	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

**Absolute Maximum Ratings**

Operating Voltage (No RF Input)	+28.5V
RF Input Power (+28V)	+5dBm

**Biasing Up Procedure**

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +28V biasing
Power OFF Procedure	
Step 1	Turn off +28V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

**Environmental Specifications and Test Standards**

Parameter	Description
Operational Temperature	-40°C~+60°C (Case Temperature)
Storage Temperature	-50°C~+105°C
Thermal Shock	-40°C → +60°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)

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**Ordering Information**

Part No.	Description
RFLUPA0706G40C	0.7-6GHz 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.

**Interface Connector**

D-sub 15 (Male)					
Pin #	Name	Function	Initial State	Description	Applied
1	Reset	Control	/	Resets PA when logic LOW is applied and released	Yes
2	PA Enable / Disable	Control	High	Amplifier Disable , TTL Logic Low	Yes
3	Over Temp	Indicator	Low	Pin will be latched to logic HIGH when Temperature signal is over limit	Yes
4	RF Input Over drive	Indicator	Low	Pin will be latched to logic HIGH when input signal is over limit	Yes
5	Over VSWR	Indicator	Low	Pin will be latched to logic HIGH when output reflection is over limit	Yes
6	GND	Ground	Low	Ground	Yes
7	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
8	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
9	Over Current	Indicator	Low	Pin will be latched to logic HIGH when drain current limit is reached	Yes
10	Current imbalance	Indicator	Low	Pin will be latched to logic HIGH when Current imbalance	Yes
11	Temperature signal	Indicator	/	The voltage value decreases with the increase of temperature	Yes
12	GND	Ground	GND	Ground	Yes
13	GND	Ground	GND	Ground	Yes
14	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes
15	+28V	Power Supply	+28V	+28V DC is supply Voltage	Yes

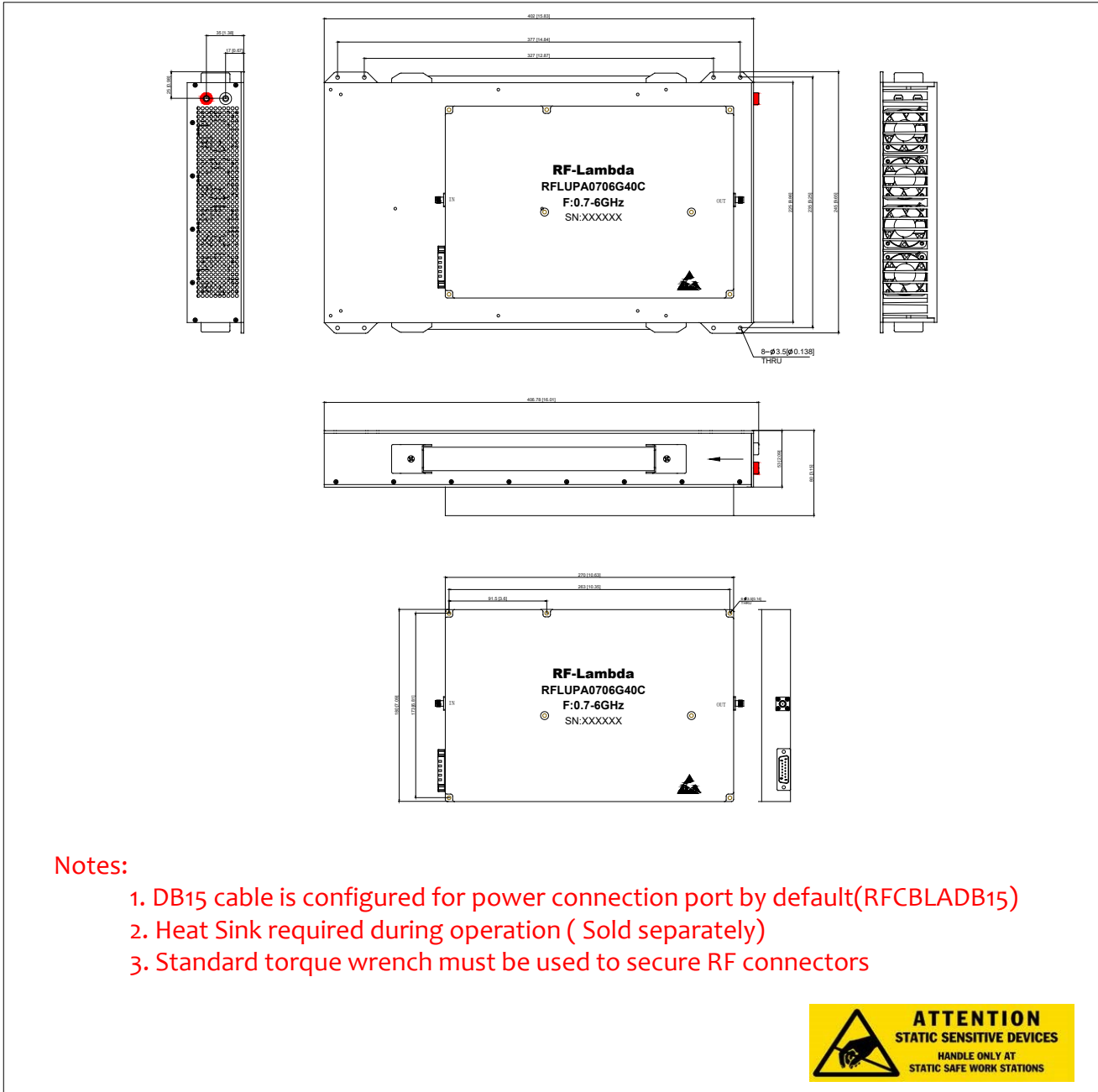
**Notes:**

1. 0V-0.8V is logic LOW.
2. 2V-5V is logic HIGH.

**Outline Drawing:**

All Dimensions in mm [inches]

Housing Tolerances  $\pm 0.2$  [0.008]



**Notes:**

1. DB15 cable is configured for power connection port by default(RFCBLADB15)
2. Heat Sink required during operation ( Sold separately)
3. Standard torque wrench must be used to secure RF connectors

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