RF and Microwave Power Technology

BATTLE BORN AMPLIFIERS™

RFP2-30-25

2-30MHz 25W Class A High Performance Amplifier

- **Class A 25W linear amplifier**
- **2-30MHz bandwidth**
- **48dB typical gain**
- **+/- 0.6dB typical gain flatness**
- **Temperature-compensated bias**
- **TTL disable**
- **Available with heatsink and fan, or enclosed with DC supply and fan**

Representative image.

The RFP2-30-25 is a Class A high performance amplifier, outstanding as a driver stage in military communication, commercial, industrial, 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°C, Z_{load} = 50Ω

Parameter	Min	Typ	Max	Units
Freq. Range	2		30	MHz
P_{1dB}	25	See Figure 4		W
Input Power		-4	0	dBm
Gain	44	48		dB
Gain Flatness		+/-0.6	+/-1.5	dB
Drain Current		4.0	4.2	A
Efficiency	21	22		%
IRL		-30	-20	dB
f_2		-36	-28	dBc
f_3		-33	-25	dBc
IMD_3 25W PEP, Δf=10kHz See Fig. 2 for 100kHz		-40	-35	dBc
Dimensions	2.10 X 5.80 X 1.40 (53.34 X 147.32 X 35.56)			inch (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 Temperature	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	RFP2-30-25-HSF
Enclosure with DC supply and fan (Mini-System)	RFPS2-30-25

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MADE IN AMERICA

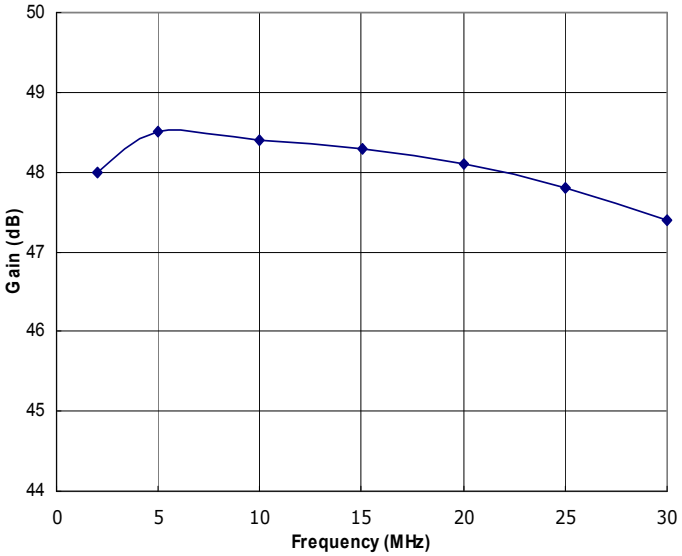

Figure 1: RFP2-30-25 Typical Gain @ P_{out} = 25W.

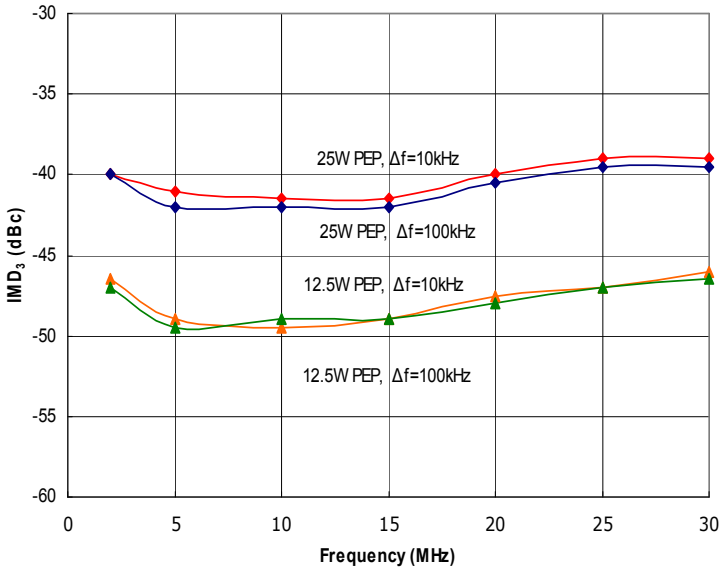

Figure 2: RFP2-30-25 Typical IMD_3 @ 25W and 12.5W PEP, Δf=10kHz and Δf=100kHz.

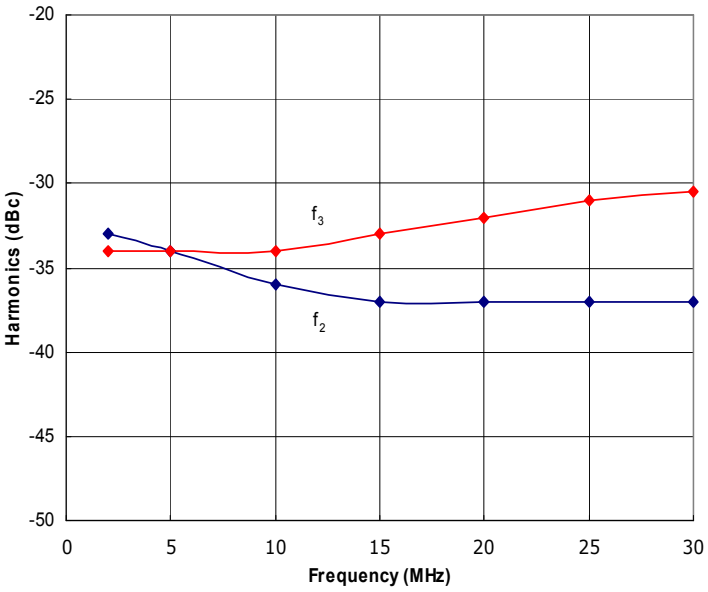

Figure 3: RFP2-30-25 Typical f_2 and f_3 @ P_{out} = 25W.

