

**RFP1.5-30-35**

**1.5-30MHz 35W Class A High Performance Amplifier**

- ❖ **Class A 35W amplifier**
- ❖ **1.5-30MHz bandwidth**
- ❖ **47dB typical gain**
- ❖ **+/- 0.2dB typical gain flatness**
- ❖ **Temperature-compensated bias**
- ❖ **TTL disable**
- ❖ **Available with heatsink and fan**



Representative image.

The RFP1.5-30-35 is a 35W Class A amplifier, excellent as a driver stage in military, commercial, industrial, or scientific systems. Its high gain allows it to be driven to full power from signal generator levels. It utilizes a combination of three active device technologies for optimum performance and ruggedness, and is supplied with SMA input and output connectors.

<b>Specifications</b>				
$V_{sup} = +28VDC, I_{DQ} = 5.7A, P_{out} = 35W, T_{base} = 40^{\circ}C, Z_{load} = 50\Omega$				
Parameter	Min	Typ	Max	Units
Freq. Range	1.5		30	MHz
$P_{1dB}$	55	See Figure 4		W
Input Power		-2	0	dBm
Gain	45.4	47.4		dB
Gain Flatness		+/-0.2	+/-0.5	dB
Drain Current		5.8	6.1	A
Efficiency	20	22		%
IRL		-30	-20	dB
$f_2$		-36	-28	dBc
$f_3$		-30	-25	dBc
$IMD_3$ 35W PEP, $\Delta f=10kHz$ and 100kHz		-38	-32	dBc
Dimensions	2.10 X 5.80 X 1.40 (53.34 X 147.32 X 35.56)			inch (mm)

<b>Maximum Ratings</b>	
Operation beyond these ratings will void warranty.	
Parameter	Value
$V_{supply}$	24-28VDC
Bias Current	5.7A
Drain Current	6.5A
Load Mismatch *	5:1
Operating Baseplate Temperature **	+5°C to +65°C (Non-condensing)
Storage Temperature	-40°C to +85°C

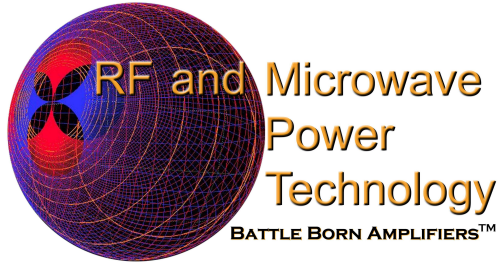
\* All phase angles, 35W forward power, current limited to 6.5A for 5 seconds max.

\*\* See Caution notes on Page 4.

<b>Option Ordering Info</b>	
Heatsink and fan	RFP1.5-30-35-HSF

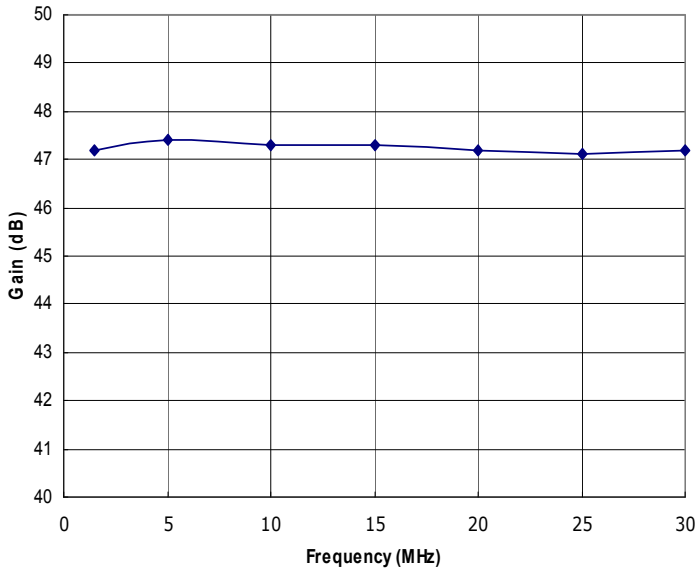
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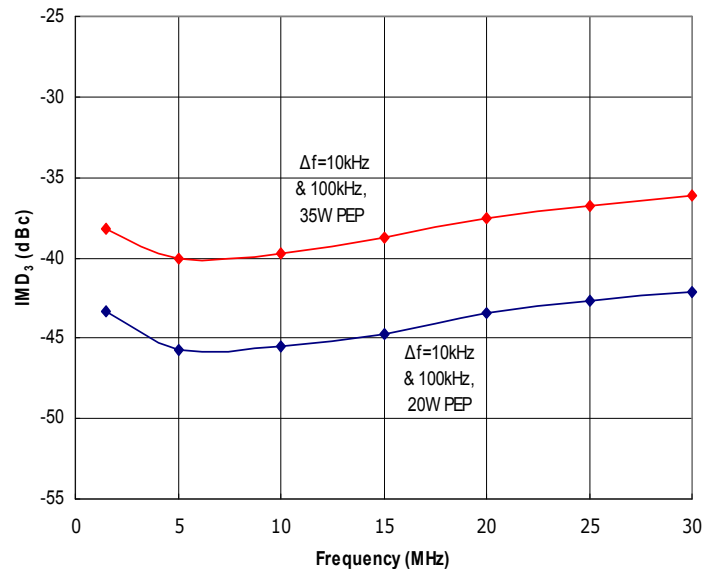


