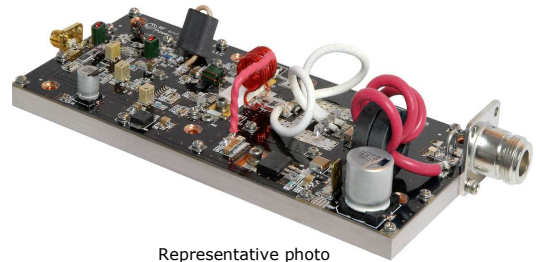


**225-400MHz 350W Class A/AB
High Performance Amplifier
*Preliminary***

- ❖ **Class A/AB 350W XR-rated linear amplifier**
- ❖ **225-400MHz bandwidth**
- ❖ **58dB typical gain**
- ❖ **Excellent gain flatness, +/- 0.5dB typical**
- ❖ **Temperature-compensated bias**
- ❖ **50 ohms input/output**
- ❖ **Includes disable pad and SMA/N connectors**



Representative photo

The RFP225-400-350XR is a high power, high gain Class A/AB pallet amplifier. Its XR rating ensures ruggedness for driving mismatched loads in military or commercial avionics communications 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.

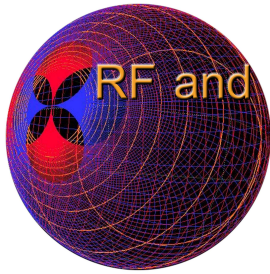
Specifications				
$V_{supply} = +50VDC, I_{DQ} = 1.15A, P_{out} = 350W, T_{base} = 50^{\circ}C, Z_{load} = 50\Omega$				
Parameter	Min	Typ	Max	Units
Freq. Range	225		400	MHz
P_{1dB}	350	See Figure 4		W
Input Power		-2.6	0.4	dBm
Gain	55	58		dB
Gain Flatness		+/-0.5	+/-1.0	dB
Drain Current		12.6	13.7	A
Efficiency	51	56		%
IRL		-25	-18	dB
f_2		-52	-34	dBc
f_3		-47	-20	dBc
IMD ₃ 350W PEP, $\Delta f=100kHz$. See Fig. 2 for 300W PEP.		-31	-26	dBc
Dimensions	3.00 X 5.80 X 1.30 (76.20 X 147.32 X 33.02)			inch (mm)

Maximum Ratings	
Operation beyond these ratings may damage amplifier.	
Parameter	Value
V_{supply}	46-50VDC
Bias Current	1.5A
Drain Current	14.5A
Load Mismatch*	5:1
Baseplate Temperature	65°C
Storage Temperature	-40°C to 85°C

*All phase angles, 350W forward power, current limited to 14.5A for 5 seconds max.

Option Ordering Info
Contact RFMPT to discuss special requirements.





RF and Microwave
Power
Technology

RFP225-400-350XR

225-400MHz 350W Class A/AB
High Performance Amplifier
Preliminary

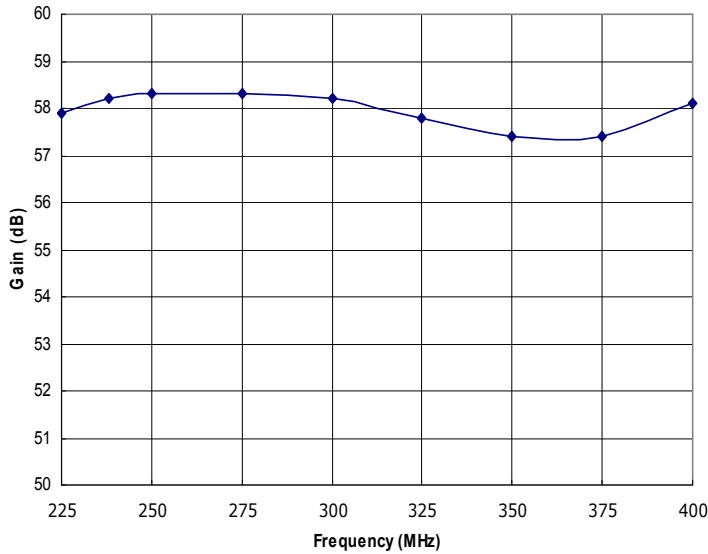


Figure 1: RFP225-400-350XR Typical gain @ P_{out}=350W.

