25W Wide Band Power Amplifier
20-6000MHz

RoHS Compliant

Features

- Wideband Solid State Power Amplifier
- Psat: +45dBm Typical
- Gain: 50dB Typical
- Supply Voltage: +60V DC

Typical Applications

- Wireless Infrastructure
- Short Haul / High Capacity Links
- RF Microwave and Vsat
- Military & Aerospace Applications
- Test Instrumentation

Electrical Specifications, T_A =25 ℃

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.02 – 1			2 – 6			GHz
Gain		57			46		dB
Gain Flatness		±7			±5		dB
Gain Variation Over Temperature (-45 ~ +85)		±3			±3		dB
Input Return Loss		10			10		dB
Output Return Loss		20			20		dB
Saturated Output Power (Psat)		45			45		dBm
Supply Current (+60V DC)		0.7	2.8		0.7	2.8	A
Isolation S12		75			75		dB
Input Max Power (No Damage)	Psat – Gain			Psat – Gain			dBm
Weight	≈ 450						g
Impedance	50						Ohms
Input / Output Connectors	SMA-Female						
Finishing	Nickel Plating						
Material	Aluminum / Copper						

*** To achieve best/most reliable performance, keep case temperature below 38 degrees Celsius. Extra cooling on case is required.

* 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	+65 VDC
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 +60V biasing
Power OFF Procedure	
Step 1	Turn off +60V biasing
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 RMSs (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msc 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
RFLUPA00G06G	0.02GHz~6GHz 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.

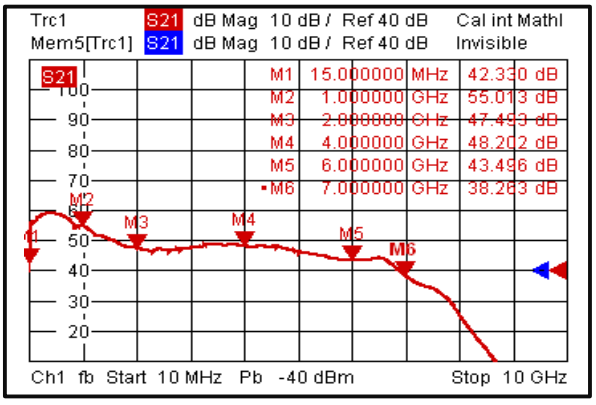
Amplifiers do not contain Thermal protection, Reverse DC polarity or Over voltage protection with the exception of a few models. Please inquire.

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

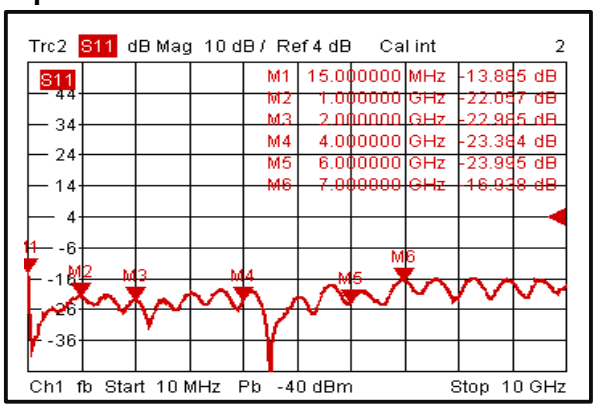
What is not covered with warranty?

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.

