RF and Microwave Power Technology

RFPC135-175-150

135-175MHz 150W Class A/AB Amplifier

- **Class A/AB 150W amplifier**
- **135-175MHz bandwidth**
- **51.8dB typical gain**
- **+/- 1.0dB typical gain flatness**
- **Temperature-compensated bias**
- **TTL disable**
- **Available with SMA connectors, heatsink and fan, as a module or a mini-system**

Shown with optional SMA connectors.

The RFPC135-175-150 is a Class A/AB pallet amplifier, designed for the 135-175MHz public safety band. It is excellent as a standalone amplifier, or as a driver in commercial, military, or industrial systems. It utilizes a combination of three active device technologies for optimum performance and ruggedness, and can be driven to full power with signal generator levels.

Specifications

V_{sup} = +28VDC, I_{DQ} = 0.95A, P_{out} = 150W, T_{base} = 25°C, Z_{load} = 50Ω

Parameter	Min	Typ	Max	Units
Freq. Range	135		175	MHz
P_{1dB}	140	See Figure 3		W
Input Power		0	3	dBm
Gain	48.8	51.8		dB
Gain Flatness		+/-1.0	+/-1.5	dB
Drain Current		8.6	9.2	A
Efficiency	58	62		%
IRL		-30	-20	dB
f_2		-49	-39	dBc
f_3		-27	-20	dBc
IMD_3 100W PEP, Δf=10kHz		N/A		dBc
Dimensions	2.00 X 5.70 X 1.10 (50.80 X 144.78 X 27.94)			inch (mm)

Maximum Ratings

Operation beyond these ratings will void warranty.

Parameter	Value
V_{supply}	24-28VDC
Bias Current	1.0A
Drain Current	10A
Load Mismatch*	3:1
Baseplate Temp.	65°C
Storage Temp.	-40°C to 85°C

*All phase angles, 150W forward power, current limited to 10A for 3 seconds max.

Option Ordering Info

SMA connectors	RFPC135-175-150-SMA
Heatsink and fan	RFPC135-175-150-HSF
Module	RFMC135-175-150
Mini-system	RFPCS135-175-150

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MADE IN AMERICA

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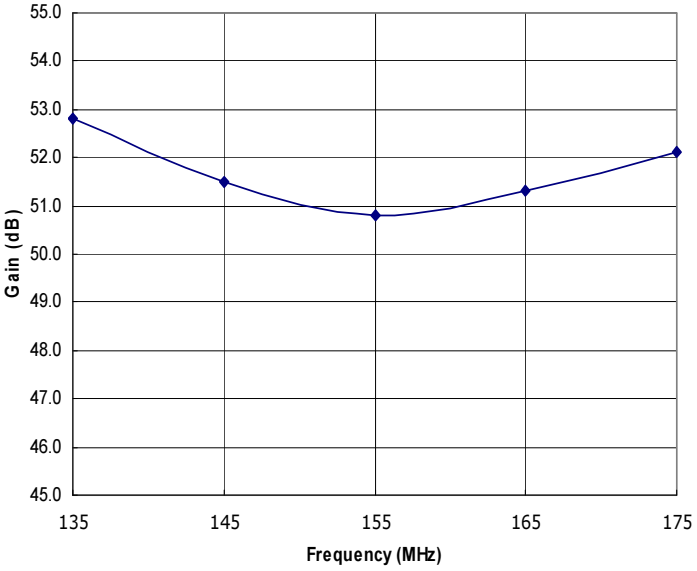


Figure 1: RFPC135-175-150 Typical Gain @ P_{out} = 150W.

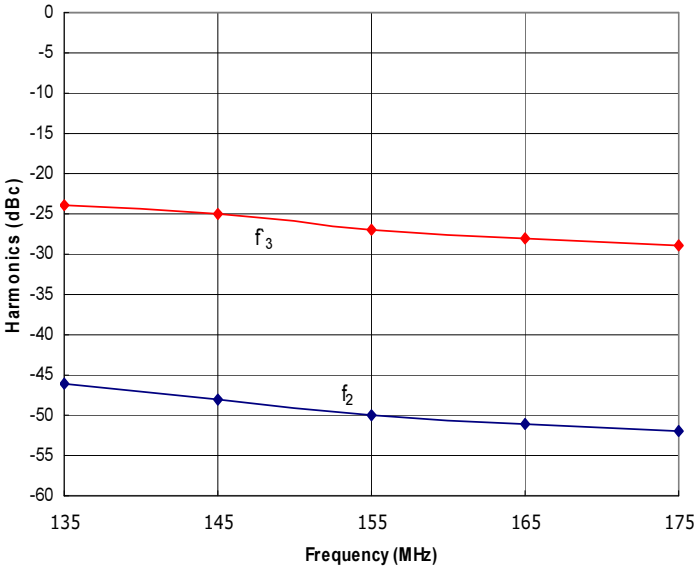


Figure 2: RFPC135-175-150 Typical f_2 and f_3 @ P_{out} = 150W.

