

RFP170-230-400XR

170-230MHz 400W Class A/AB High Performance Amplifier

- ❖ **Class A/AB 400W XR-rated linear amplifier**
- ❖ **170-230MHz bandwidth**
- ❖ **57dB typical gain**
- ❖ **Excellent gain flatness**
- ❖ **Temperature-compensated bias**
- ❖ **50 ohms input/output**
- ❖ **Includes disable pad and SMA/N connectors**



The RFP170-230-400XR is a high power, high gain Class A/AB pallet amplifier. Its XR rating ensures ruggedness for driving mismatched loads such as antennae in broadcast or other communication systems. Its high gain eliminates the need for a separate driver, making it a very cost effective solution for medium power systems applications. It is supplied on a nickel plated copper baseplate with SMA input and N output connectors.

Specifications				
$V_{supply} = +50VDC, I_{DQ} = 1.25A, P_{out} = 400W, T_{base} = 50^{\circ}C, Z_{load} = 50\Omega$				
Parameter	Min	Typ	Max	Units
Freq. Range	170		230	MHz
P_{1dB}	400	See Figure 4		W
Input Power		-1	2	dBm
Gain	54	57		dB
Gain Flatness		+/-0.6	+/-1.0	dB
Drain Current		13.1	13.7	A
Efficiency	58	61		%
IRL		-18	-14	dB
f_2		-51	-39	dBc
f_3		-28	-20	dBc
IMD ₃ 400W PEP, $\Delta f=100kHz$. See Fig. 2 for 300W PEP.		-31	-26	dBc
Dimensions	3.00 X 6.50 X 1.60 (76.20 X 165.10 X 40.64)			inch (mm)

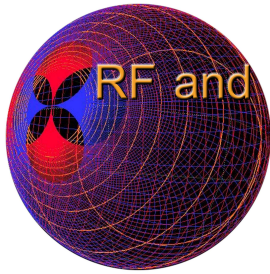
Maximum Ratings	
Operation beyond these ratings may damage amplifier.	
Parameter	Value
V_{supply}	46-50VDC
Bias Current	2.0A
Drain Current	15A
Load Mismatch*	5:1
Baseplate Temperature	65°C
Storage Temperature	-40°C to 85°C

*All phase angles, 400W forward power, current limited to 15A for 5 seconds max.

Option Ordering Info
Contact RFMPT to discuss special requirements.

RF and Microwave Power Technology, LLC • 2380 Solitude Drive • Reno, NV 89511 USA
 (775) 842-3280 • sales@rfmpt.com • www.rfmpt.com
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High Performance Amplifier

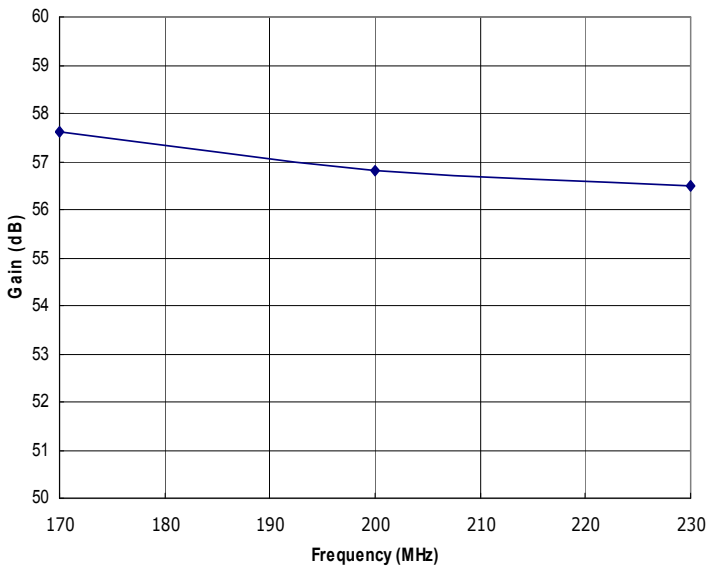


Figure 1: RFP170-230-400XR Typical gain @ P_{out}=400W.