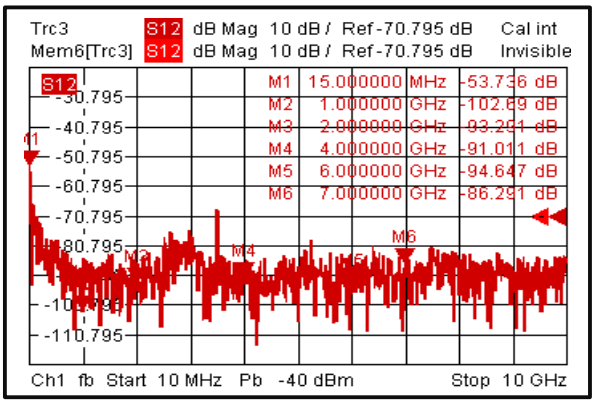
Gain vs. Frequency



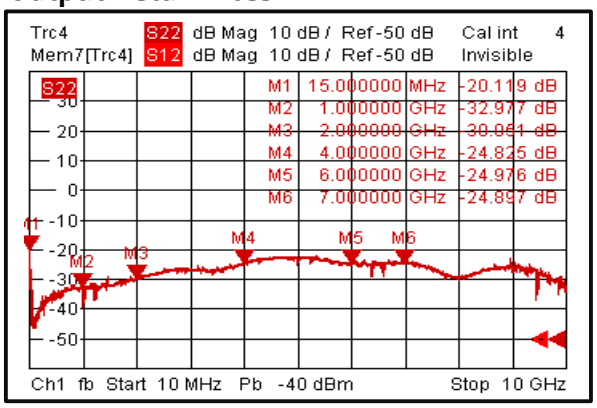
Input Return Loss



Isolation



Output Return Loss



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

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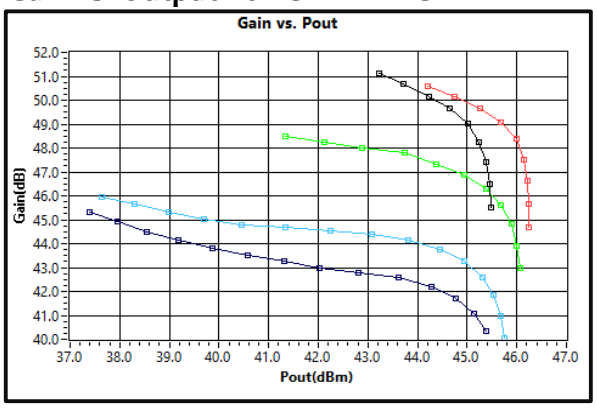
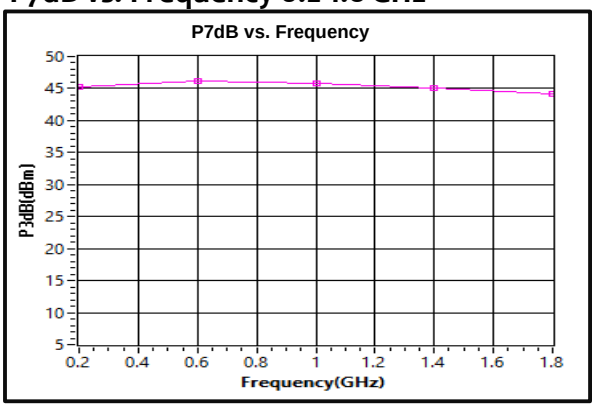
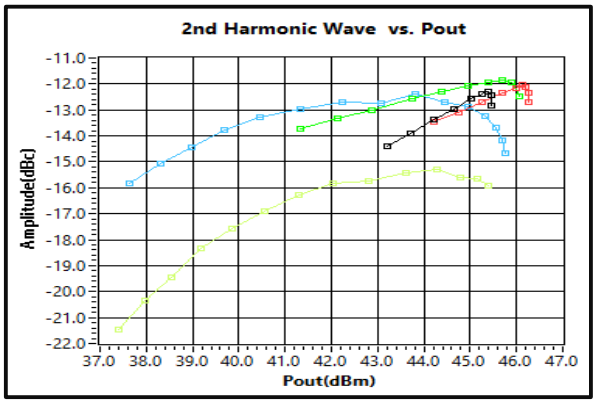
Gain vs. Output Power 0.2-1.8 GHz



