60W Solid State Power Amplifier
8GHz~11GHz

RoHS Compliant

Features

- Wideband Solid State Power Amplifier
- Gain: 24 dB Typical
- Psat: +48dBm Typical
- Supply Voltage: +36V

Typical Applications

- Military & Defense Applications
- Wireless Infrastructure
- Test and Measurement
- X-band radar

Electrical Specifications, TA = +25°C

Parameter	Min.	Typ.	Max.	Units
Frequency Range		8 – 11		GHz
Gain		24		dB
Gain Flatness		±2		dB
Gain Variation Over Temperature (-45 ~ +85)		±3		dB
Input Return Loss		-14		dB
Output Return Loss		-16		dB
Saturated Output Power (Psat)*		48		dBm
Supply Current (VDC=+36V)		470	7000	mA
Isolation S12		65		dB
Input Max Power (No damage)		Psat – Gain		dBm
Weight (No heatsink)		1285		g
Impedance		50		Ohms
Input / Output Connectors		SMA-Female		
Finish		Nickel Plated		
Material		Aluminum / Copper		
Package Sealing		Epoxy Sealed (Standard)		
		Hermetically Sealed (Optional)		

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

Absolute Maximum Ratings	
Supply Voltage	+60VDC
RF Input Power	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 input and output with 50 Ohm source/load. (in band VSWR<1.9:1 or >10dB return loss)
Step 2	Connect Ground Pin
Step 3	Connect VDC
Power OFF Procedure	
Step 1	Turn Off VDC
Step 2	Remove RF Connection
Step 3	Remove Ground

Environmental Specifications	
Operational Temperature (°C)	-45 ~ +55 (Case Temperature must be less than 55C all time)
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msec half sine 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.	Description
RFLUPA08G11GB	8GHz – 11GHz Power Amplifier

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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.

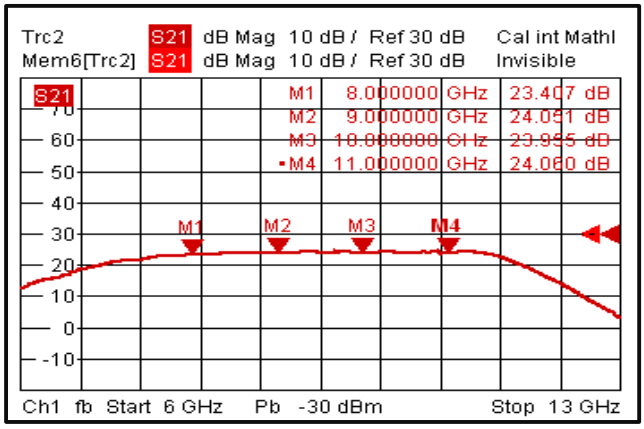
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

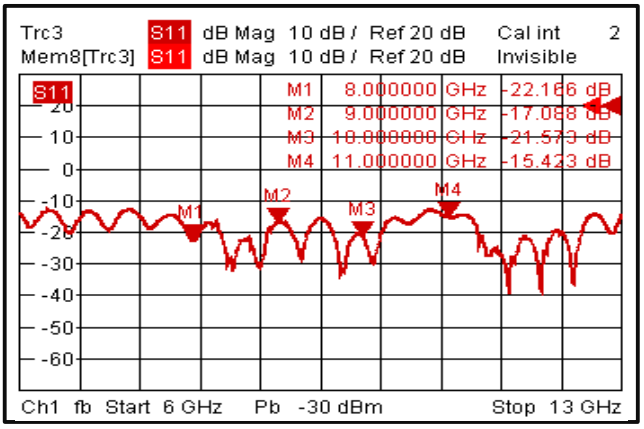
Each RF - Lambda amplifier will go through power and temperature stress testing.
Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

RF-LAMBDA INC. www.rflambda.com
Sales: sales@rflambda.com Technical : support@rflambda.com

