



### 7W ACPR Emission Compressed Linear Power Amplifier 3GHz~6GHz



#### Features

- Gain: 40dB typical
- Output power +37dBm typical
- Supply Voltage: +28V

#### Typical Applications

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

Electrical Specifications,  $T_A = +25^\circ C$ ,  $V_{CC} = +24\sim 28V$

Parameter	Min.	Typ.	Max.	Units
Frequency Range	3		6	GHz
Gain	36	40		dB
Gain Flatness		±1.5		dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0		dB
Input VSWR		1.6	2.0	: 1
Output 1dB Compression Point (P1dB)	35	37		dBm
Saturated Output Power (Psat)		39		dBm
Isolation S12		-55		dB
Supply Current (Vcc=+28V)		650	1500	mA
Efficiency at P1dB		23		%
Input Max Power(no damage)		+8		dBm
Weight	6.35			ounces
Impedance	50			Ohms
Input / Output Connectors	SMA-Female			
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness			
	Option: Gold 80 micron; Nickel 180 micron thickness			
Material	Aluminum			
Package Sealing	Epoxy Sealed (Standard)			
	Hermetically Sealed (Option with extra charge)			

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**Absolute Maximum Ratings**

Operating Voltage	+29V
RF Input Power (RFIN)	+8 dBm

**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	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C (Case Temperature)
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883 (For Hermetically Sealed Units)



### 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.



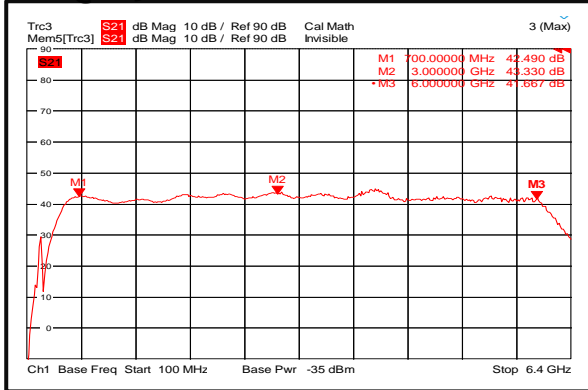
# RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