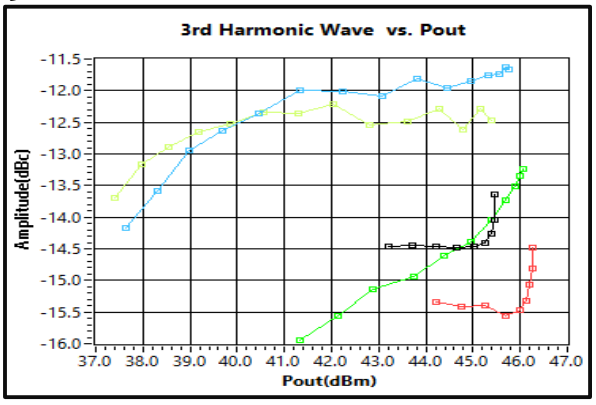
P7dB vs. Frequency 0.2-1.8 GHz



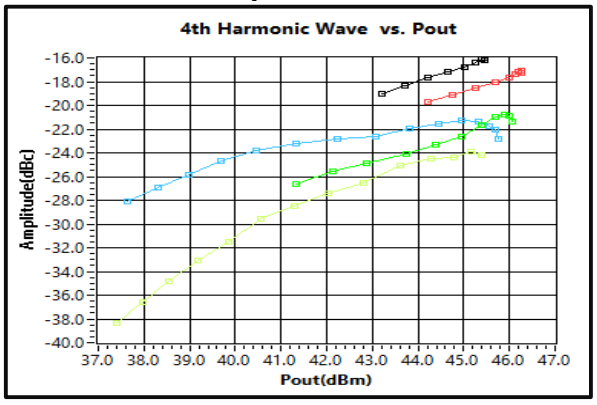
2nd Harmonic Wave Power 0.2-1.8 GHz

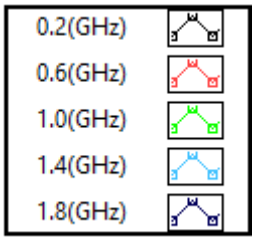


3rd Harmonic Wave Power 0.2-1.8 GHz



4th Harmonic Output Power 0.2-1.8 GHz





* P1dB, P3dB and Psat power testing signal: 200μs pulse width with 10% duty cycle.
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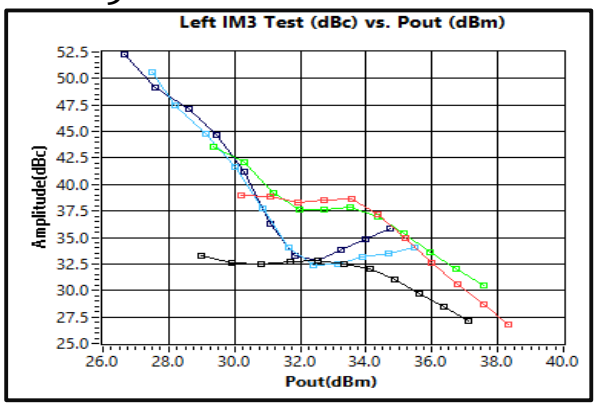
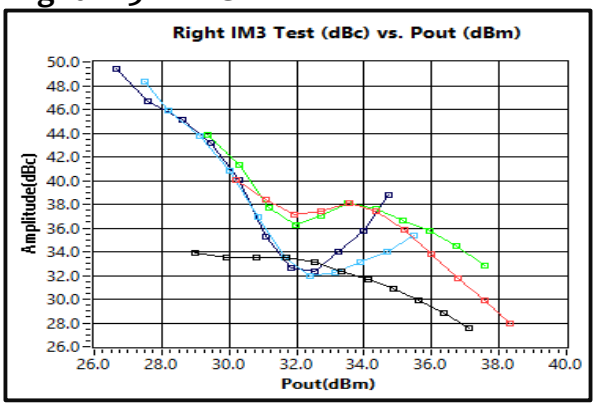
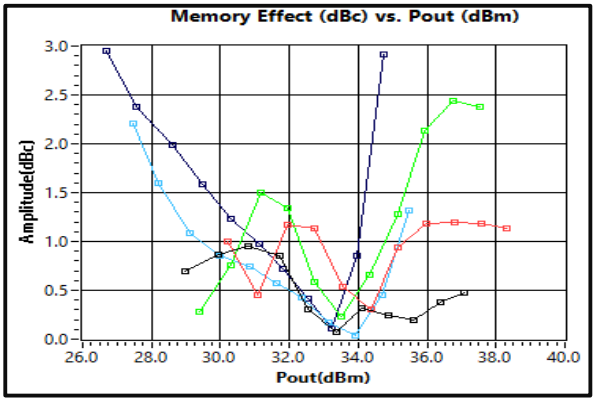
Left IM3 0.2-1 GHz

