



4W Power Amplifier 18GHz~28GHz

- High output power
- K Band Sat-Com
- High Peak to average handle capability
- High Linearity and low noise figure
- All specifications can be modified upon request



4W Power Amplifier 18GHz-28GHz

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	18		25	25		28	GHz
Gain		32			32		dB
Gain Flatness		5			5		dB
Gain Variation Over Temperature(-45 ~ +85)		3			3		dB
Input Return Loss	8	15		7	15		dB
Output Return Loss	10	15		10	15		dB
Output Power for 1 dB Compression (P1dB)	33	34	35	32	34	35	dBm
Saturated Output Power (Psat)		36			36		dBm
Output Third Order Intercept (IP3)		40			40		dBm
Supply Current (+24 VDC)		1000			1000		mA
Isolation S12	60	65		60	65		dB
Input Max Power(no damage)		0			0		dBm
Weight	3650						g
Impedance	50						Ohms
Input /Output Connector	2.92-Female						
Finishing	Nickel Plating						
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.



RF-LAMBDA

The power beyond expectations

RFLUPA18G28GB

4W Power Amplifier 18GHz-28GHz

Absolute Maximum Ratings	
Supply Voltage	+28Vdc
RF Input Power (RFIN) Pin_max = Psat - Gainsat	0 dBm
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 input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 2	Connect Ground Pin
Step 4	Connect +24V biasing
Power OFF Procedure	
Step 2	Turn off +24V biasing
Step 3	Remove RF connection
Step 4	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
RFLUPA18G28GB	EAR99	18GHz~28GHz 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.

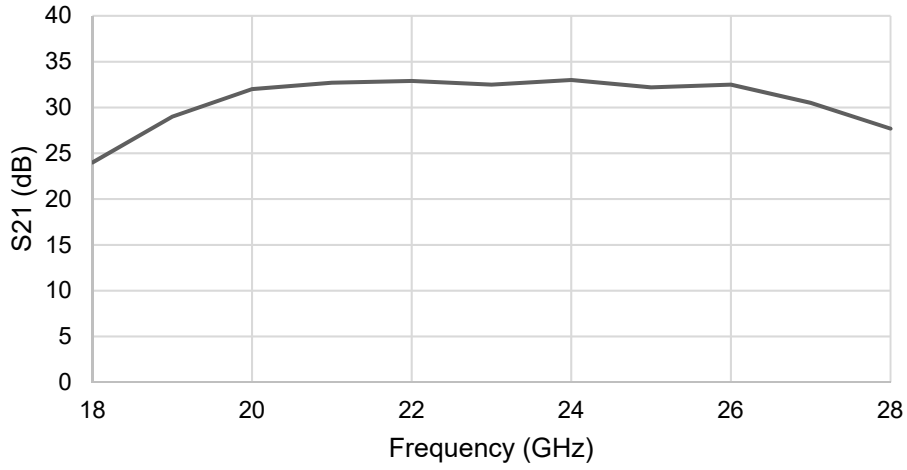
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

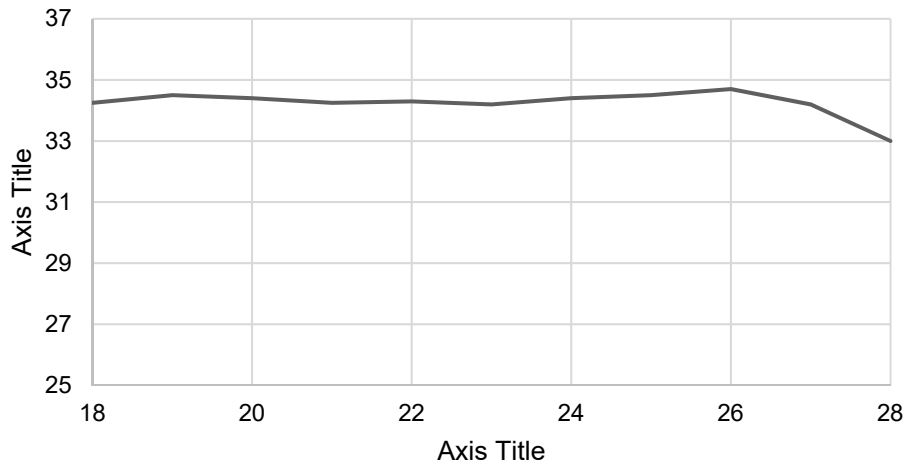
Each of RF-Lambda amplifiers will go through power and temperature stress testing. Due to fragile of the die, IC or MMIC, those are not covered by warranty. Any damage to those will NOT be free to repair.



