

300W Wide Band Solid State Benchtop Power Amplifier 6GHz~18GHz



Features

- Wideband Solid State Power Amplifier
- Gain: 77dB Typical
- Psat: +55dBm Typical
- Automatic Calibration
- Build in Temperature Compensation.
- Adjustable Attenuation: 31.5dB range, 0.5dB step
- 5U rack dimension

Typical Applications

- Military & Defense Applications
- Wireless Infrastructure
- Test and Measurement

Electrical Specifications, TA = +25°C

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	6~13		13~18				GHz
Gain		75			77		dB
Gain Flatness		±5			±5		dB
Gain Variation Over Temperature (-45 ~ +85)		±3			±3		dB
Input Return Loss		30			25		dB
Output Return Loss		35			30		dB
Saturated Output Power (Psat)*		55			55		dBm
Isolation S12		85			86		dB
Input Max Power (No damage)	Psat – Gain		Psat – Gain				dBm
Weight			50				kg
Dimension			5U				
Impedance			50				Ohms
Input / Output Connectors	Input N-Type Female, Front Panel Output N-Type Female, Front Panel (Rear panel Output available upon request)						
Power Supply	200-240 VAC Delta connected (4-wire) 360-435 VAC Wye connected (5-wire) 50/60 Hz, three phase						

* 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	
RF Input Power	10W

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 and Test Standards

Parameter	Description
Operational Temperature	-40°C~+55°C (Case Temperature)
Storage Temperature	-50°C~+125°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High 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 (For Hermetically Sealed Units)

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

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Ordering Information	
Part No.	Description
REMC06G18GG	6GHz~18GHz EMC Benchtop 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.

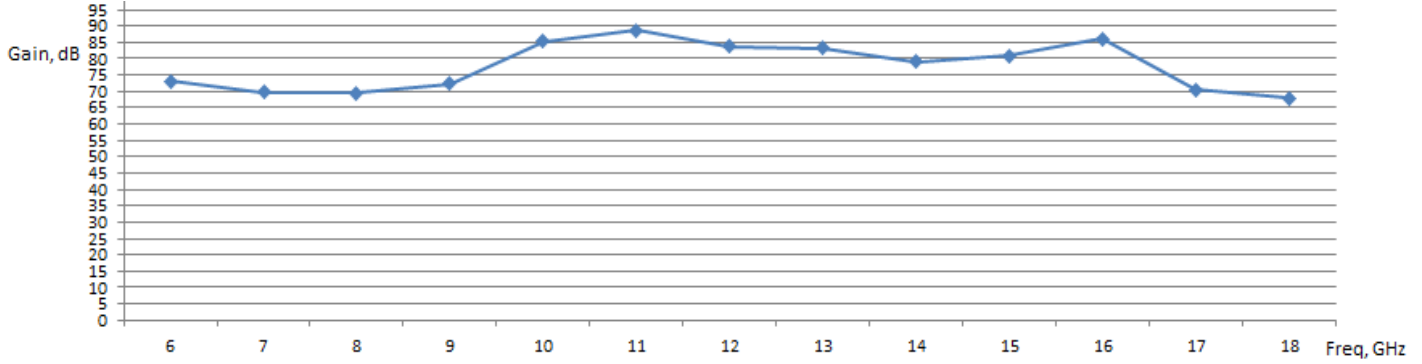
Proper electrostatic discharge (ESD) precautions are recommended to avoid performance degradation or loss of functionality.

What is not covered with warranty?