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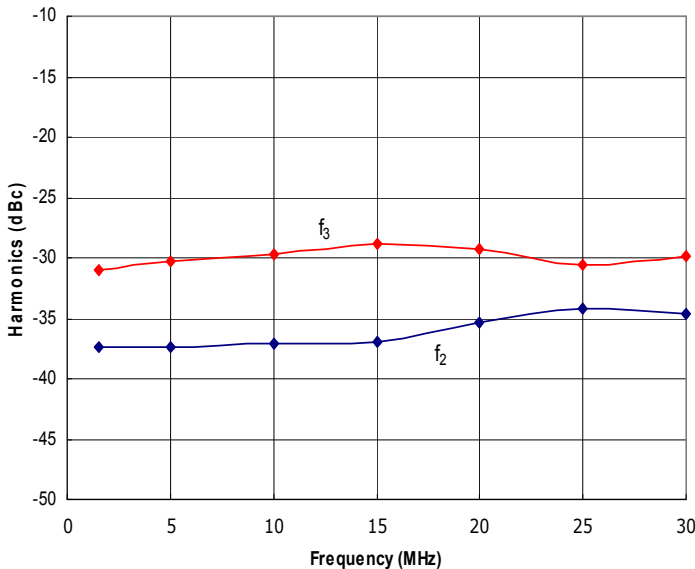
**1.5-30MHz 35W Class A High Performance Amplifier**



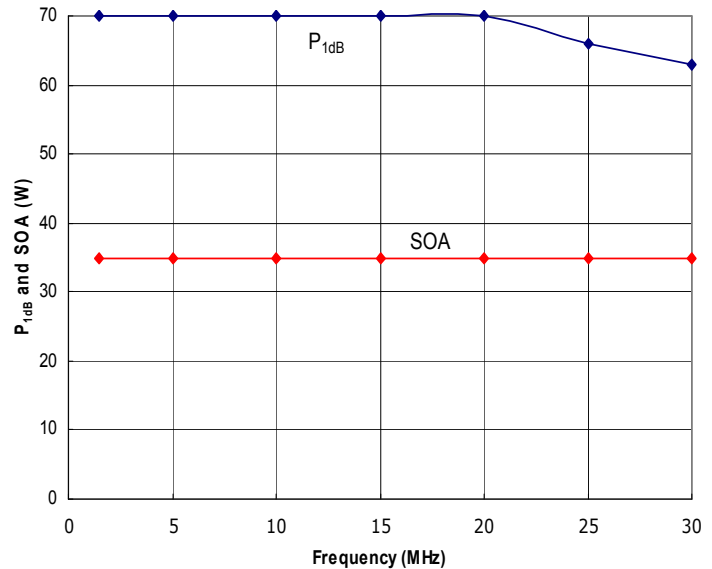
**Figure 1: RFP1.5-30-35 Typical Gain @ P<sub>out</sub> = 35W.**



**Figure 2: RFP1.5-30-35 Typical IMD<sub>3</sub> @ 35W and 20W PEP, Δf=10kHz and Δf=100kHz.**



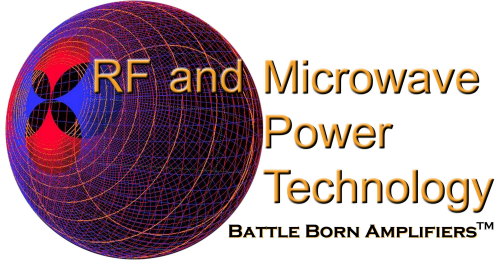
**Figure 3: RFP1.5-30-35 Typical f<sub>2</sub> and f<sub>3</sub> @ P<sub>out</sub> = 35W.**