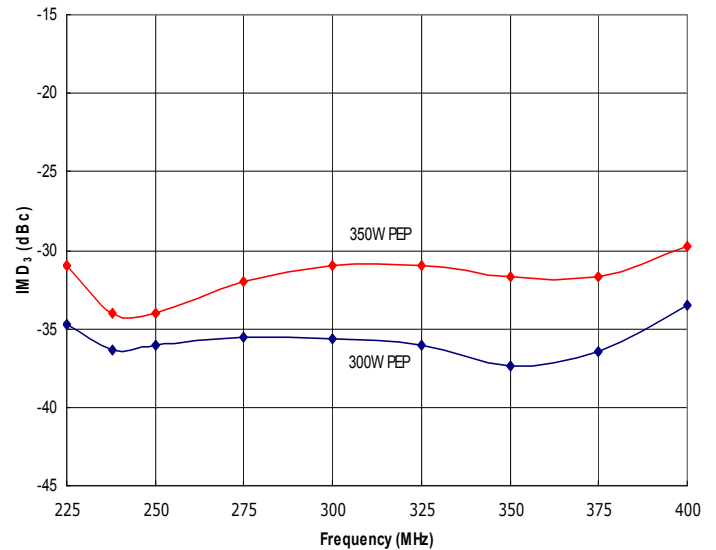


Figure 2: RFP225-400-350XR Typical IMD₃ @ P_{out}=350W and 300W PEP, Δf=100kHz.

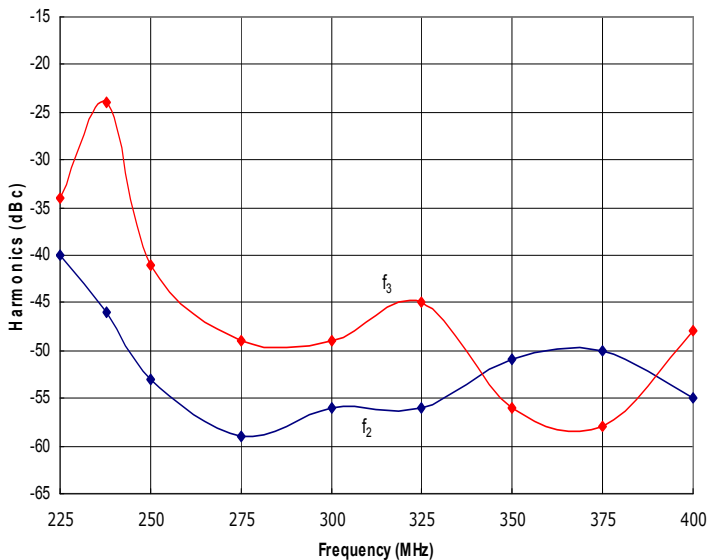


Figure 3: RFP225-400-350XR Typical f₂ and f₃ @ P_{out}=350W.

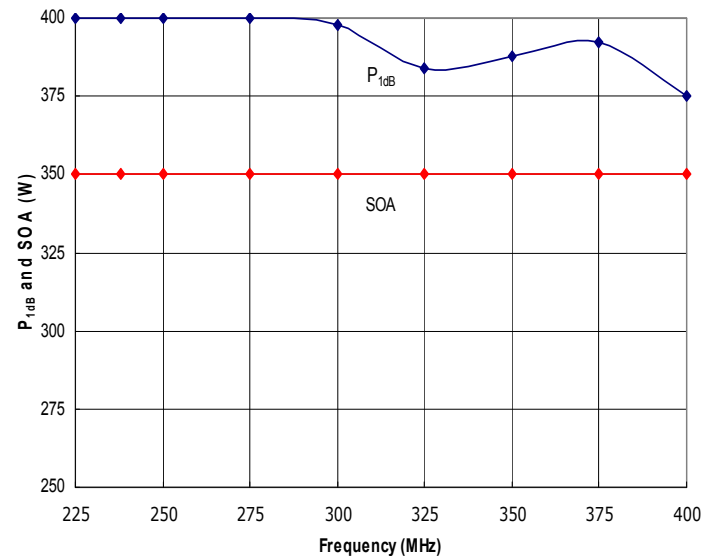
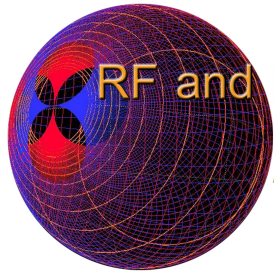


