

RFP140-180-450XR-P

140-180MHz 450W Class A/AB High Performance Pulse Amplifier

- ❖ Class A/AB 450W XR-rated pulse amplifier
- ❖ 140-180MHz bandwidth
- ❖ 28dB typical gain (Higher gain version available)
- ❖ Excellent gain flatness
- ❖ Temperature-compensated bias
- ❖ 50 ohms input/output
- ❖ Bias disable pad and SMA/N connectors



The RFP140-180-450XR-P is a high power, high gain Class A/AB pulse pallet amplifier. Its XR rating ensures ruggedness for driving mismatched loads such as antennae in radar systems. It requires less than 1W RF input power, making it a very cost effective solution for medium power systems applications. It is supplied on an aluminum baseplate with SMA input and N output connectors.

Specifications

$V_{supply} = +50VDC$, $I_{DQ} = 0.50A$, $P_{out} = 450W$, $T_{base} = 50^{\circ}C$, $Z_{load} = 50\Omega$

Parameter	Min	Typ	Max	Units
Freq. Range	140		180	MHz
$P_{out, peak}$	450			W
$P_{in, peak}$		28	30	dBm
Pulse Width	1		1000	μ sec
Duty Cycle			20	%
Gain	26	28.5		dB
Gain Flatness		+/-0.3	+/-0.5	dB
Drain Current		14.5	15	A_{peak}
Pulse Efficiency	60	62		%
IRL		-30	-20	dB
f_2		-34	-25	dBc
f_3		-26	-20	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	1.0A
Drain Current	$16A_{peak}$
Load Mismatch*	5:1
Baseplate Temperature	$85^{\circ}C$
Storage Temperature	$-40^{\circ}C$ to $85^{\circ}C$

*All phase angles, 450W forward power, current limited to 16A during pulses.

Option Ordering Info

Contact RFMPT to discuss higher gain or other special requirements.

RF and Microwave Power Technology, LLC • 2380 Solitude Drive • Reno, NV 89511 USA

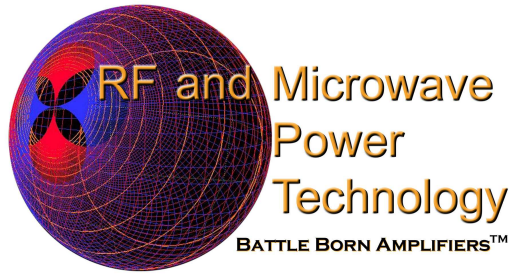
(775) 842-3280 • sales@rfmpt.com • www.rfmpt.com

Specifications contained herein are subject to change without notice.

RF and Microwave Power Technology, LLC assumes no liability for the use of this information.

© 2022 RF and Microwave Power Technology, LLC





RFP140-180-450XR-P

140-180MHz 450W Class A/AB High Performance Pulse Amplifier

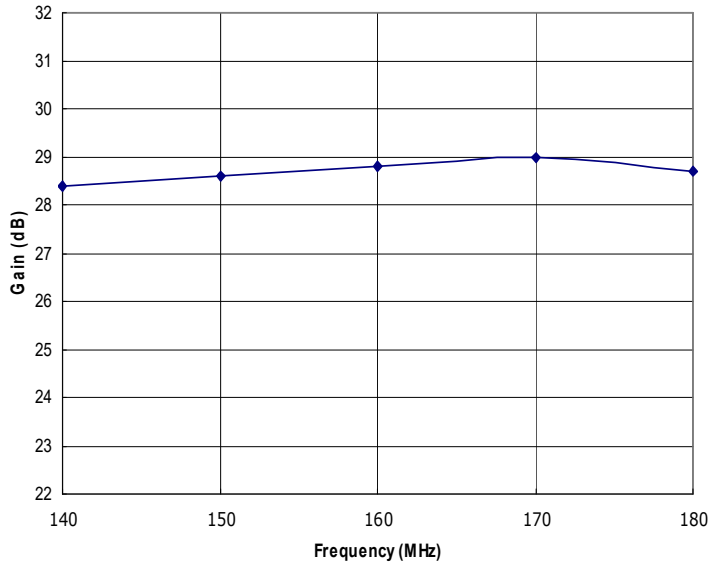


Figure 1: RFP140-180-450XR-P Typical gain @ P_{out}=450W.