Gain vs Frequency

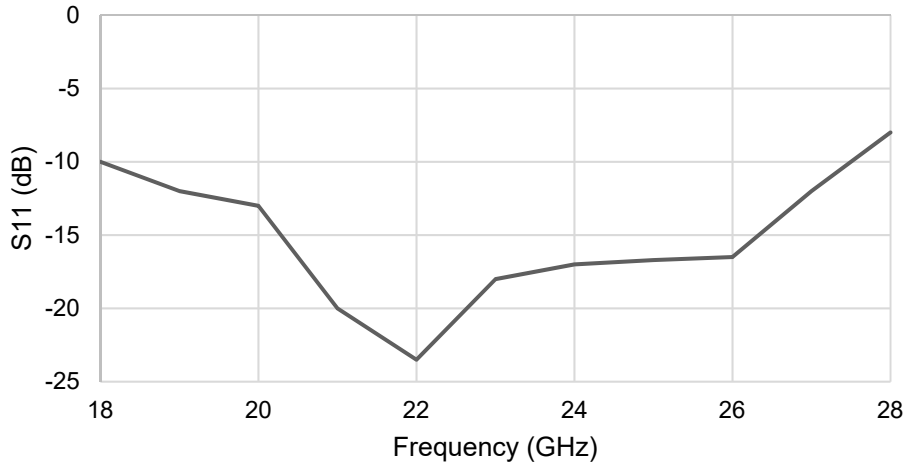


Pout @ 1dB Compression

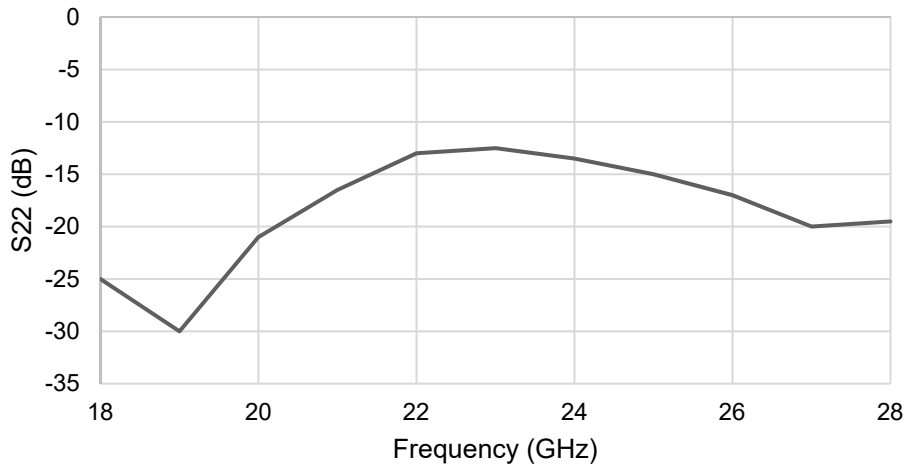




Input Return Loss



Output Return Loss



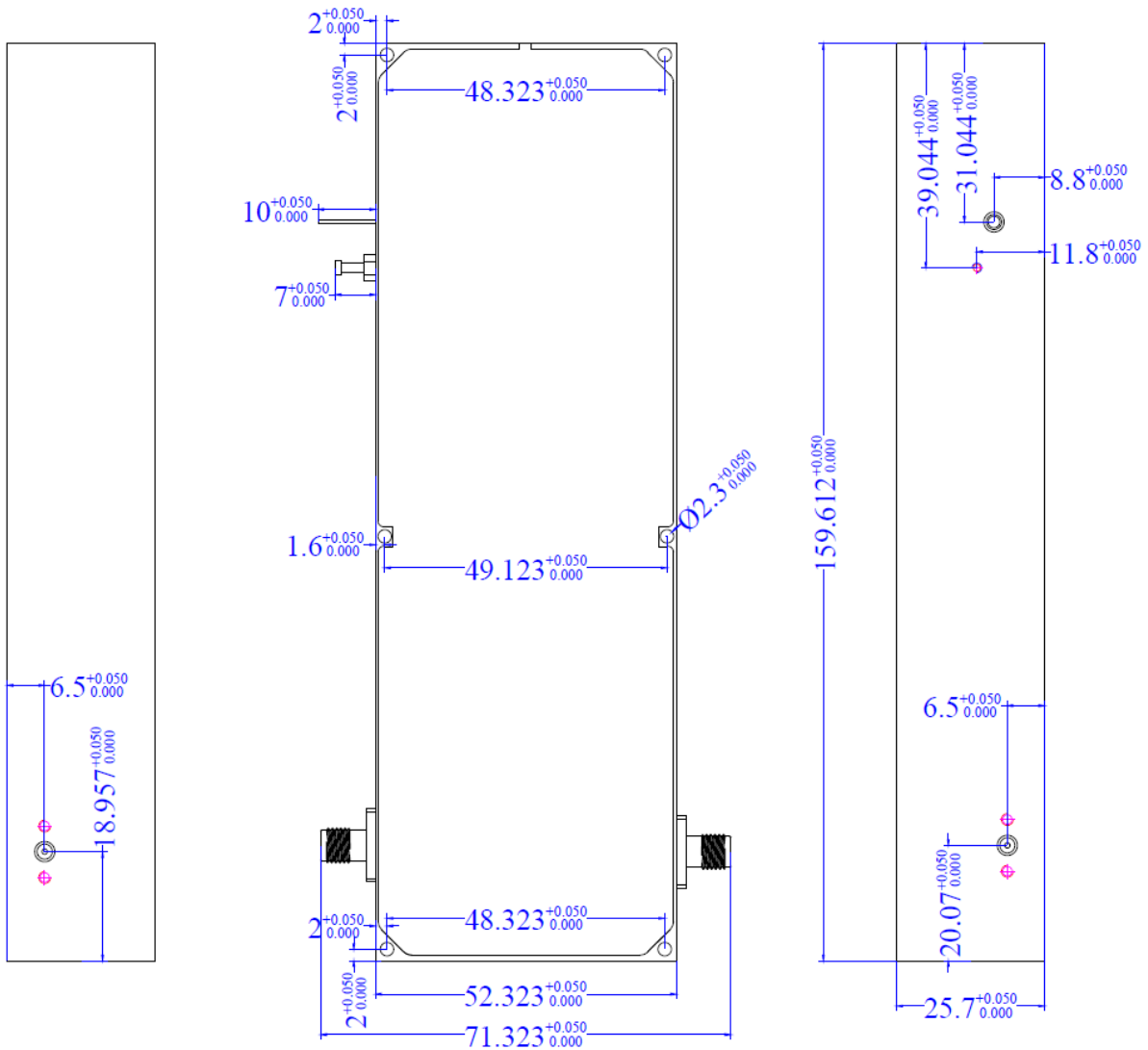


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Heat Sink and cooling fan required during operation



Important Notice

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RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.