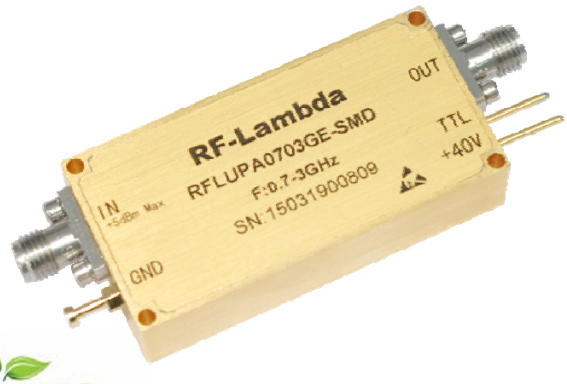
Wide Band Power Amplifier 0.7GHz~3GHz



Feature

- Gain: 38dB Typical
- Output power + 38dBm Typical
- High P1dB: + 35 dB m Full Band
- 50 Ohm Matched Input / Output
- Size: 2" x 1" x 0.472"

Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace
- Test Instrument
- Fiber Optics

RoHS Compliant

Electrical Specifications, TA = +25 ° C, With DC = +40V, TTL=+5V,50 Ohm System

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.7		3	GHz
Gain	35	38		dB
Gain Flatness		±1.5		dB
Gain Variation Over Temperature(-45 ~ +85)		±3.0		dB
Input Return Loss	10	16		dB
Output Return Loss	10	12		dB
Output Power for 1 dB Compression (P1dB)	35	36		dBm
Saturated Output Power (Psat)		38		dBm
Output Third Order Intercept (IP3)		45		dBm
Reference Supply Current (Idd) (Vdd=+40V, *TTL=+5V*)		400	1000	mA
The turn-on time (TTL=+5V)			0.5	us
The turn-off time (TTL=0V)			1.5	us
Efficiency at P1dB		/		%
Isolation S12	50	65		dB
Input Max Power(no damage)			+5	dBm
Weight	60			g
Impedance	50			Ohms
Input /Output Connector	SMA-Female			
Finishing	Gold Plating			
Material	Aluminum/copper			
Package Sealing	Epoxy Sealing			

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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.

Absolute Maximum Ratings

Operating Voltage	DC +42V
TTL	DC +5V
RF Input Power	+5dB m
Operating Temperature(C°)	-45 to +85 °C
Storage Temperature(C°)	-50 to+125 °C

Biasing Up Procedure

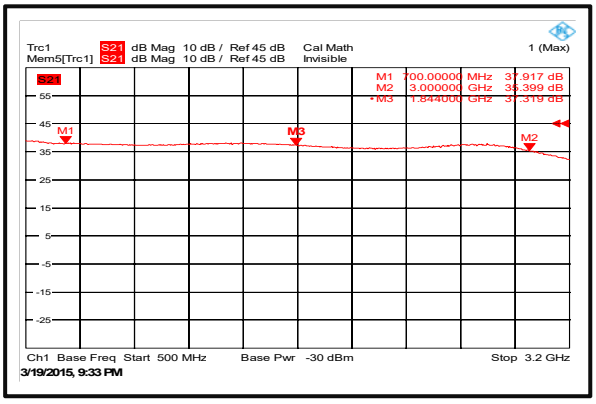
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +40V
Power OFF Procedure	
Step 1	Turn off +40V
Step 2	Remove RF connection
Step 3	Remove Ground.

Environment specifications

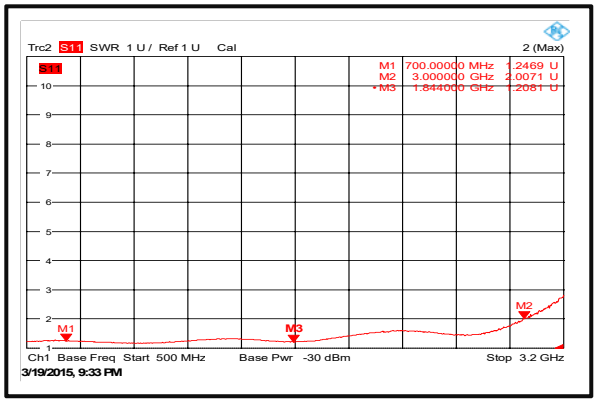
Operational Temperature (C°)	-45 to +85
Storage Temperature (C°)	-50 to +125
Altitude	30,000 ft. (Epoxy Seal Controlled environment)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msc half sin wave,3 axis both directions