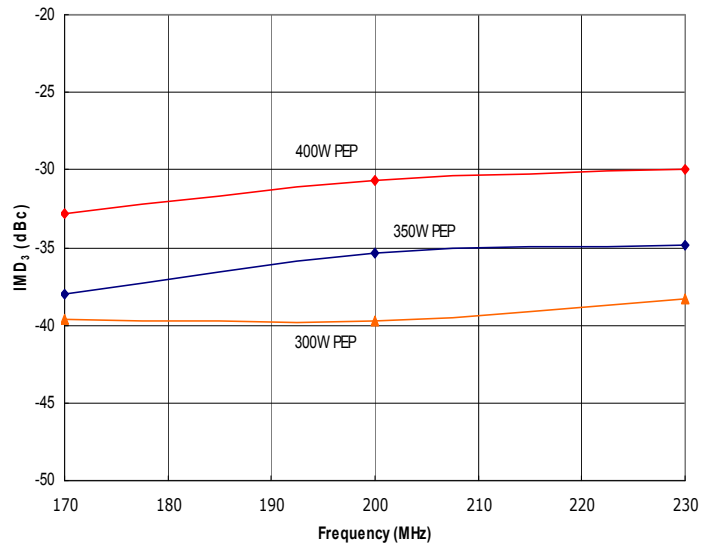


Figure 2: RFP170-230-400XR Typical IMD₃ @ 400W, 350W and 300W PEP, Δf=100kHz.

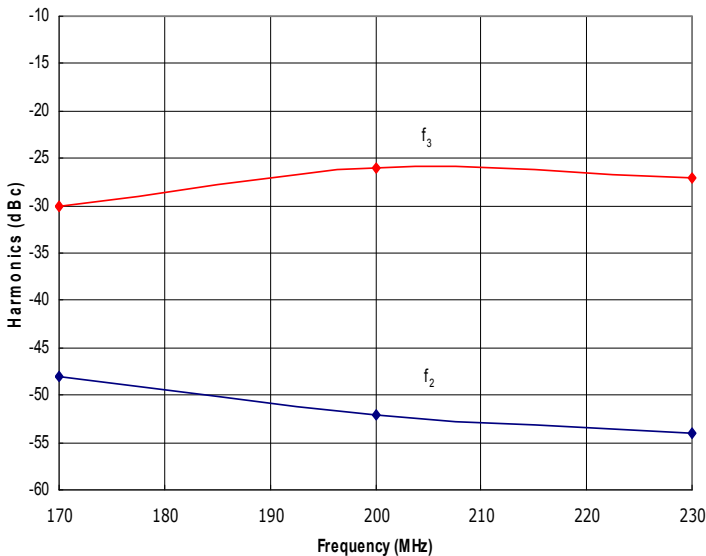


Figure 3: RFP170-230-400XR Typical f₂ and f₃ @ P_{out}=400W.

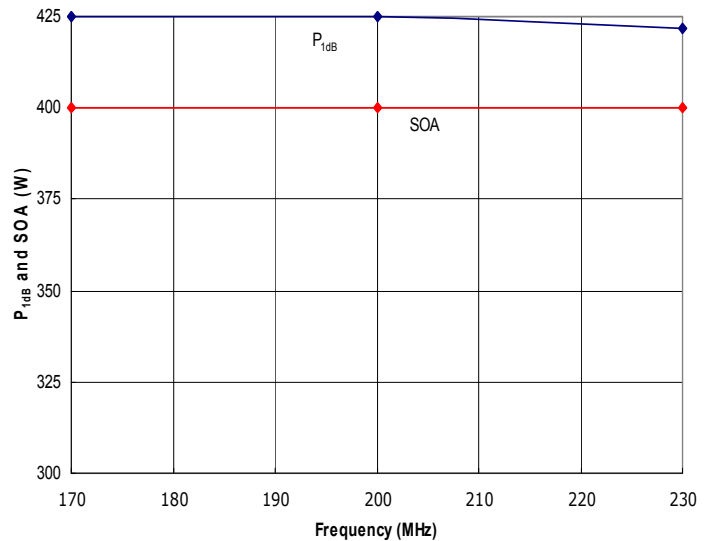


Figure 4: RFP170-230-400XR Typical P_{1dB} and Safe Operating Area (SOA). The SOA assumes a 50 ohm load and adequate cooling of output transformers. Do not exceed the SOA shown above without first contacting RFMPT to discuss your application.