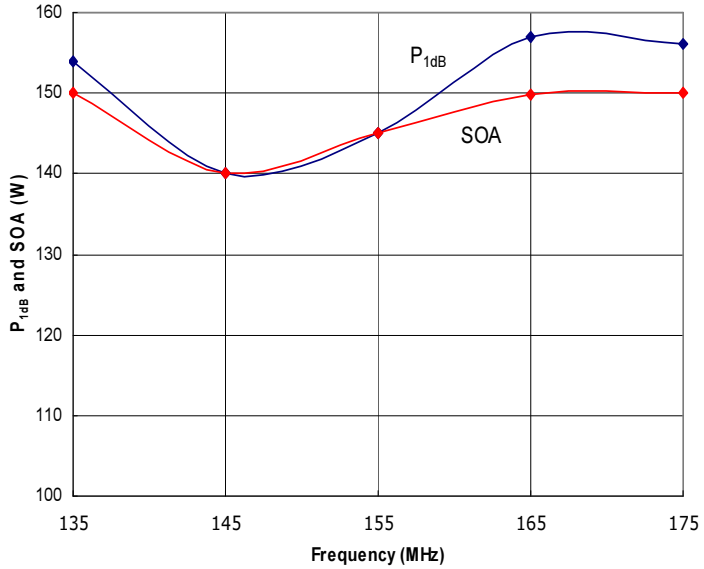
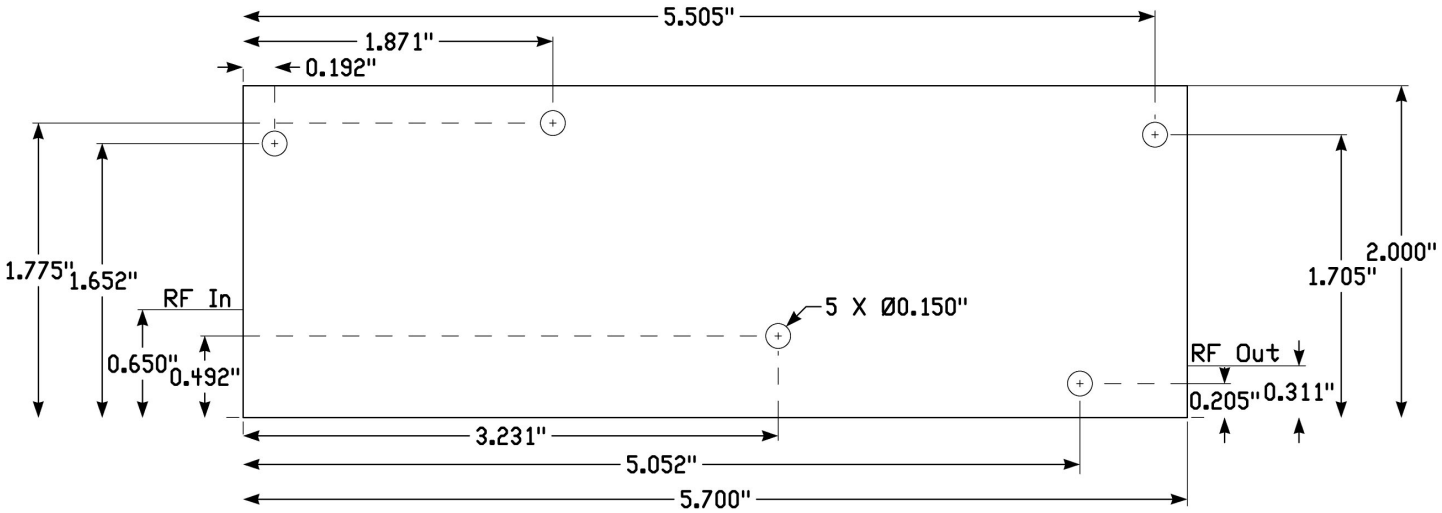


Figure 3: RFPC135-175-150 Typical P_{1dB} and Safe Operating Area (SOA).

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 (or via cable to RF IN pad), and desired load to the RF OUT connector (or via cable to RF OUT pad). Torque connectors, if present, 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 3 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 rfmpt@sbcglobal.net with any questions, or for special options, testing requirements, and/or operating conditions not specified in this document.

Document Control

Revision	Date	Notes
A	11-2-15	Production release.

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