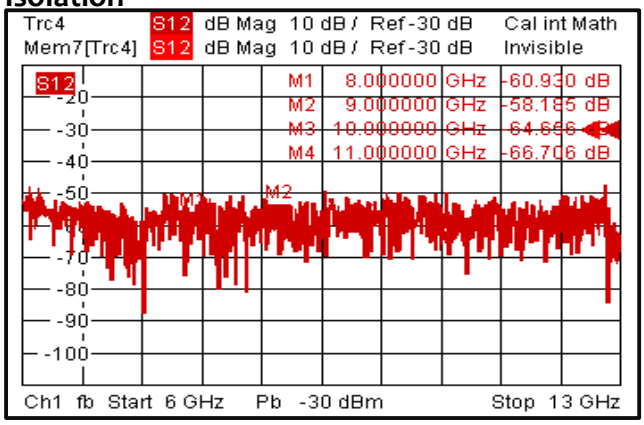
Gain vs. Frequency



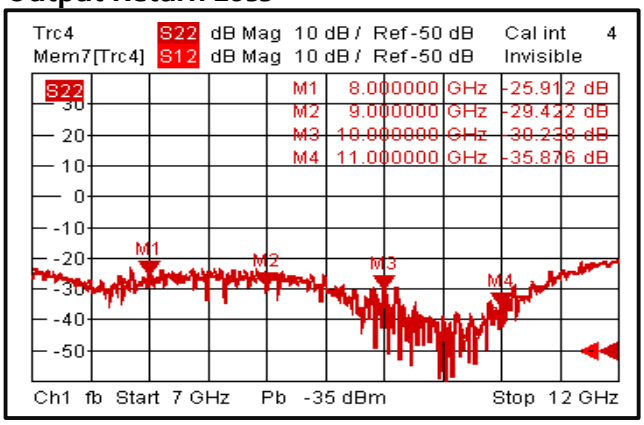
Input Return Loss



Isolation



Output Return Loss



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

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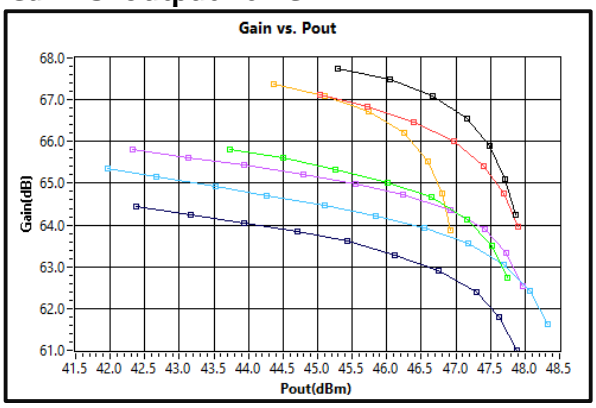
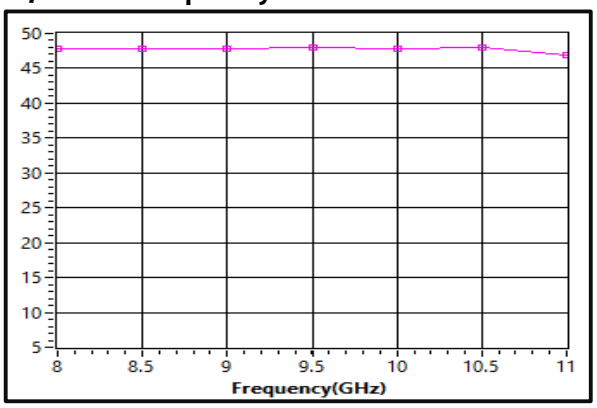
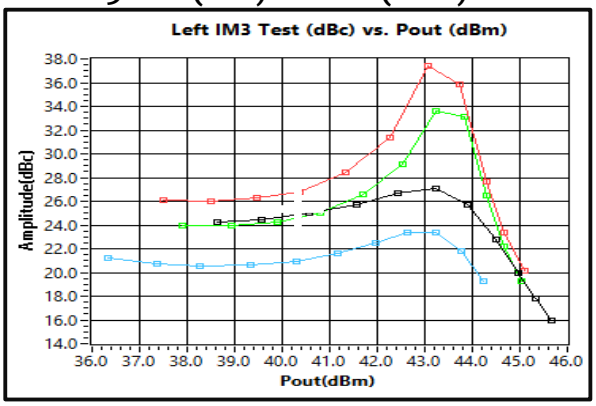
Gain vs. Output Power



