25W Power Amplifier 26.2GHz~34GHz

- High output power
- Aerospace and military application
- High Peak to average handle capability
- High Linearity and low noise figure
- All specifications can be modified upon request

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		26.2 -30			31 -34		GHz
Gain		65			50		dB
Gain Variation Over Temperature(-45 ~ +85)		±3			±3		dB
Input Return Loss		10			10		dB
Output Return Loss		15			15		dB
Saturated Output Power (Psat)		44			43.5		dBm
Output Third Order Intercept (IP3)		43			40		dBm
Supply Current (+24 VDC)		3000	8000		3000	8000	mA
Isolation S12		75			65		dB
Input Max Power(no damage)	Psat – Gain						dBm
Weight	3500						g
Impedance	50						Ohms
Power Supply Connector	D-SUB COMBO 3POS						
Input /Output Connector	2.92-Female						
Finishing	Nickel Plated Finish						
Material	Aluminum/copper						

* P1dB, P3dB and Psat power testing signal: 200μs pulse width with 10% duty cycle.
* For average CW power testing, a 5dB back off from Psat is required unless water/oil cooling system is applied.

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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 +24V
Power OFF Procedure	
Step 1	Turn off +24V
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
RFLUPA27G34GB	EAR99	26.2GHz~34GHz 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.

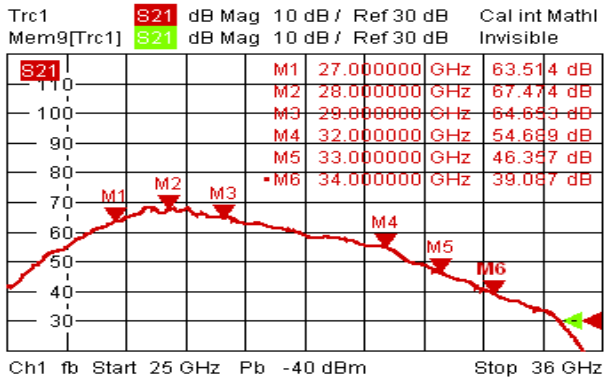
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

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

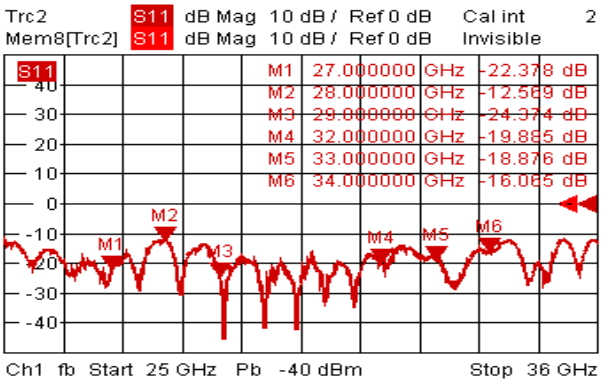
What is not covered with warranty?

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.