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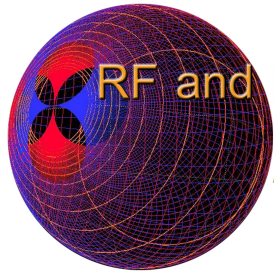
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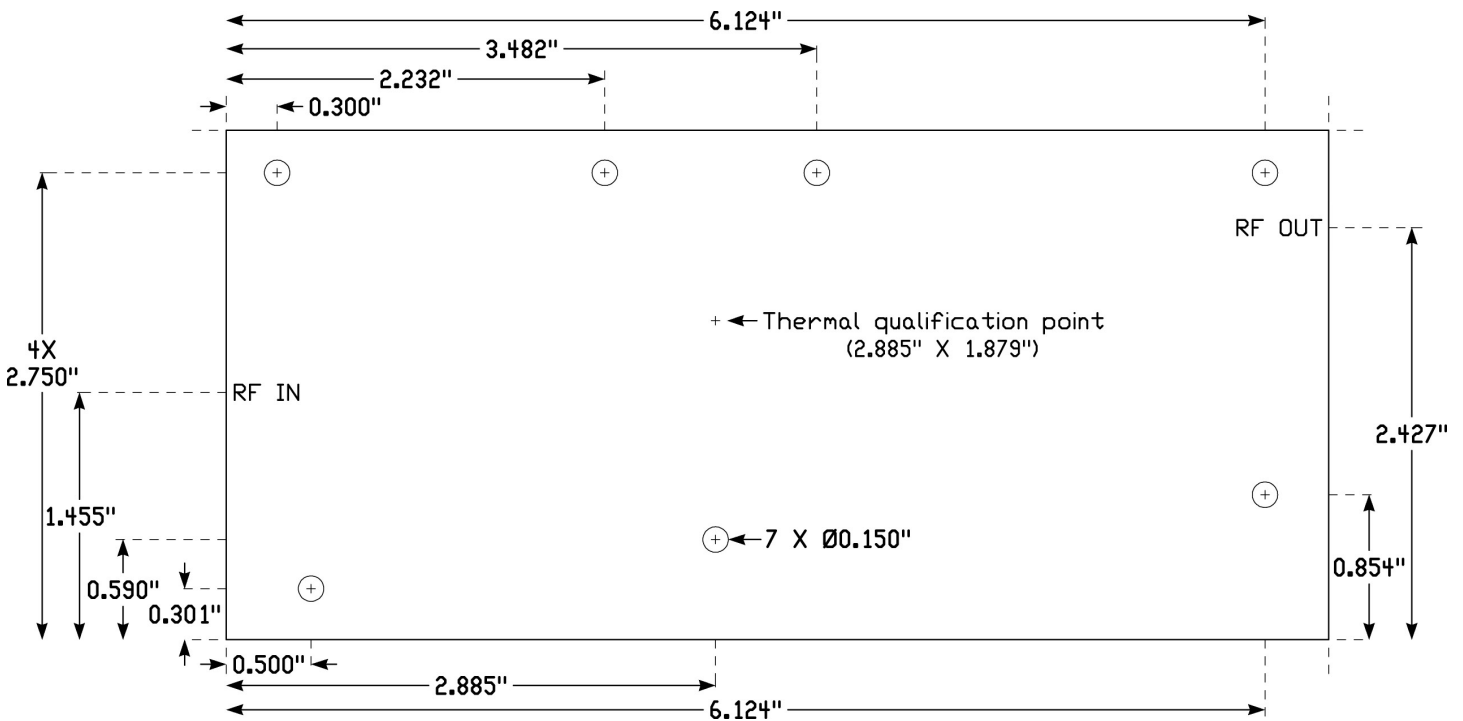
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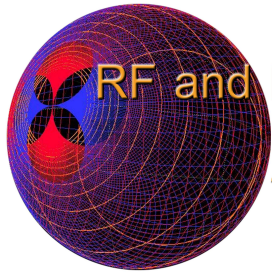
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Amplifier Mounting Hole and RF Locations





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Instructions for Amplifier Use

- 1) Apply a layer of high quality thermal grease (Wakefield Type 120 or better) 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 seven #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. Refer to the drawing on Page 3 for the point at which to perform thermal qualification testing. 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 types supplied with the amplifier.
- 4) Connect DC V_{supply} and Ground wires to the terminal and pad provided. 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) 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
A	7-9-17	Initial release.