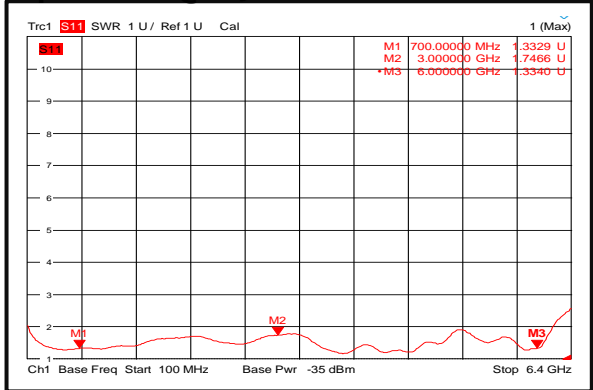
## RFLUPA0306GE

### Typical Performance Plots

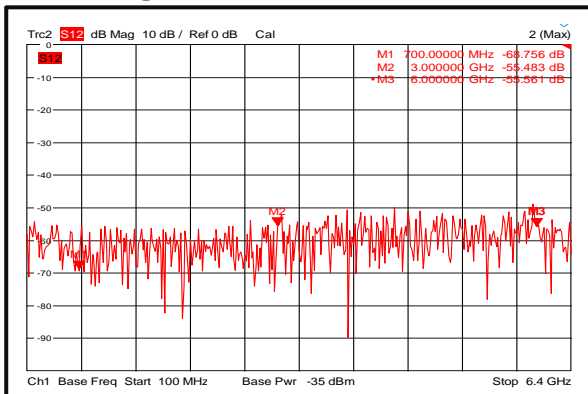
#### Gain@+25°C



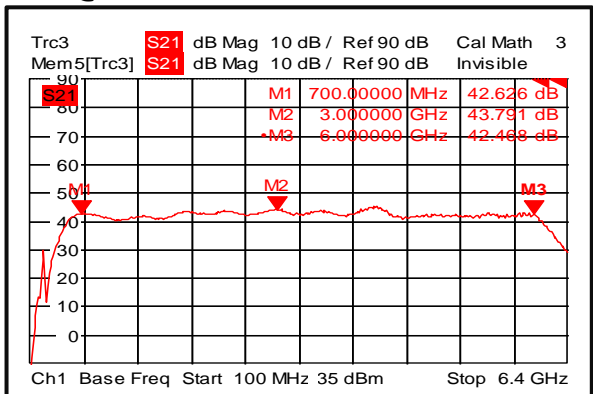
#### Input VSWR@+25°C



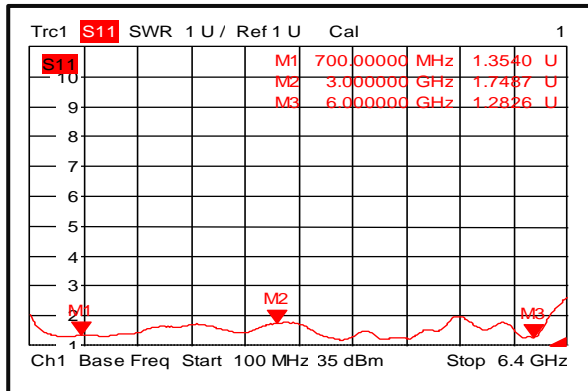
#### Isolation@+25°C



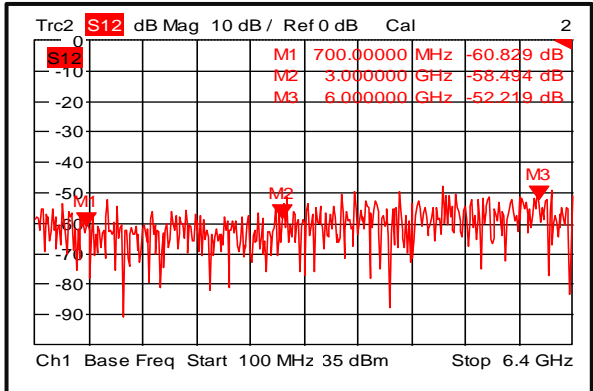
#### Gain@-45°C



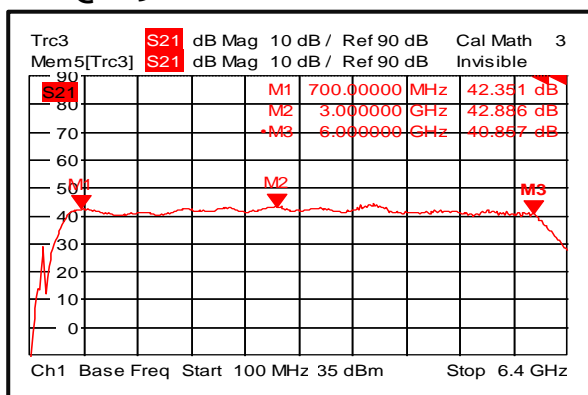