Typical Performance Plots

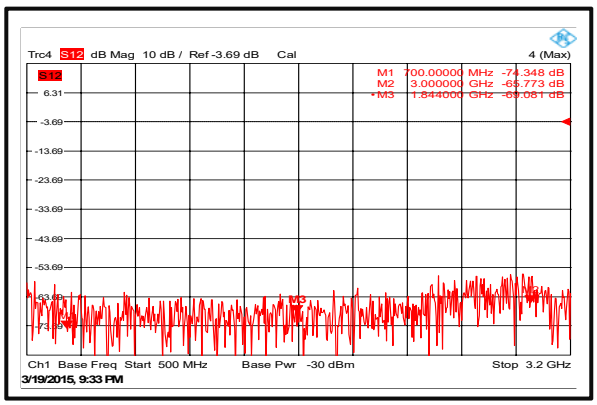
Gain



Input VSWR



Isolation



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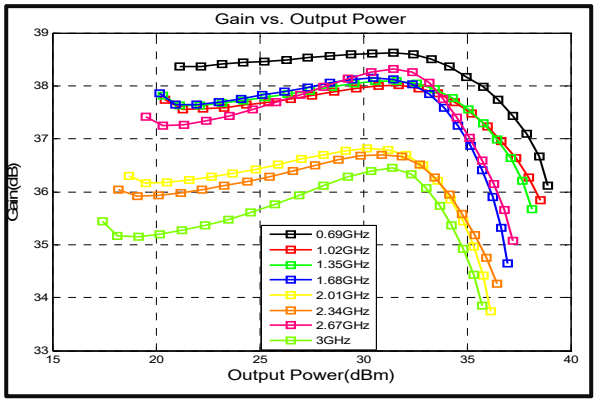
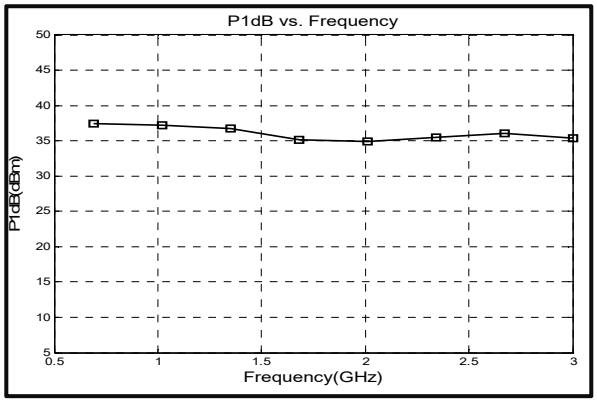
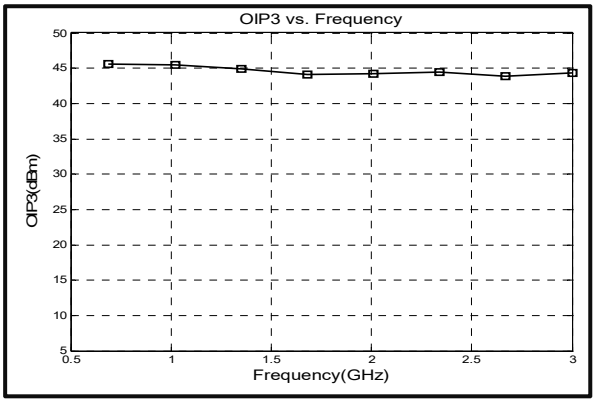
Cain vs. output power



P1dB vs. Frequency

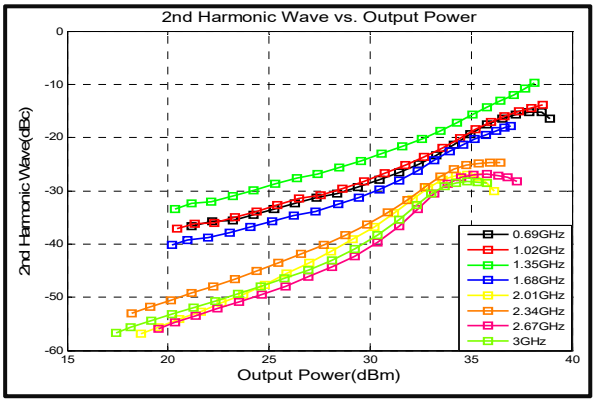


Output Third Order Intercept (IP3)