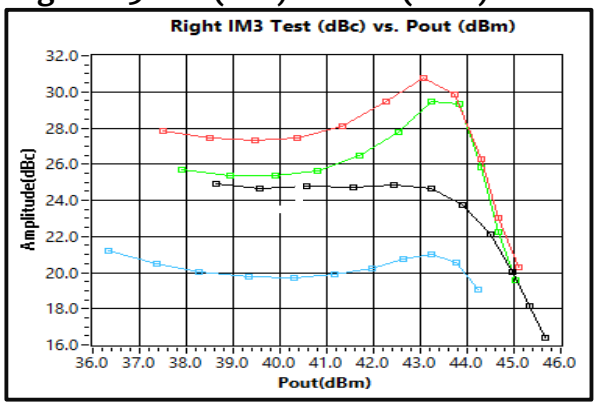
P7dB vs. Frequency



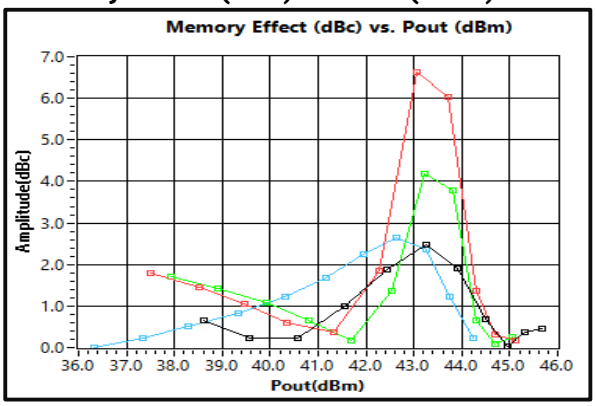
Left IM3 Test (dBc) vs Pout (dBm)



Right IM3 Test (dBc) vs Pout (dBm)



Memory Effect (dBc) vs Pout (dBm)