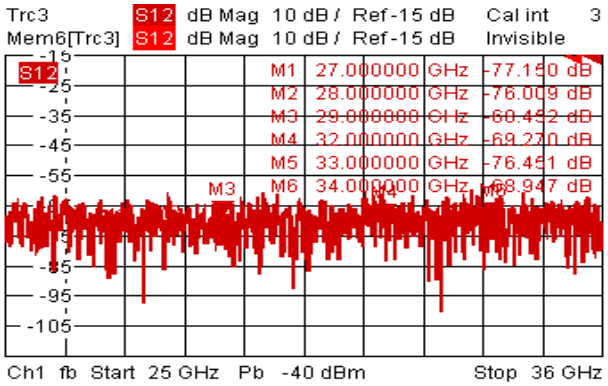
Gain



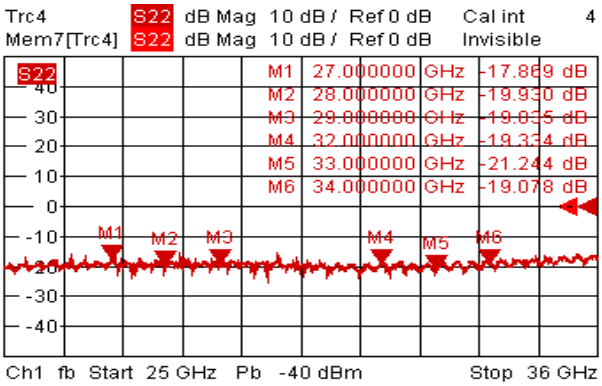
Input Return Loss



Isolation



Output Return Loss



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

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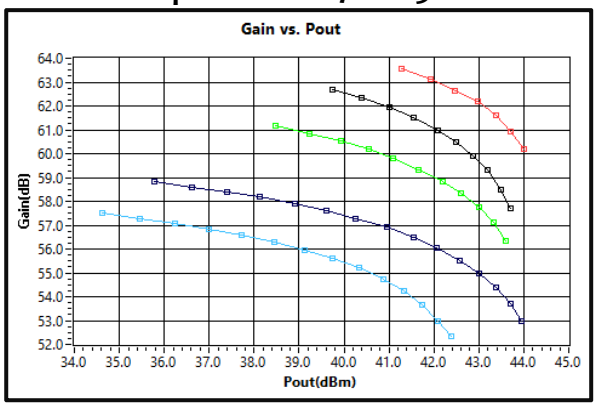
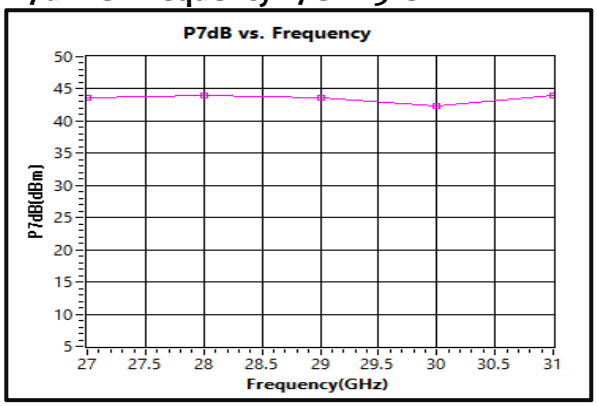
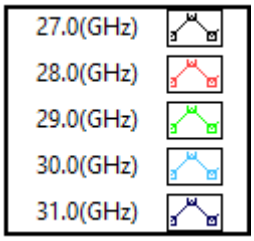
Gain vs. Output Power 27GHz-31GHz