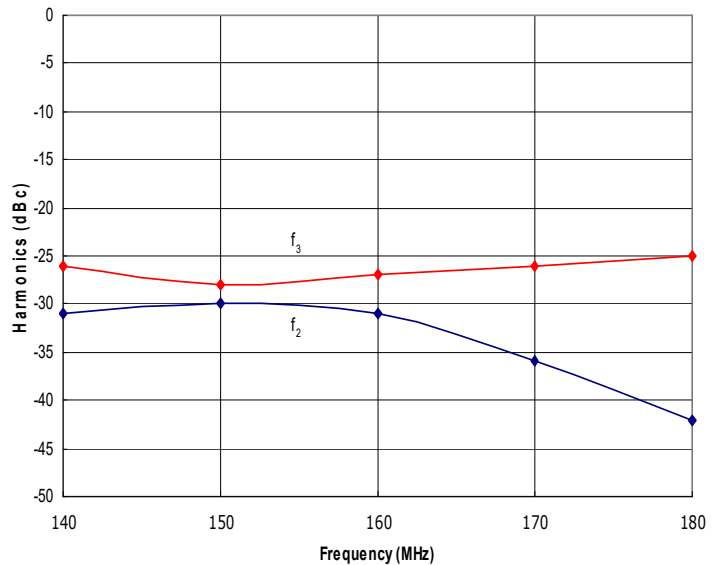


Figure 2: RFP140-180-450XR-P Typical f₂ and f₃ @ P_{out}=450W.

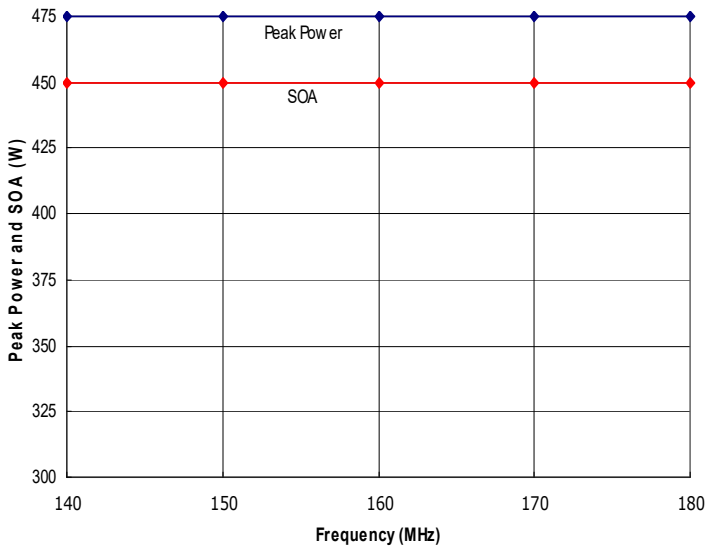
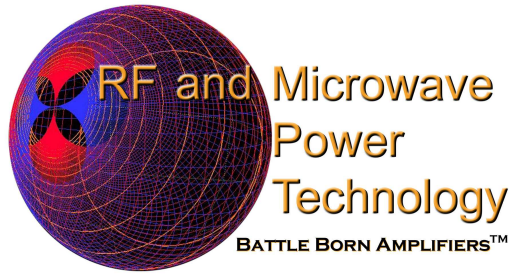


Figure 3: RFP140-180-450XR-P Typical Peak Power and Safe Operating Area (SOA). The SOA assumes a 50 ohm load. Do not exceed the SOA shown above without first contacting RFMPT to discuss your application.

RF and Microwave Power Technology, LLC • 2380 Solitude Drive • Reno, NV 89511 USA
 (775) 842-3280 • sales@rfmpt.com • www.rfmpt.com
 Specifications contained herein are subject to change without notice.
 RF and Microwave Power Technology, LLC assumes no liability for the use of this information.
 © 2022 RF and Microwave Power Technology, LLC