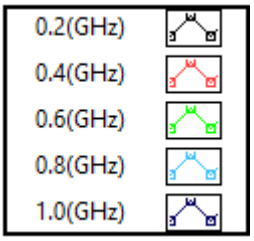


Right IM3 0.2-1 GHz



Memory Effect 0.2-1 GHz





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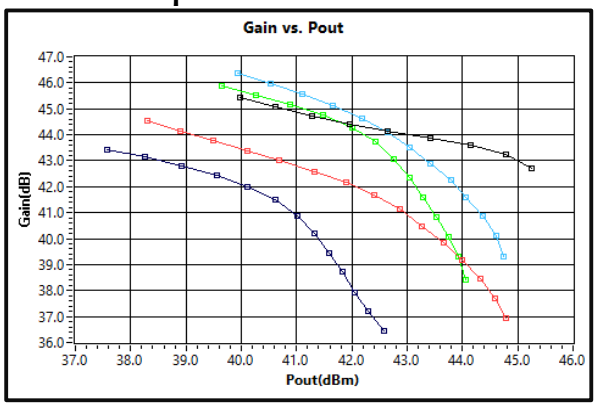
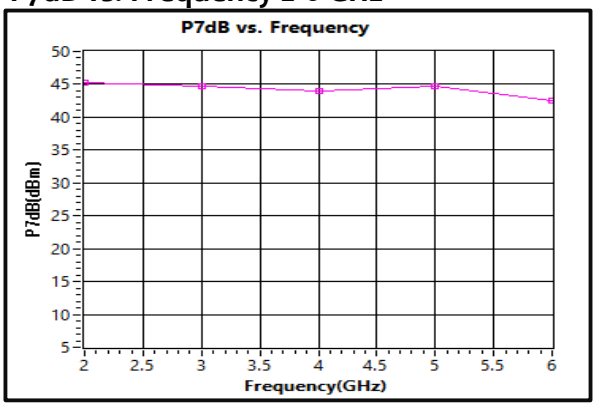
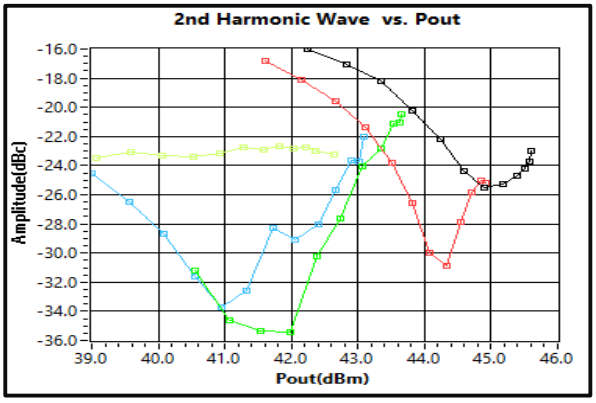
Gain vs. Output Power 2-6 GHz