**Figure 4: RFP1.5-30-35 Typical P<sub>1dB</sub> and Safe Operating Area (SOA). Do not exceed the SOA without first contacting RFMPT to discuss your application.**

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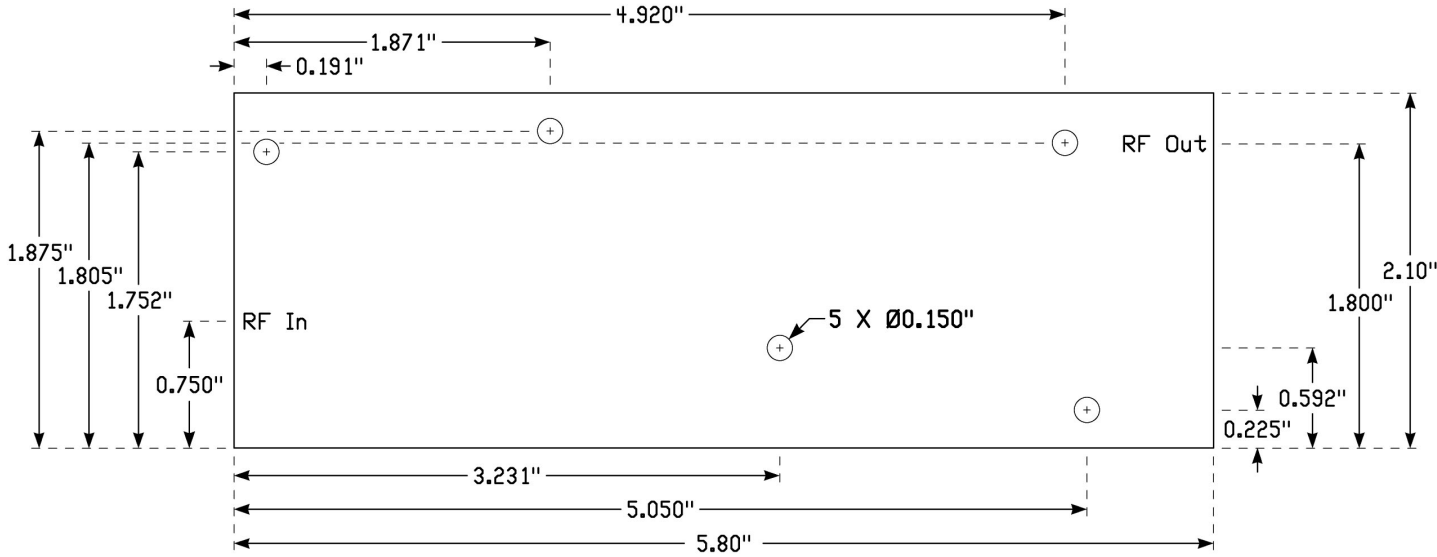




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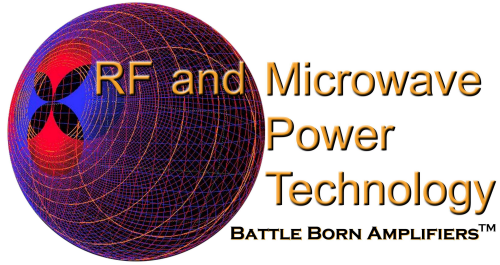
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**Amplifier Mounting Hole and RF Locations**



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**Caution**

Due to the very high Class A idle current of this amplifier, bias **must** be disabled when not operating at rated CW RF output, when the baseplate is at maximum rated temperature. For operating conditions other than 35W CW output, such as with modulated or pulsed signals, please consult the factory for cooling guidance prior to purchase.

**Instructions for Amplifier Use**

- 1) If not supplied with a heatsink, apply a layer of high quality thermal grease (Wakefield Type 120 or equivalent, Wakefield Type 122 preferred) 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 directly under the output transistor 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, then 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) Disable is active high at 5VDC, and disables bias to the driver and output transistors. The MMIC is powered whenever Vcc is applied to the amplifier.
- 7) 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	6-20-2018	Initial release.