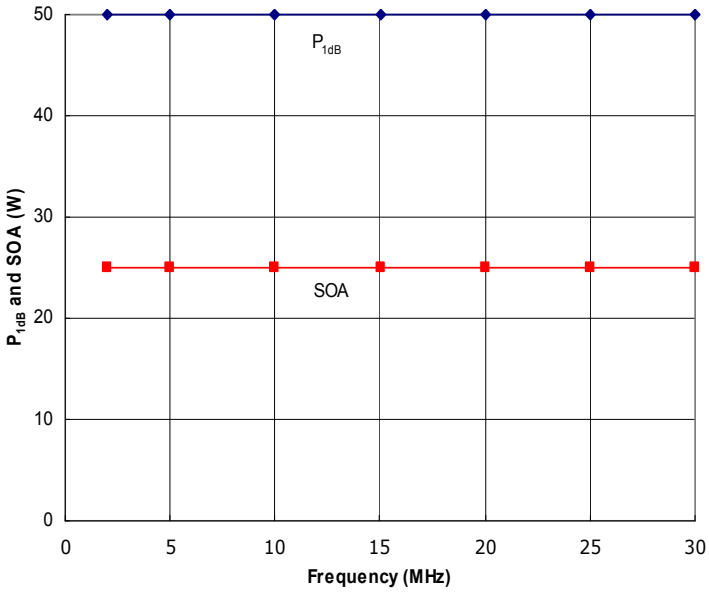

Figure 4: RFP2-30-25 Typical P_{1dB} and Safe Operating Area (SOA). The amplifier is capable of delivering much more power than it is safe to generate. Do not exceed the SOA shown above.

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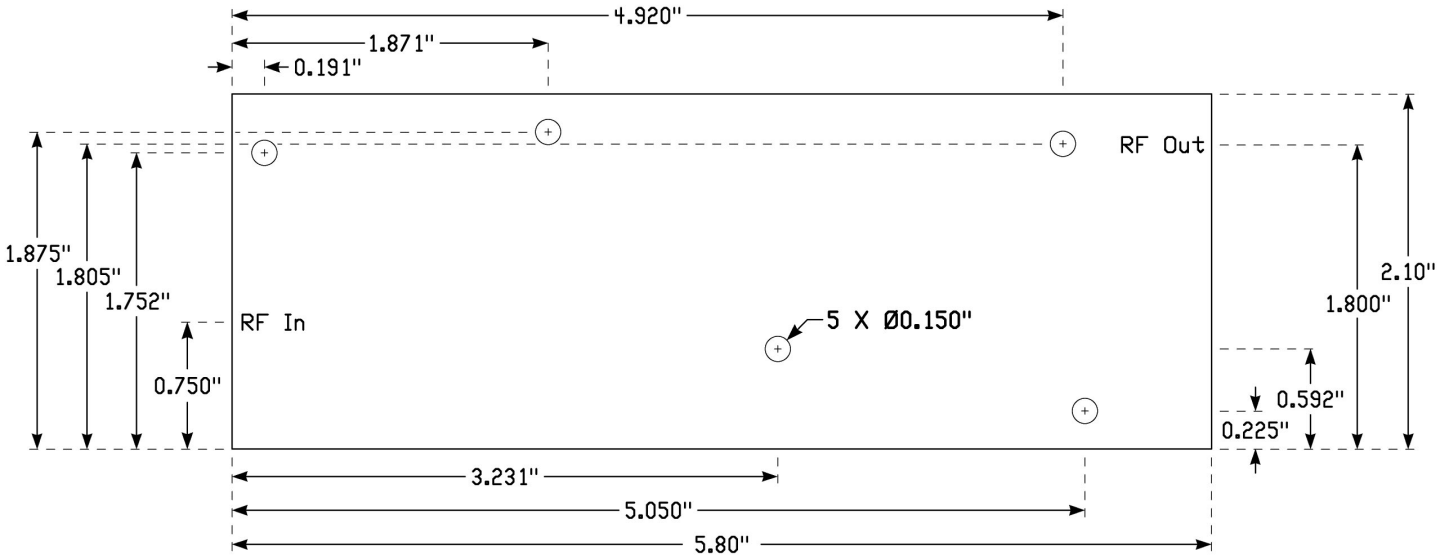
Amplifier Mounting Hole and RF Locations



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 with any questions, or for special options, testing requirements, and/or operating conditions not specified in this document.

Document Control

Revision	Date	Notes
Pre	4-26-2015	Preliminary release.
A	6-7-2015	Production release.
B	11-29-2017	Updated mechanical specifications, options, company name and logo.