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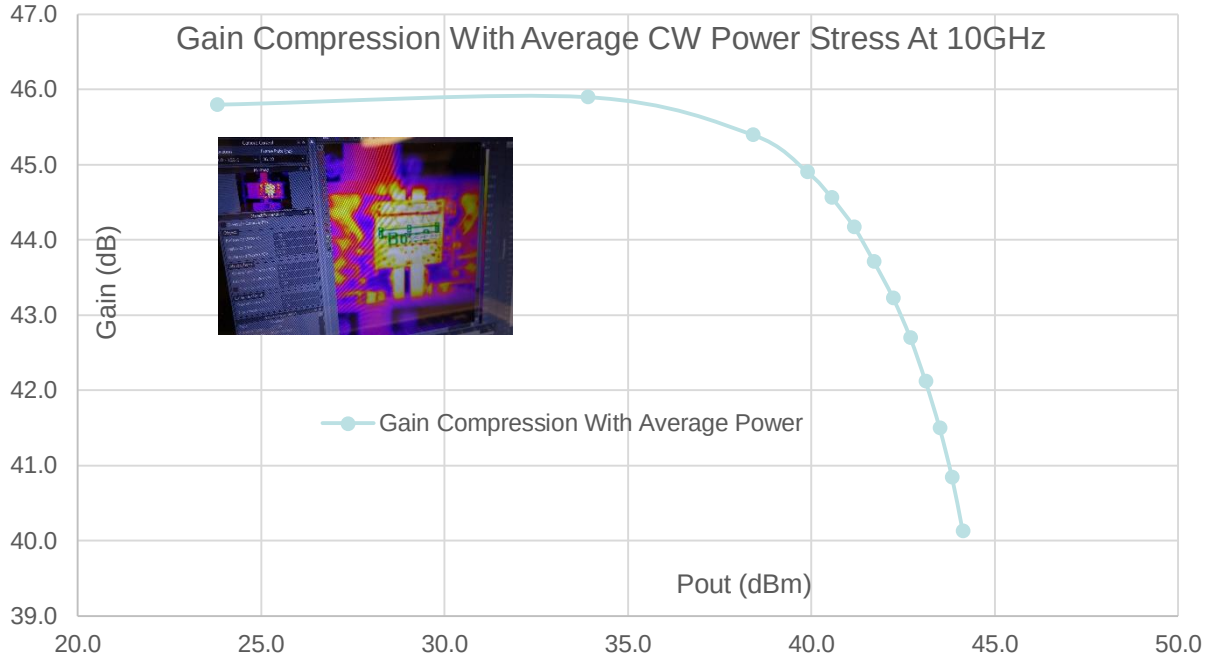
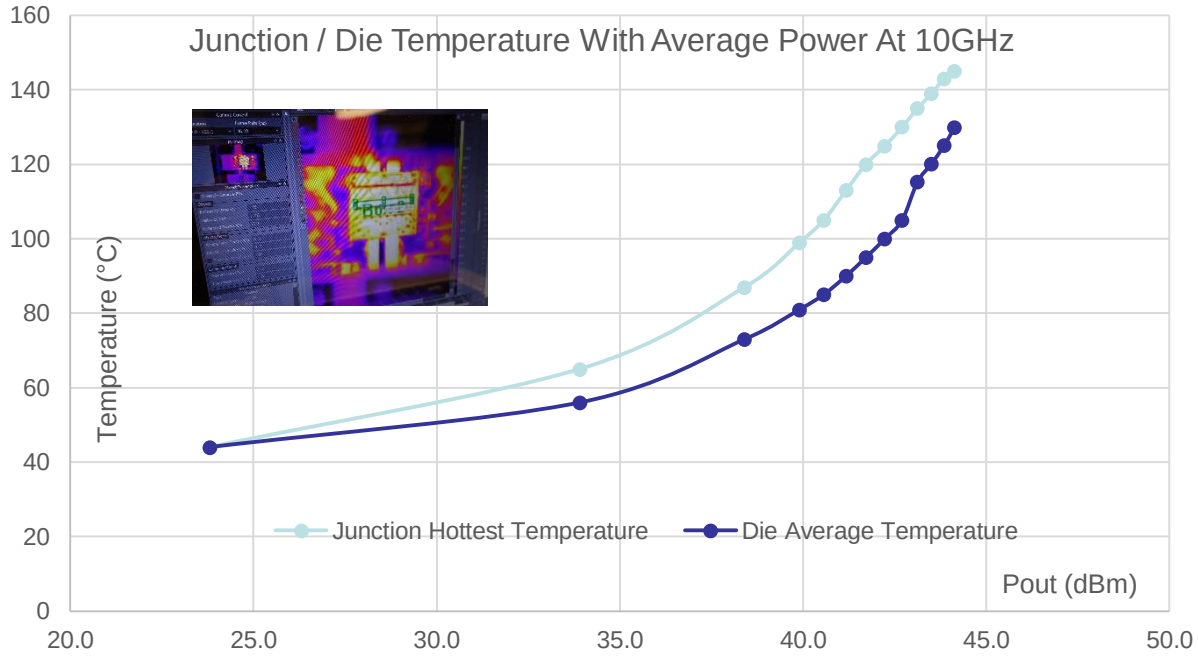
PA Stress Testing.