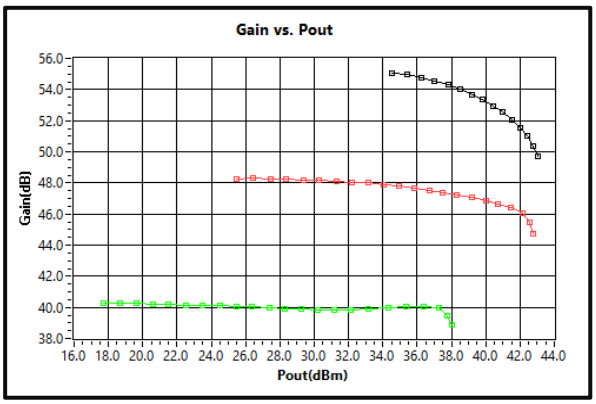


P7dB vs. Frequency 27GHz-31GHz

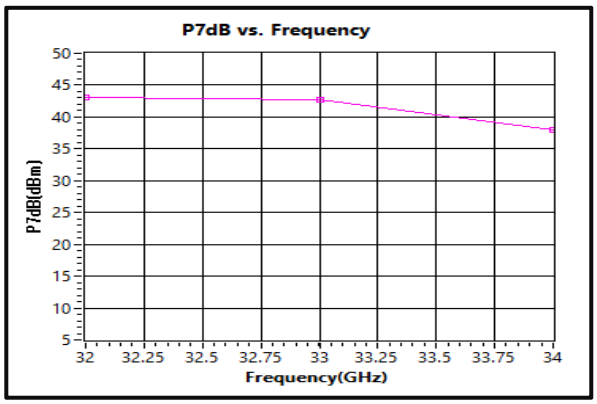


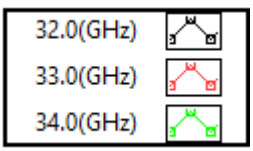


Gain vs. Output Power 32GHz-34GHz



P1dB vs. Frequency 32GHz-34GHz





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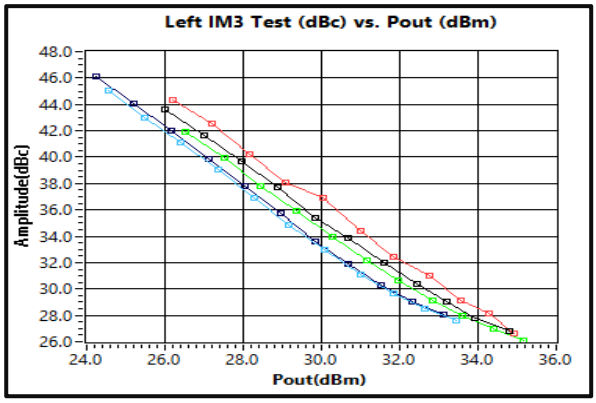
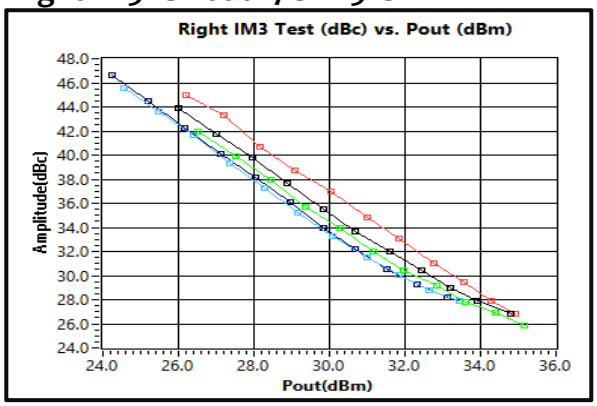
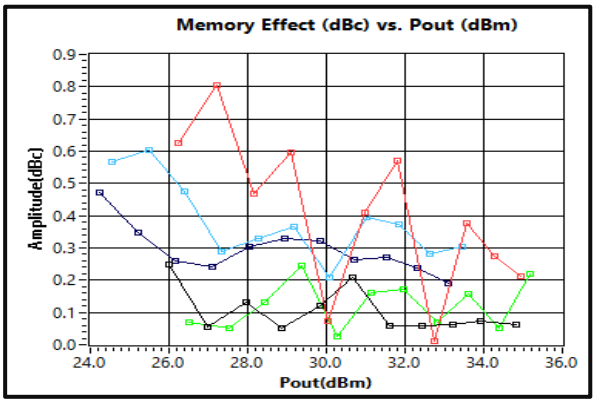
Left IM3 vs Pout 27GHz-31GHz