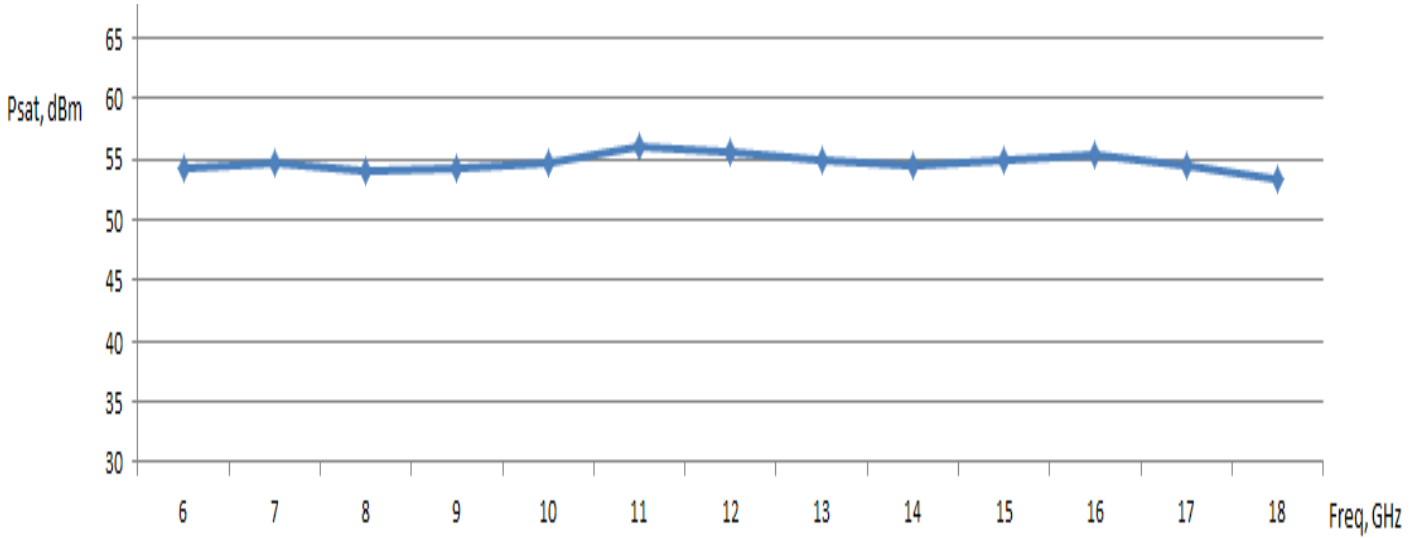
Each RF - Lambda amplifier will go through power and temperature stress testing. Since the die, ICs or MMICs are fragile, these are not covered by warranty. Any damage to these will NOT be free to repair.

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Gain vs. Frequency



Psat vs. Frequency



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

Features:

- **Amplifier Automatic Calibration Function**
- **Ethernet Remote Control**
 - Gain Control
 - RF Output On / Off
 - Pin, Pout, Gain reading
- **Digital Control Attenuator**
- **Protection Functions:**
 - Over Temperature Protection
 - Amplifier Over Current Protection
 - Amplifier Current In-balance Protection
 - Output VSWR protection
 - RF Input Over Drive Protection
 - Fan Speed Monitor
- **RF Gain and Output Power Display**
- **RF Output Enable Function**
- **High Maximum RF Input Power Handling, 10W max**
- **5-inch LCD Front Panel Display Screen**

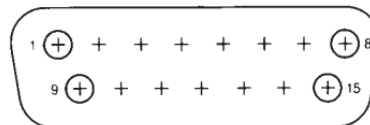


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RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.

Protection Connector Table:



Pin #	Name	Function	Initial State	Description	Applied
1	Reset	Control		Resets PA when logic <u>LOW</u> is applied and released	Yes
2	Drain Disable	Control	LOW	Applying logic <u>HIGH</u> disables drains of amplifiers	Yes
3	Gate Disable	Control	LOW	Applying logic <u>HIGH</u> disables gates of amplifiers	Yes
4	RF IN Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when input signal is over limit	Yes
5	Temp Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when amplifier is driven over temperature	Yes
6	Current Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when drain current limit is reached	Yes
7	ID Imbalance	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when an imbalance in the drain current of the combining branches occurs	Yes
8	PA input power	Indicator		PA input power is represented by voltage	No
9	PA output power	Indicator		PA output power is represented by voltage	Yes
10	PA output reflection power	Indicator		PA output reflection power is represented by voltage	Yes
11	VSWR	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when output reflection is over limit	No
12	Temp Signal	Indicator		PA carrier case temperature is represented by voltage	Yes
13	+5V	Power Supply	+5V	+5V DC is supplied for reference	Yes
14	GND	Ground	GND	Ground	Yes
15	GND	Ground	GND	Ground	Yes

HIGH/LOW voltages are standard TTL signals:
0.0V-0.8V = LOW
2V-5V = HIGH

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