#### Input VSWR@-45°C



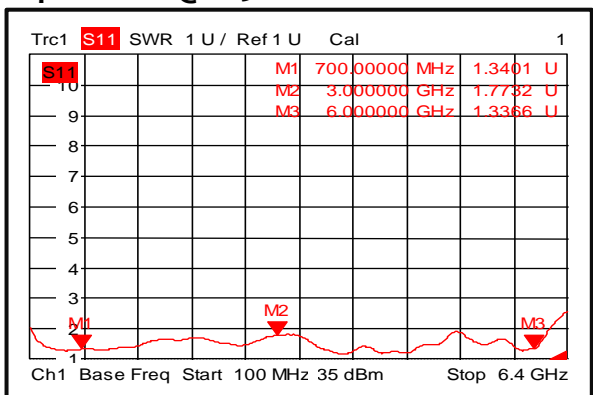
#### Isolation@-45°C



#### Gain@+85°C



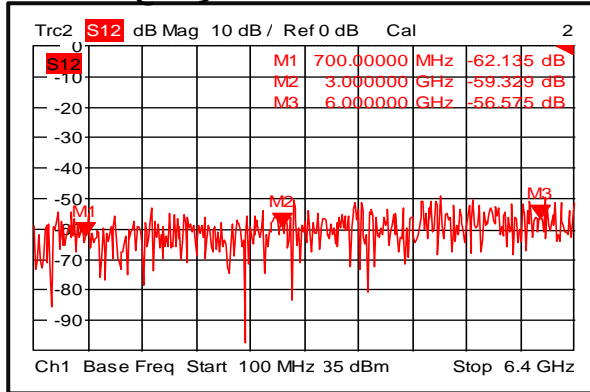
#### Input VSWR@+85°C



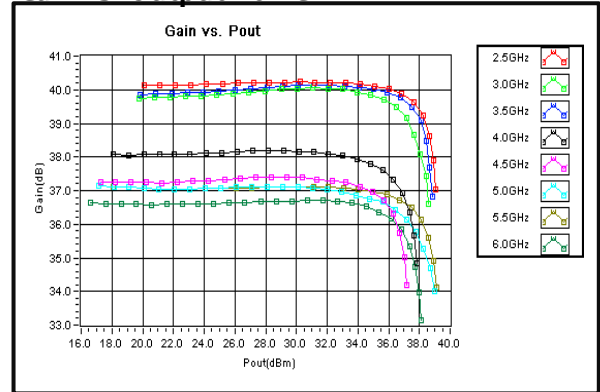
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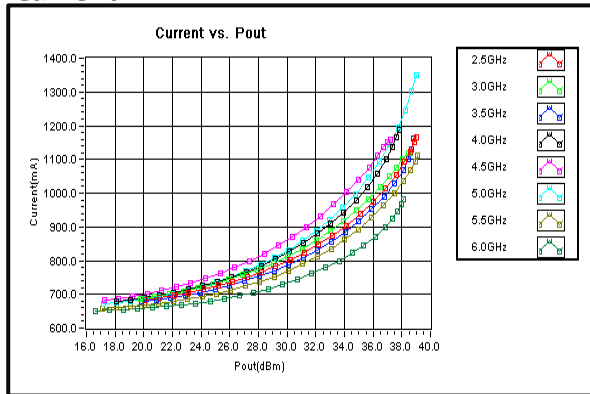
**Isolation@+85°C**