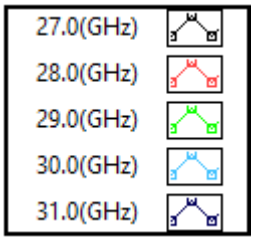


Right IM3 vs Pout 27GHz-31GHz

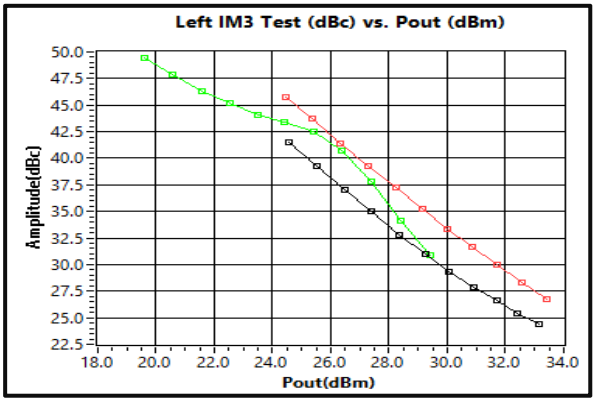


Memory Effect 27GHz-31GHz

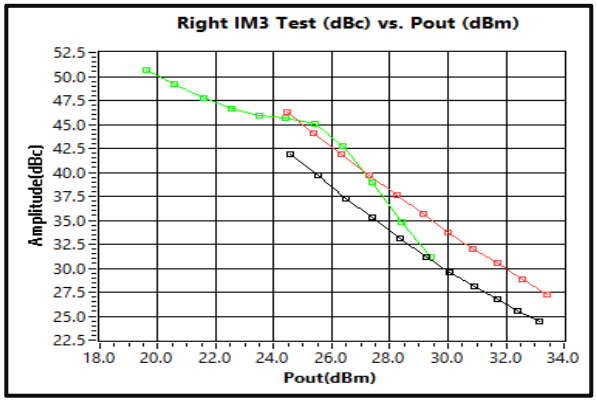




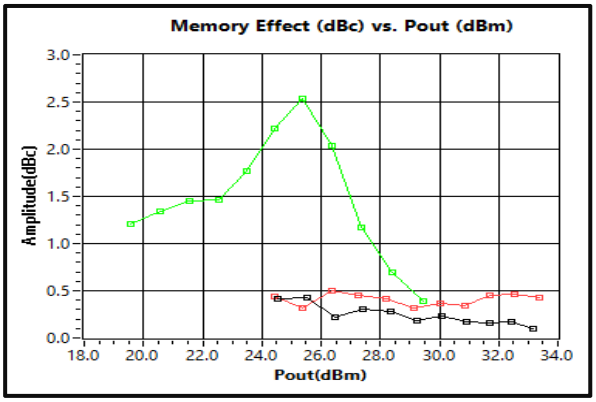
Left IM3 vs Pout 32GHz-34GHz

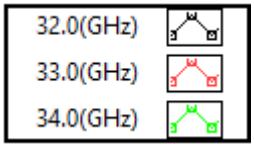


Right IM3 vs Pout 32GHz-34GHz

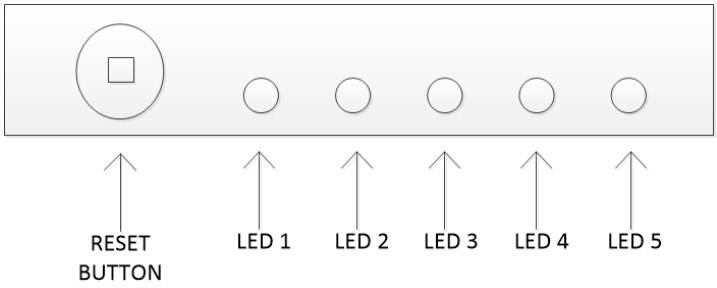


Memory Effect 32GHz-34GHz





Alarm Status Panel:



	Name	Function	Initial State	Description	Applied
	RESET	Control		Manual reset button to reset PA	Yes
LED 1	POWER	Indicator	RED Color	LED will light to RED color when supply power is applied	Yes
LED 2	RF IN	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when input signal is over limit *	Yes
LED 3	VSWR	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when output reflection is over limit *	No
LED 4	ID	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when an imbalance in the drain current of the combining branches occurs or if a drain current limit is reached *	Yes
LED 5	TEMP	Indicator	GREEN Color	PA will shut down and latch this LED to a RED color when driven over temperature *	Yes

*LED needs to be manually reset to initial state by pressing RESET button

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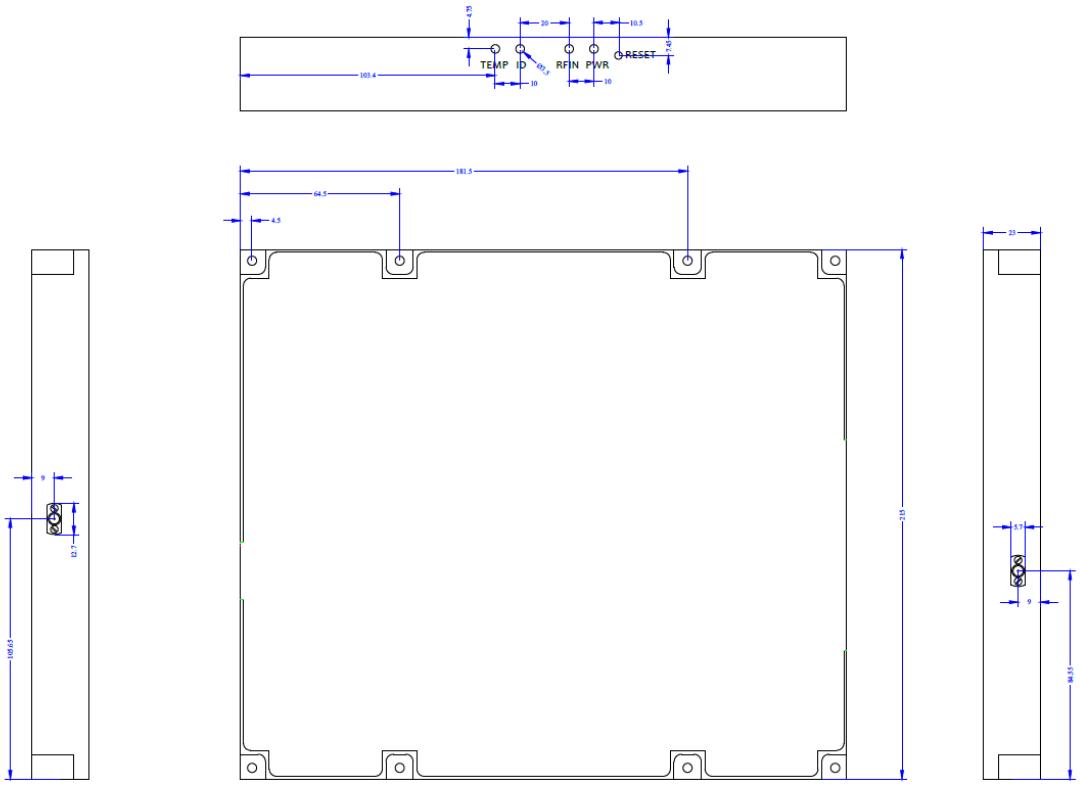
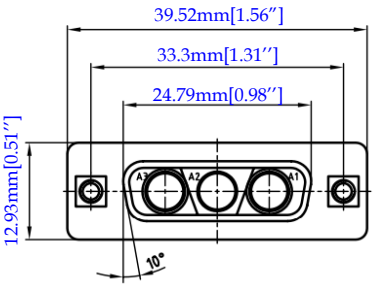


Power Supply Connector Drawing:



Heat Sink and cooling fan required during operation

Important Notice

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