# 100W Solid State Power Amplifier 2-6GHz

**Electrical Specifications, TA = +25 °C  Vd = +36V**

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</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>2GHz – 4GHz</td>
<td></td>
<td>4GHz – 6GHz</td>
<td></td>
<td></td>
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<td>GHz</td>
</tr>
<tr>
<td>Gain</td>
<td>42</td>
<td>47</td>
<td>40</td>
<td>40</td>
<td>45</td>
<td>45</td>
<td>dB</td>
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<tr>
<td>Gain Flatness</td>
<td>±5</td>
<td>±5</td>
<td>±4</td>
<td>±4</td>
<td>±4</td>
<td>±4</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Variation Over Temperature (-45 ~ +85)</td>
<td>±3</td>
<td>±3</td>
<td>±3</td>
<td>±3</td>
<td>±3</td>
<td>±3</td>
<td>dB</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>&gt;7</td>
<td>&gt;7</td>
<td>&gt;7</td>
<td>&gt;7</td>
<td>&gt;7</td>
<td>&gt;7</td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>dB</td>
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<tr>
<td>Saturated Output Power (Psat)</td>
<td>48</td>
<td>50</td>
<td>48</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>dBm</td>
</tr>
<tr>
<td>IM3</td>
<td>-30</td>
<td>-30</td>
<td>-30</td>
<td>-30</td>
<td>-30</td>
<td>-30</td>
<td>dBc</td>
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<tr>
<td>Supply Current (Idd) (Vcc=+36V)</td>
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<td>Quiescent = 1.8 A</td>
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<tr>
<td>Input Max Power (no damage)</td>
<td></td>
<td></td>
<td>Psat – Gain</td>
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<td></td>
<td></td>
<td>dBm</td>
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<tr>
<td>Weight</td>
<td>3000</td>
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<tr>
<td>Impedance</td>
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<td>50</td>
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<td></td>
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<td>Ohms</td>
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<tr>
<td>Power Connector</td>
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<td></td>
<td>D-SUB COMBO 3POS</td>
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<tr>
<td>Input/Output Connector</td>
<td>Input SMA-Female—Output N-Type Female</td>
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<tr>
<td>Finishing</td>
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<td>Standard: Nickel 220 micron thickness</td>
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<tr>
<td>Material</td>
<td></td>
<td></td>
<td>Aluminum/copper</td>
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<tr>
<td>Package Sealing</td>
<td></td>
<td></td>
<td>Epoxy and Screw tight Sealing (Standard)</td>
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</table>

* 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.
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.
100W Solid State Power Amplifier 2-6GHz

Gain

Output Return Loss

Input Return Loss

Isolation

Note: Input/output return loss measurements include attenuators to protect equipment
RF-LAMBDA
The power beyond expectations

RFLUPA02G06GC

100W Solid State Power Amplifier 2-6GHz

Gain vs Output Power (2.1 and 5.9GHz)

Gain vs Output Power (2.2 and 5.8GHz)

Gain vs Output Power (2GHz to 6GHz)

P7dB vs Frequency (2.1 and 5.9GHz)

P7dB vs Frequency (2.2 and 5.8GHz)

P7dB vs Frequency (2GHz to 6GHz)

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100W Solid State Power Amplifier 2-6GHz

2\textsuperscript{nd} Harmonic Wave vs Pout

3\textsuperscript{rd} Harmonic Wave vs Pout

4\textsuperscript{th} Harmonic Wave vs Pout

Current vs Pout
### Alarm Status Panel:

- **RESET**: Manual reset button to reset PA
- **LED 1 (POWER)**: LED will light to RED color when supply power is applied
- **LED 2 (RF IN)**: PA will shut down and latch this LED to a RED color when input signal is over limit *
- **LED 3 (VSWR)**: PA will shut down and latch this LED to a RED color when output reflection is over limit *
- **LED 4 (ID)**: 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 *
- **LED 5 (TEMP)**: PA will shut down and latch this LED to a RED color when driven over temperature *

*LED needs to be manually reset to initial state by pressing RESET button*
RF-LAMBDA
The power beyond expectations

RFLUPA02G06GC
100W Solid State Power Amplifier 2-6GHz

***Heat Sink and cooling fan required during operation***
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