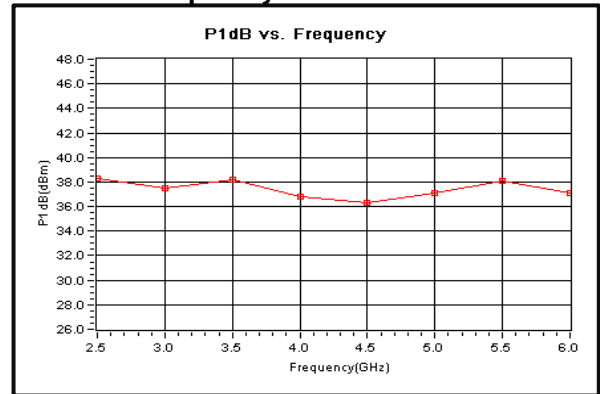
**Gain vs. Output Power**



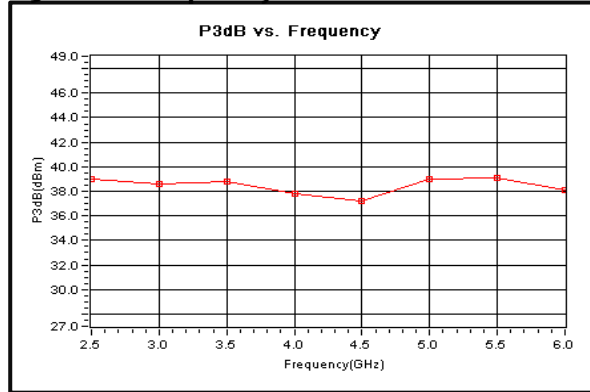
**Current**



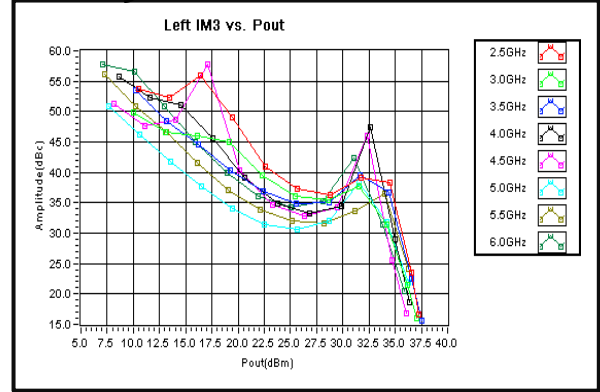
**P1dB vs. Frequency**



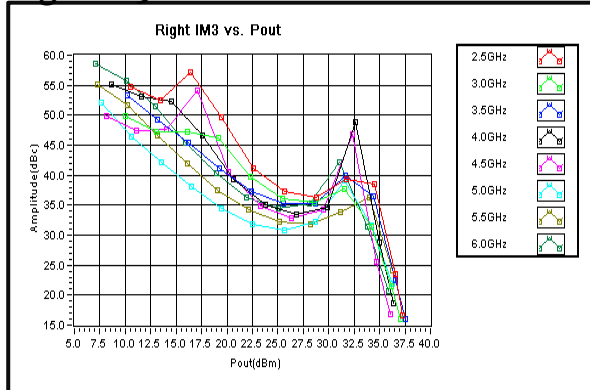
**P3dB vs. Frequency**



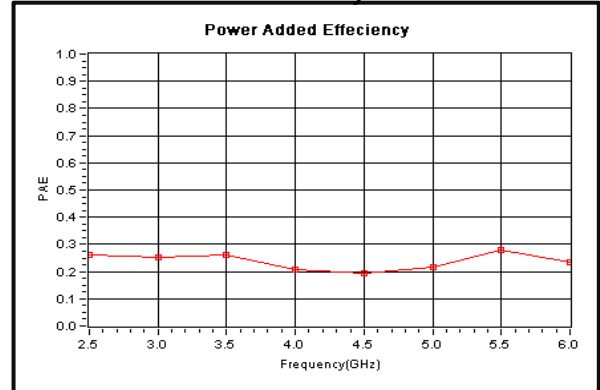
**Left IM3 vs. Pout**



**Right IM3 vs. Pout**



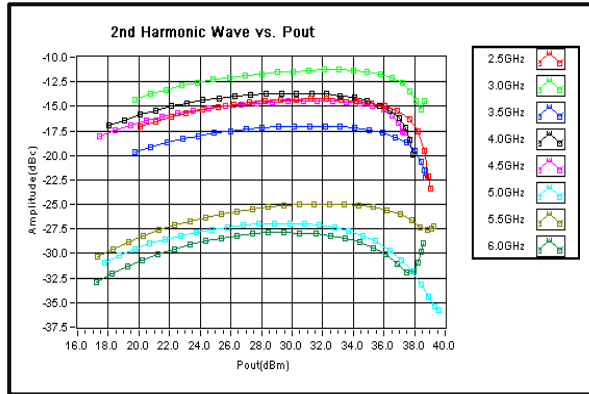
**Power Added Efficiency**



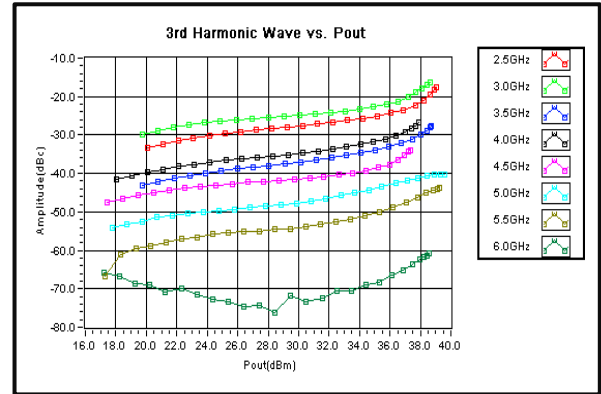
**7W AGPR Emission Compressed Linear Power Amplifier 3GHz~6GHz**



