

## 30-88MHz 25W Class A High Performance Amplifier

- ❖ Class A 25W amplifier
- ❖ 30-88MHz bandwidth
- ❖ 46.5dB typical gain
- ❖ +/- 1.0dB typical gain flatness
- ❖ Temperature-compensated bias
- ❖ TTL disable
- ❖ Available with heatsink and fan, or enclosed with DC supply and fan



Representative image.

The RFP30-88-25 is a Class A high performance amplifier, outstanding as a driver stage in military, commercial, industrial, medical, or scientific systems. It exhibits excellent full power and back-off linearity, and utilizes a combination of two active device technologies for optimum performance and ruggedness. It is supplied with SMA input and output connectors.

### Specifications

$V_{sup} = +28VDC$ ,  $I_{DQ} = 3.90A$ ,  $P_{out} = 25W$ ,  $T_{base} = 30^{\circ}C$ ,  $Z_{load} = 50\Omega$

| Parameter   | Min  | Typ          | Max    | Units        |
|---|--|--------------|--------|--------------|
| Freq. Range   | 30   |              | 88     | MHz          |
| $P_{1dB}$   | 40   | See Figure 4 |        | W            |
| Input Power   |  | -2.5         | 1      | dBm          |
| Gain  | 43   | 46.5         |        | dB           |
| Gain Flatness   |  | +/-1.0       | +/-1.5 | dB           |
| Drain Current   |  | 4.0          | 4.2    | A            |
| Efficiency  | 21   | 22           |        | %            |
| IRL   |  | -30          | -20    | dB           |
| $f_2$   |  | -34          | -25    | dBc          |
| $f_3$   |  | -36          | -25    | dBc          |
| $IMD_3$<br>25W PEP, $\Delta f=10kHz$<br>See Fig. 2 for 100kHz |  | -37          | -32    | dBc          |
| Dimensions  | 2.10 X 5.80 X 1.20<br>(53.34 X 147.32 X 30.48) |              |        | inch<br>(mm) |

### Maximum Ratings

Operation beyond these ratings will void warranty.

| Parameter       | Value         |
|-----------------|---------------|
| $V_{supply}$    | 24-28VDC      |
| Bias Current    | 3.9A          |
| Drain Current   | 4.4A          |
| Load Mismatch*  | 5:1           |
| Baseplate Temp. | 65°C          |
| Storage Temp.   | -40°C to 85°C |

\*All phase angles, 25W forward power, current limited to 4.4A for 5 seconds max.

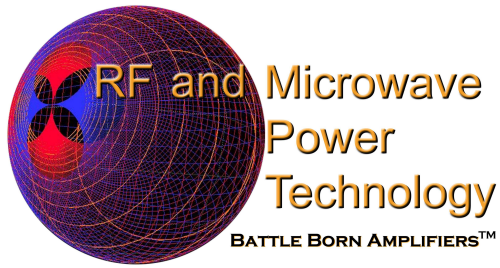
### Option Ordering Info

|  |                 |
|--|-----------------|
| Heatsink and fan                               | RFP30-88-25-HSF |
| Enclosure with DC supply and fan (Mini-System) | RFPS30-88-25    |

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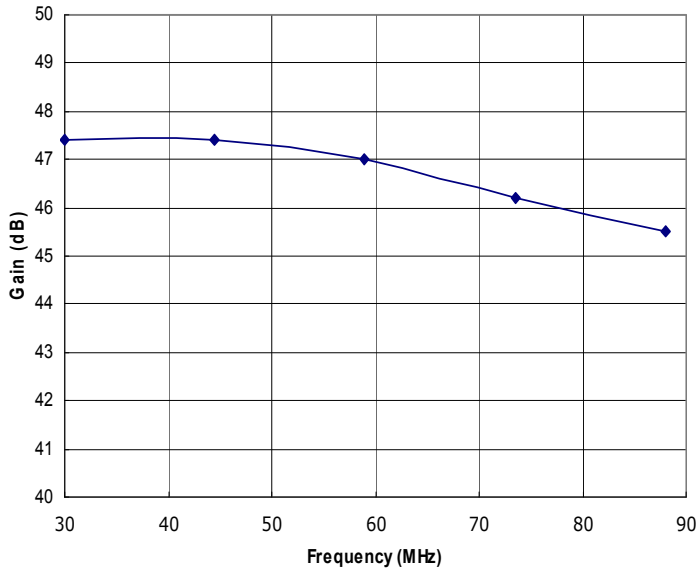
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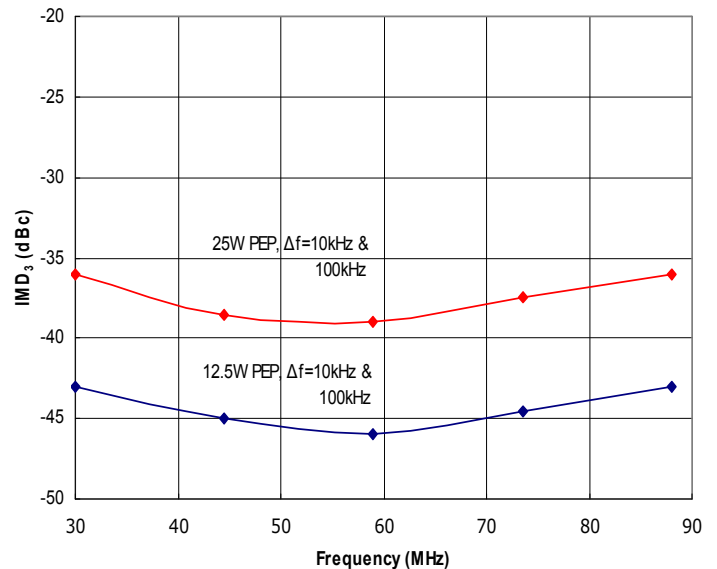