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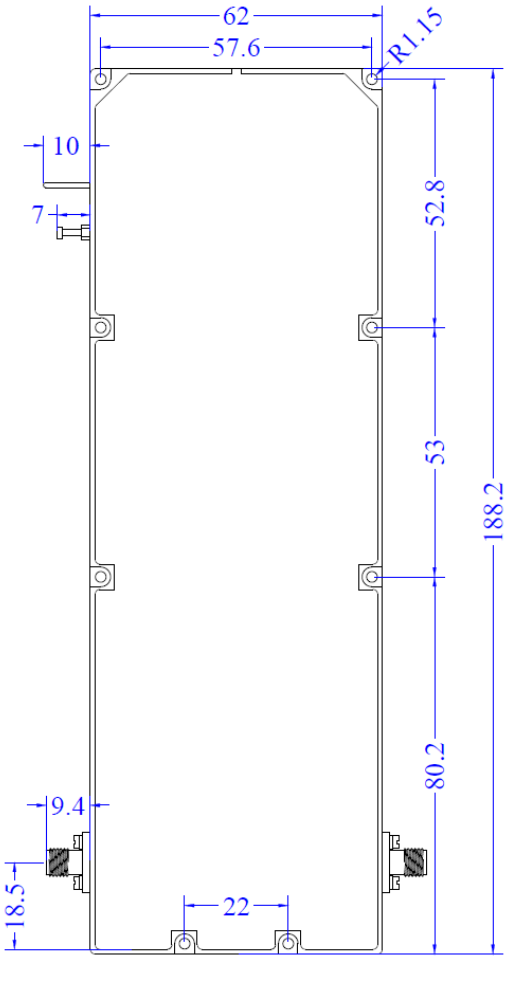
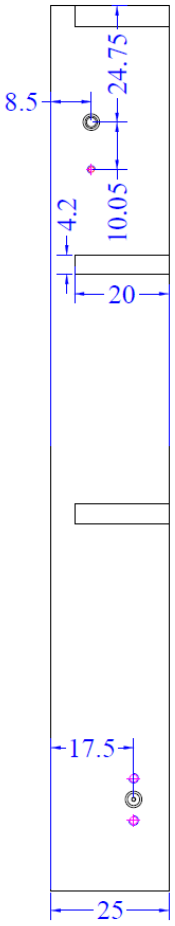
Outline Drawing:

All Dimensions in mm





Heat Sink and cooling fan required during operation

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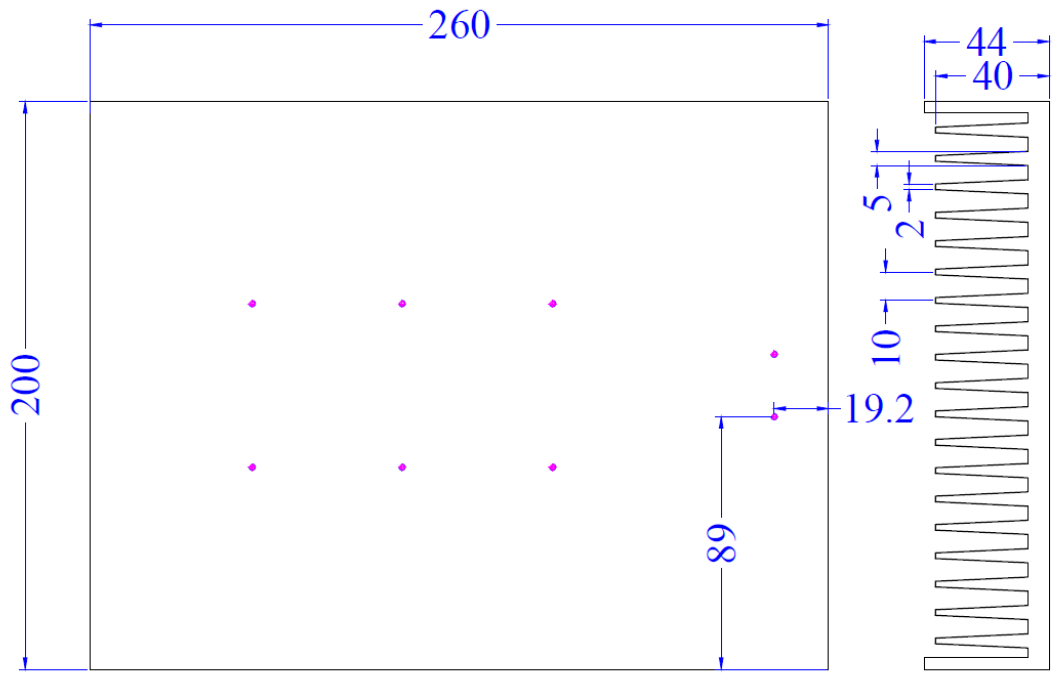
Heatsink Outline Drawing:

All Dimensions in mm



Heat Sink and cooling fan required during operation

Important Notice