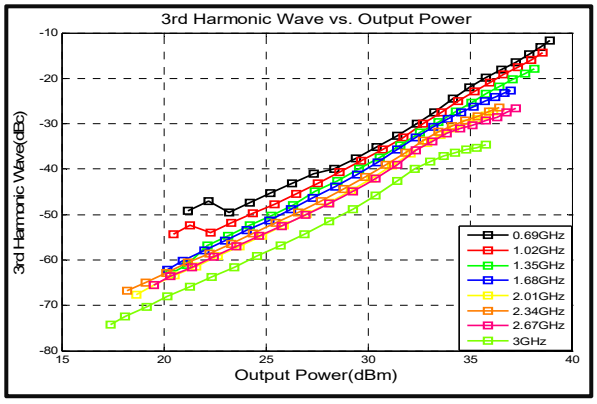


Current

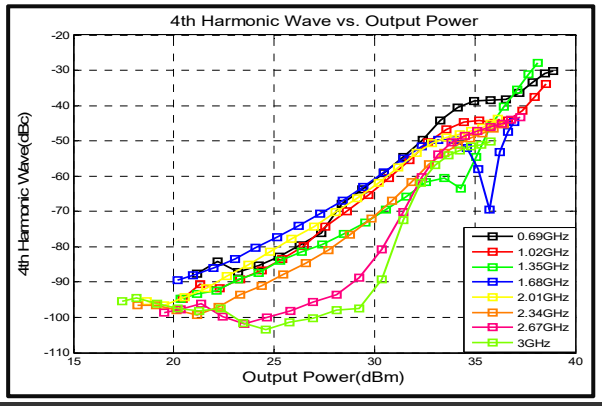
2nd Harmonic Wave output Power



3th Harmonic Wave output Power



4th Harmonic Wave output Power



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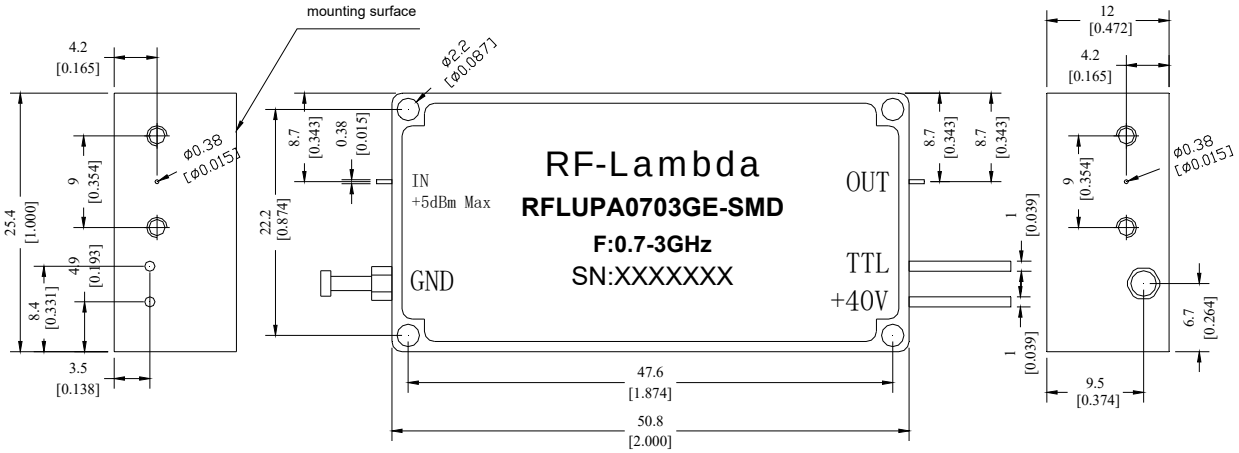
Outline Drawing:

All Dimensions in mm（inches）
Heat Sink required during operation



Ordering Information

Part No	ECCN	Description
RFLUPA0703GE-SMD	EAR99	0.7-3GHz Power Amplifier

Important Notice

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