**RFP30-88-25**

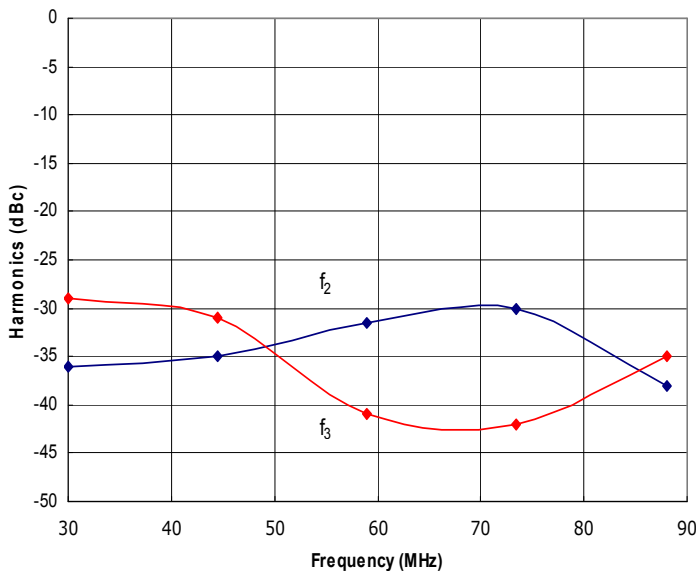
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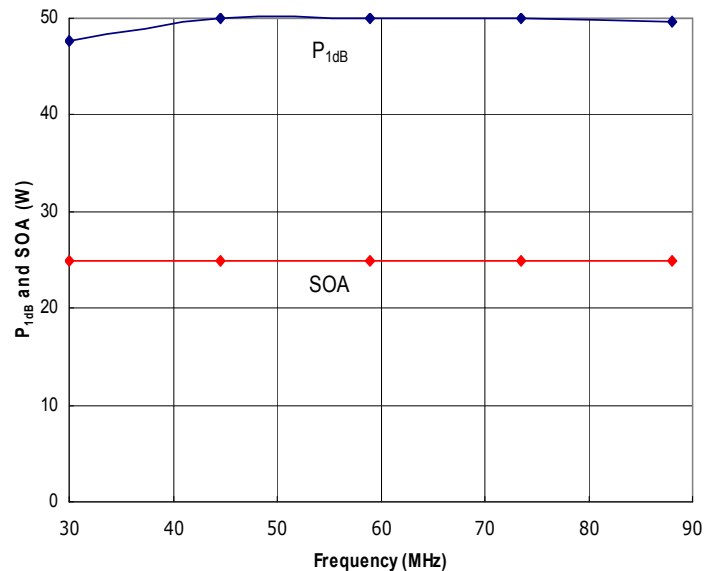
**Figure 1: RFP30-88-25 Typical Gain @ P<sub>out</sub> = 25W.**



**Figure 2: RFP30-88-25 Typical IMD<sub>3</sub> @ 25W and 12.5W PEP, Δf=10kHz and Δf=100kHz. Data is identical for both tone separations.**



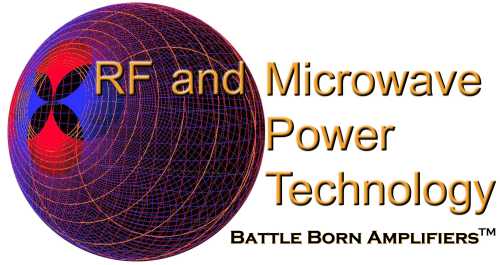
**Figure 3: RFP30-88-25 Typical f<sub>2</sub> and f<sub>3</sub> @ P<sub>out</sub> = 25W.**



**Figure 4: RFP30-88-25 Typical P<sub>1dB</sub> and Safe Operating Area (SOA). The amplifier is capable of delivering much more power than it is safe to generate. Do not exceed the SOA shown above.**