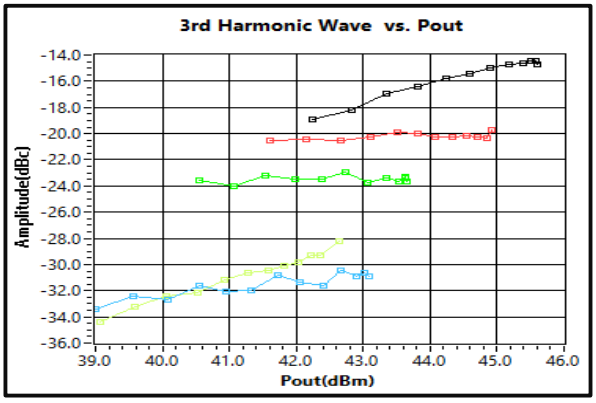
P7dB vs. Frequency 2-6 GHz



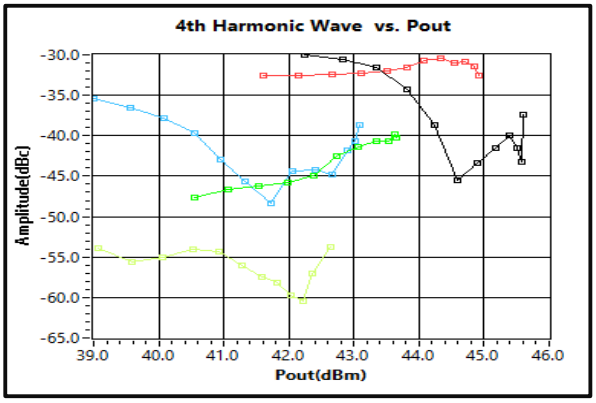
2nd Harmonic Wave Power 2-6 GHz



3rd Harmonic Wave Power 2-6 GHz



4th Harmonic Output Power 2-6 GHz



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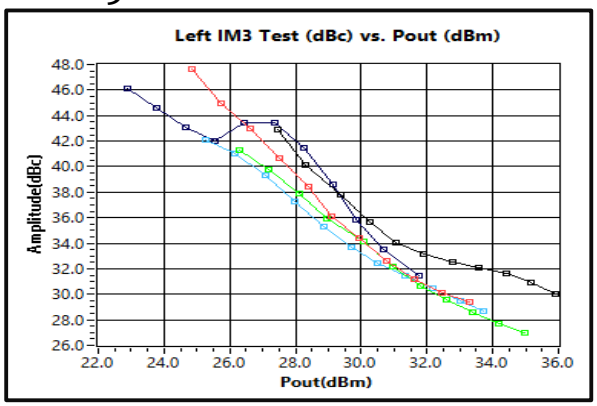
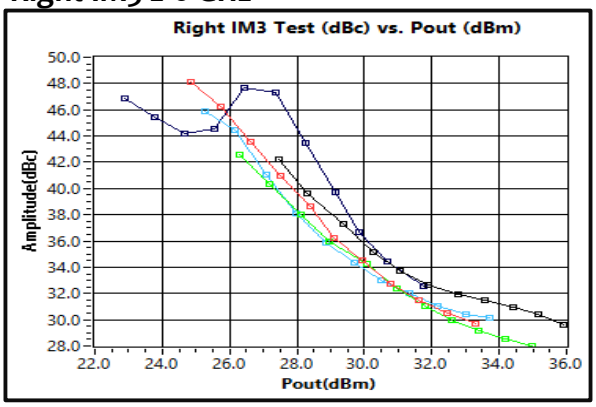
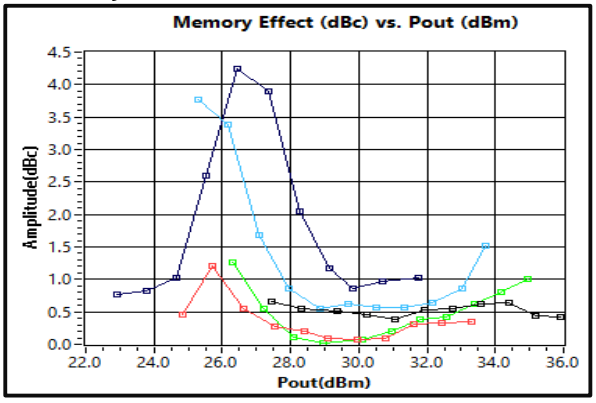
Left IM3 2-6 GHz