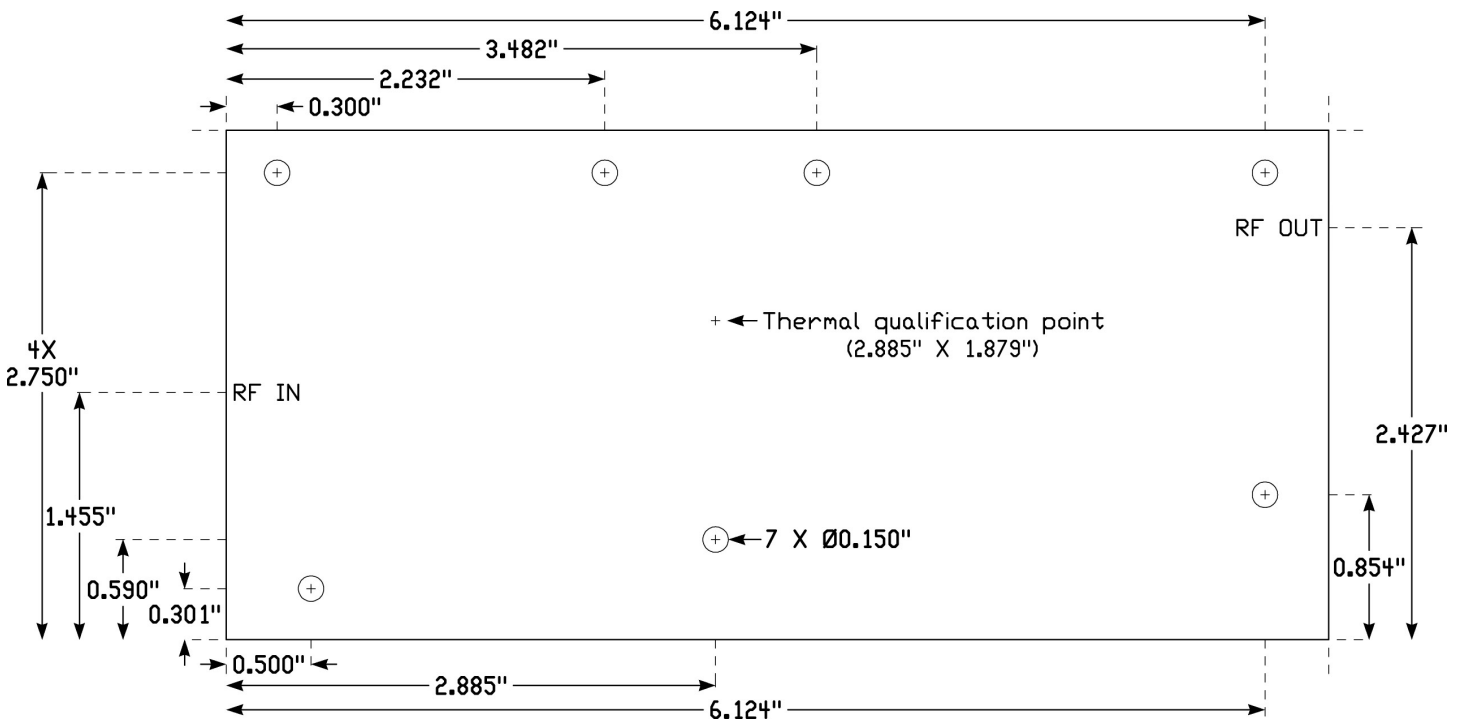




RFP140-180-450XR-P

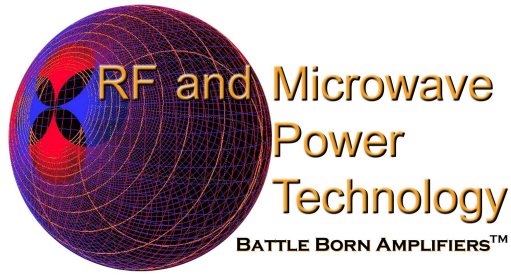
**140-180MHz 450W Class A/AB
High Performance Pulse Amplifier**

Amplifier Mounting Hole and RF Locations



RF and Microwave Power Technology, LLC • 2380 Solitude Drive • Reno, NV 89511 USA
 (775) 842-3280 • sales@rfmpt.com • www.rfmpt.com
 Specifications contained herein are subject to change without notice.
 RF and Microwave Power Technology, LLC assumes no liability for the use of this information.
 © 2022 RF and Microwave Power Technology, LLC





**140-180MHz 450W Class A/AB
High Performance Pulse Amplifier**

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. This is a pulse mode *only* amplifier, with a maximum duty cycle of 20%. Do *not* operate under CW conditions.
- 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	2-8-22	Initial release.