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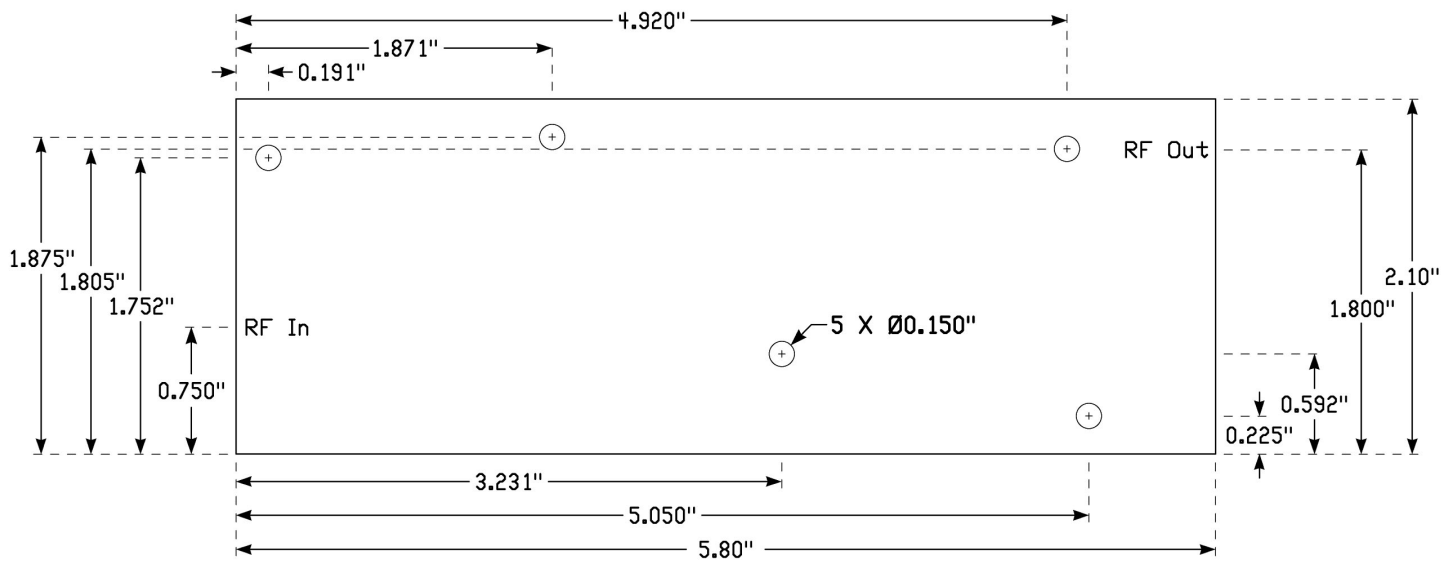




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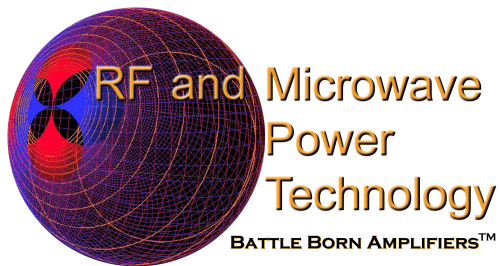
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**Amplifier Mounting Hole and RF Locations**



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High Performance Amplifier**

**Instructions for Amplifier Use**

- 1) If not supplied with a heatsink, apply a layer of high quality thermal grease (Wakefield Type 120 or equivalent) to the underside of the amplifier baseplate. Thinner is better, but ensure that when mounted to your heatsink, contact across the *entire* baseplate is made. Gaps and air bubbles will significantly reduce cooling, leading to possible amplifier damage. Use five #6-32 screws to mount the amplifier to your heatsink.
- 2) Guarantee sufficient airflow through the heatsink fins to keep the maximum baseplate temperature at or less than that specified in the Maximum Ratings section. Contact RFMPT for details on how to qualify your heatsink's performance, if needed.
- 3) Connect a proper signal source to the RF IN connector, and desired load to the RF OUT connector. Torque connectors to industry standards for the type supplied with the amplifier.
- 4) Connect DC  $V_{supply}$  to the terminal provided. Solder a ground wire to the GND pad. Ensure that the connections are of proper polarity, and within the voltage range in the Maximum Ratings section.
- 5) Apply DC power and sufficient RF drive to achieve desired output level. Ensure that the Safe Operating Area (SOA) power level indicated in Figure 4 is not exceeded, or amplifier damage may occur, and will void the warranty.
- 6) To disconnect the amplifier, first remove the RF drive, then DC power, then the RF connections.

Contact the factory at [sales@rfmpt.com](mailto:sales@rfmpt.com) with any questions, or for special options, testing requirements, and/or operating conditions not specified in this document.

**Document Control**

| Revision | Date       | Notes  |
|----------|------------|--|
| A        | 6-29-2015  | Production release.  |
| B        | 11-30-2017 | Updated mechanical specifications, options, company name and logo. |
|          |            |  |
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