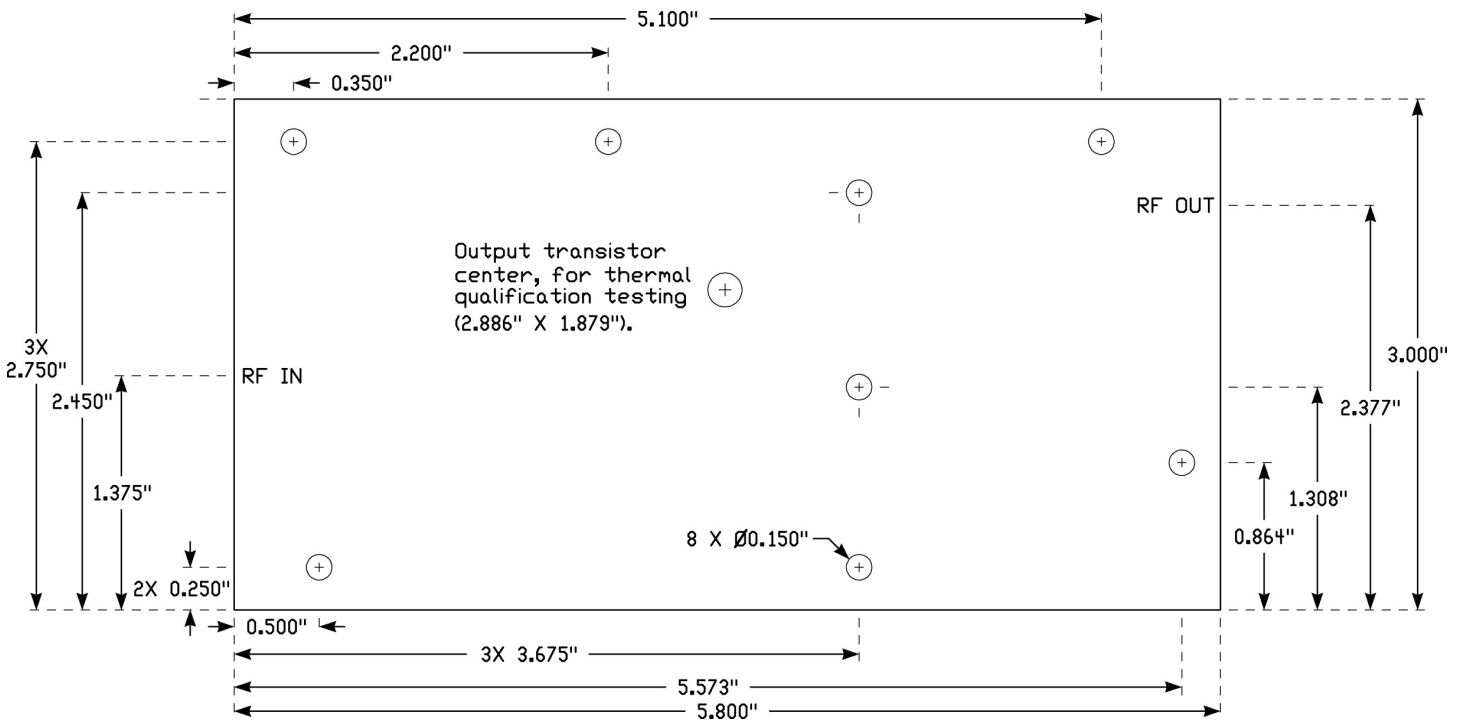
Figure 4: RFP225-400-350XR Typical P_{1dB} and Safe Operating Area (SOA). The SOA assumes a 50 ohm load and adequate cooling of output components and transformers. Do not exceed the SOA shown above without first contacting RFMPT to discuss your application.

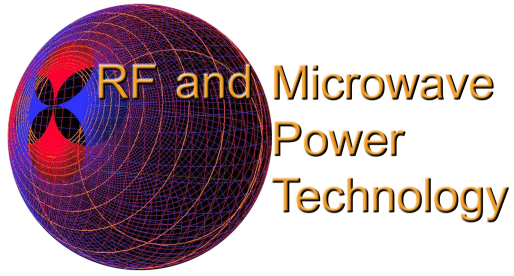
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Amplifier Mounting Hole and RF Locations





**225-400MHz 350W Class A/AB
High Performance Amplifier
*Preliminary***

Instructions for Amplifier Use

- 1) **Important:** The output match components (capacitors, inductors *and* coax cables) can become very hot during operation. Allow them to cool after RF has been turned off before handling the amplifier.
- 2) Although not strictly required for standard broadband applications, the use of a high performance thermal compound is highly recommended. For extended full power CW use in the upper 50MHz of the amplifier's operational bandwidth, and/or into mismatched loads, the use of a high performance compound (Wakefield 122 or better) is **required**.

For standard broadband applications into well-matched loads, 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 pockets will significantly reduce cooling, leading to possible amplifier damage. Use eight #6-32 screws to mount the amplifier to your heatsink.
- 3) 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 cooling system's performance, if needed.
- 4) In addition to cooling through the amplifier's baseplate, ensure that forced air flow is directed over the top of the amplifier, to cool the output match network components. Do not allow stagnant air directly above the amplifier, nor attempt to put it into a sealed enclosure. Contact RFMPT for airflow guidance, if necessary.
- 5) 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.
- 6) 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.
- 7) 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.
- 8) 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	9-13-17	Preliminary release; engineering data.