Right IM3 2-6 GHz



Memory Effect 2-6 GHz



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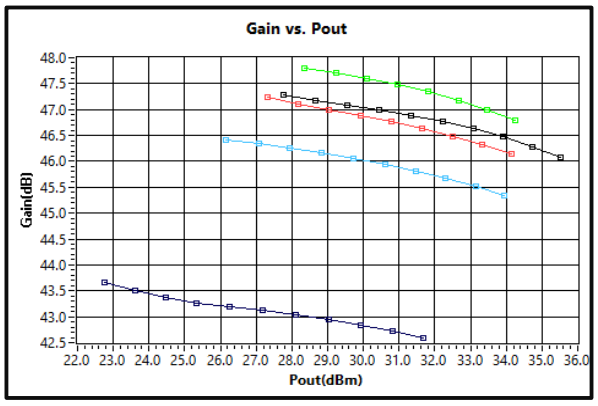
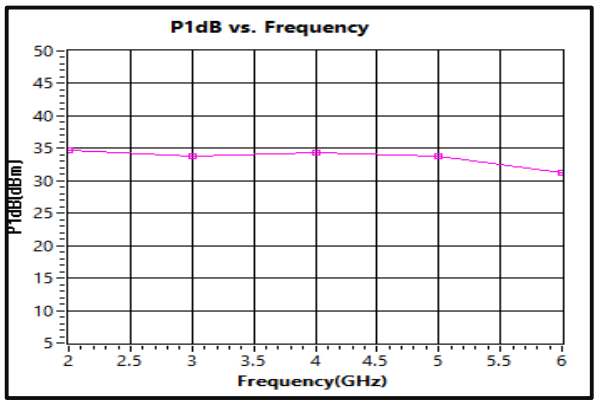
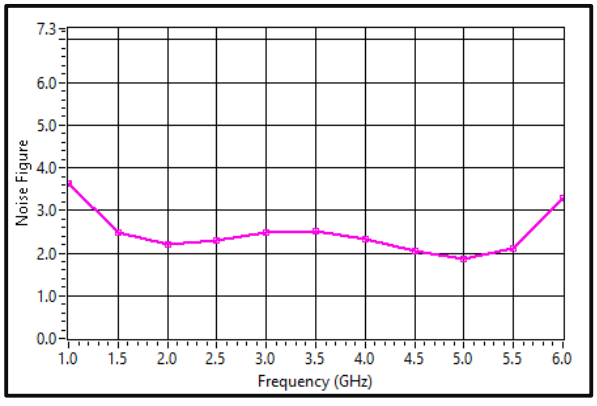
CW Input Gain vs Output Power 2-6 GHz