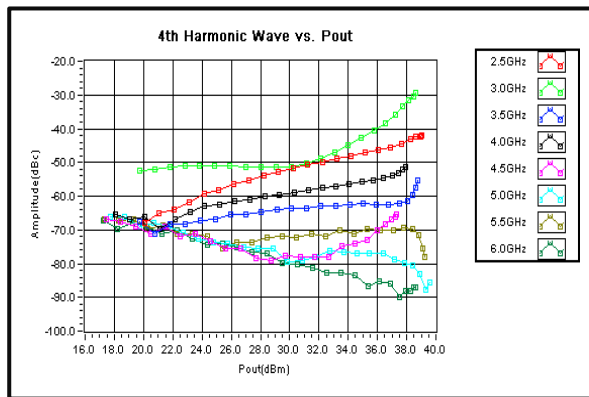
## 2nd Harmonic Wave Output Power



## 3rd Harmonic Wave Output Power



## 4th Harmonic Wave Output Power

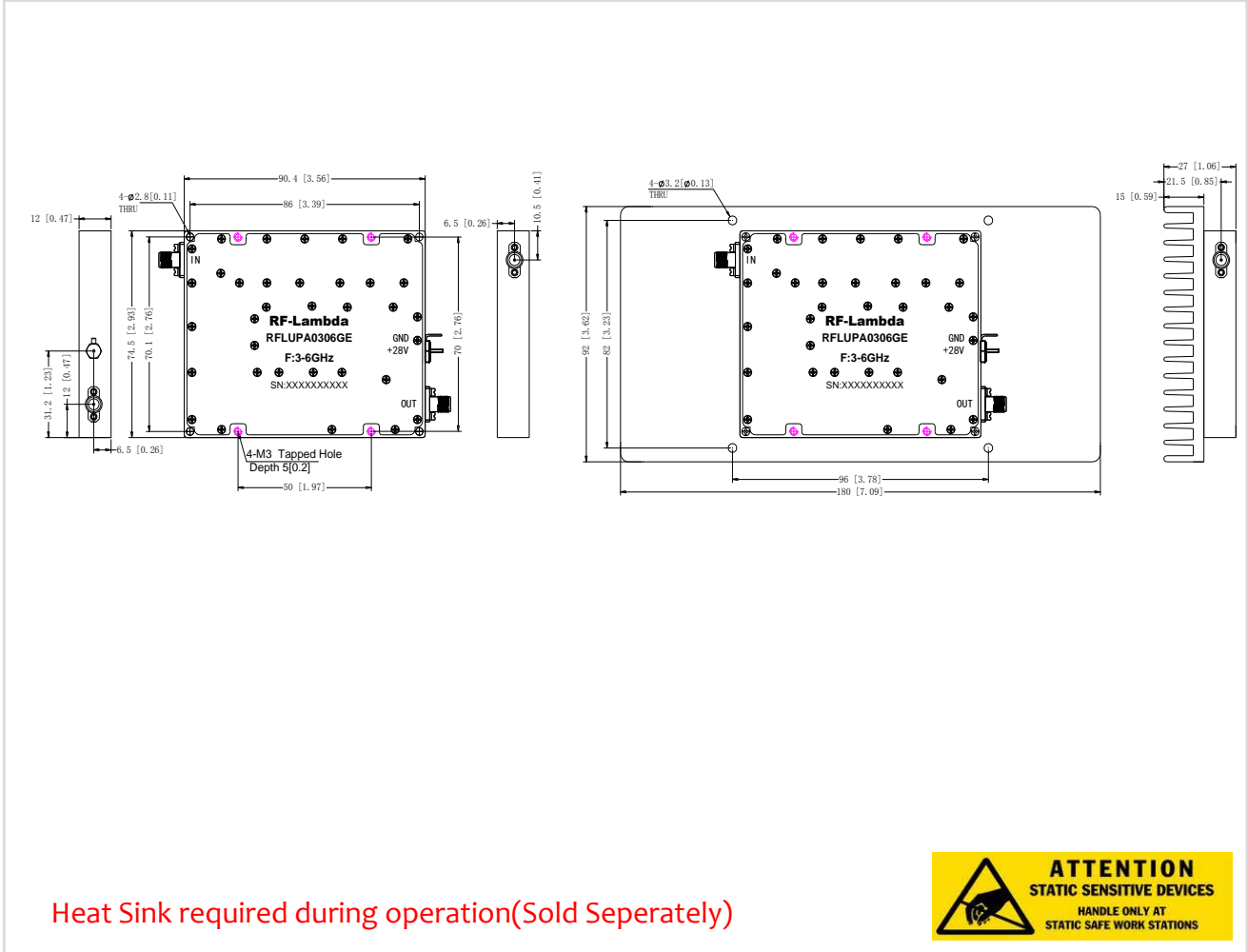


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**Outline Drawing:**

All Dimensions in mm [inches]



**7W AGPR Emission Compressed Linear Power Amplifier 3GHz~6GHz**

**Ordering Information**

Part No.	ECCN	Description
RFLUPA0306GE	EAR99	3-6GHz Power Amplifier

**Important Notice**

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