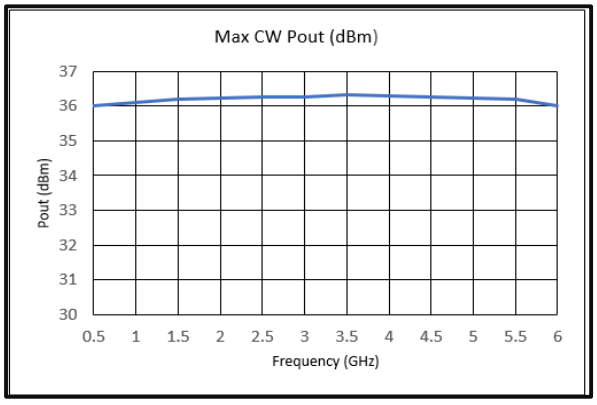
CW P1dB



Noise Figure vs. Frequency



Max CW Output Power



*Case temperature must not exceed 38 degree C

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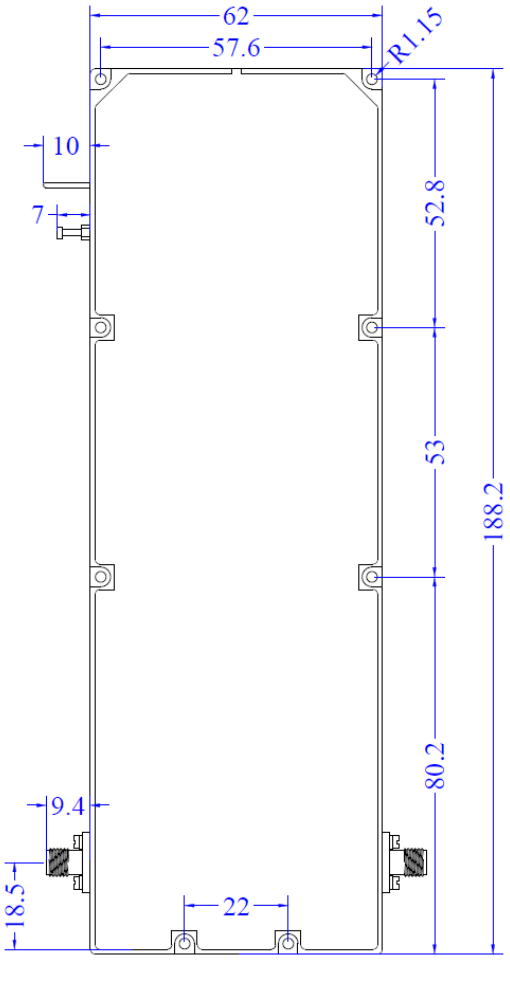
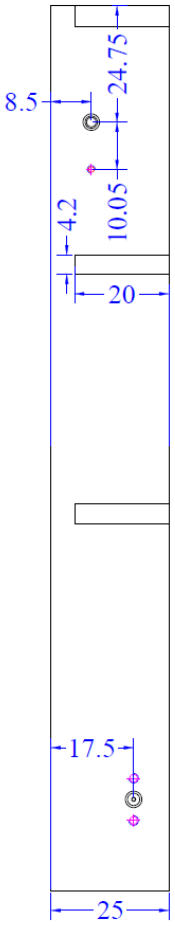
Outline Drawing:

All Dimensions in mm





Heat Sink and cooling fan required during operation

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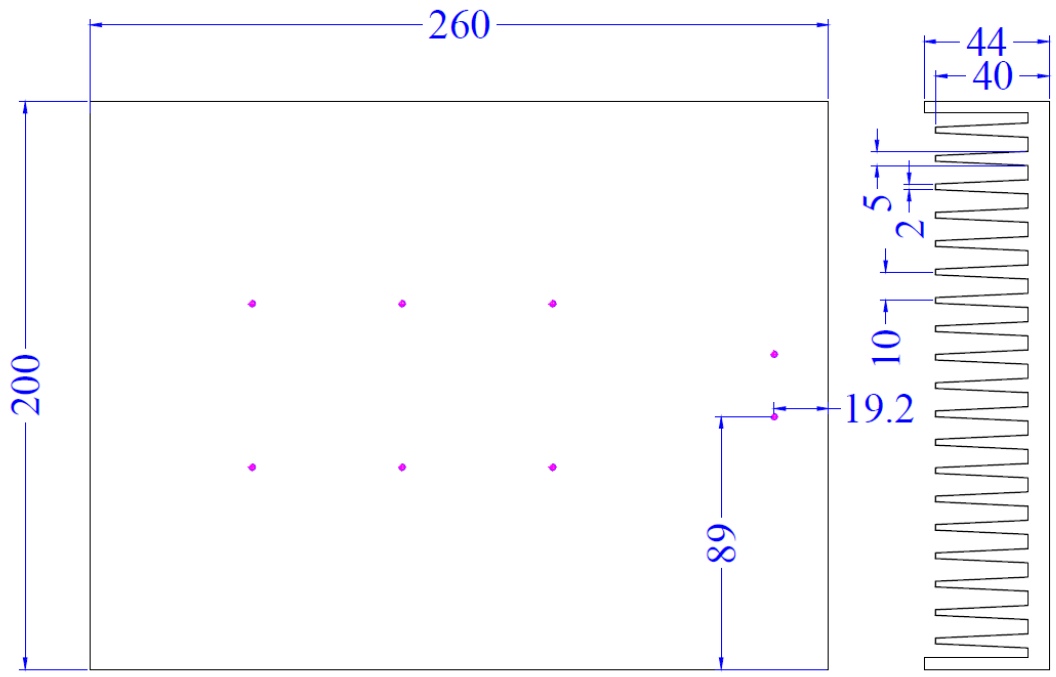
Heatsink Outline Drawing:

All Dimensions in mm



Heat Sink and cooling fan required during operation

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