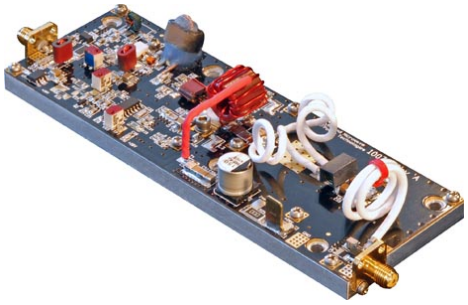
HD30711

Communications Corp.

170-230MHz 50W Class A/AB Amplifier

- **Class A/AB 50W amplifier**
- **170-230MHz bandwidth**
- **50dB typical gain**
- **+/- 0.8dB 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 HD30711 is a Class A/AB pallet amplifier, designed for the 170-230MHz band. It is excellent as a standalone amplifier, or as a driver stage in commercial, military, industrial or scientific 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} = 0.75A, P_{out} = 50W, T_{base} = 25°C, Z_{load} = 50Ω

Parameter	Min	Typ	Max	Units
Freq. Range	170		230	MHz
P_{1dB}	50	See Figure 4		W
Input Power		-3	0	dBm
Gain	47	50		dB
Gain Flatness		+/-0.8	+/-1.5	dB
Drain Current		3.7	4.0	A
Efficiency	45	48		%
IRL		-30	-20	dB
f_2		-35	-27	dBc
f_3		-23	-17	dBc
IMD_3 50W PEP, Δf=10kHz		-32	-25	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}	24-30VDC
Bias Current	1.0A
Drain Current	4.8A
Load Mismatch*	3:1
Baseplate Temp.	65°C
Storage Temp.	-40°C to 85°C

*All phase angles, 50W forward power, current limited to 4.8A for 5 seconds max.

Option Ordering Info

SMA connectors	HD30711-SMA
Heatsink and fan	HD30711-HSF
Module	HD30711-Module
Mini-system	HD30711-Mini

HD Communications Corp. ● 332-C Dante Ct ● Holbrook, NY ● 11741 USA
PH # (631) 588-3877 ● Fax# (631) 648-0518 ● sales@rfcomp.com ● www.rfcomp.com

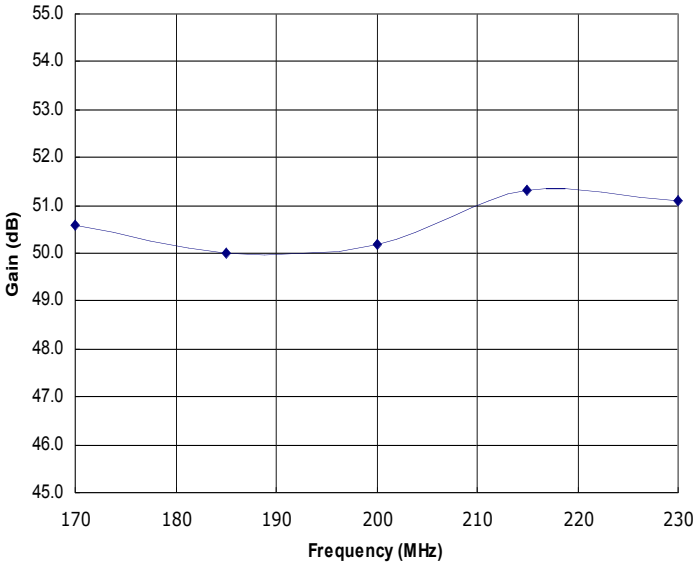


Figure 1: HD30711 Typical Gain @ P_{out} = 50W.

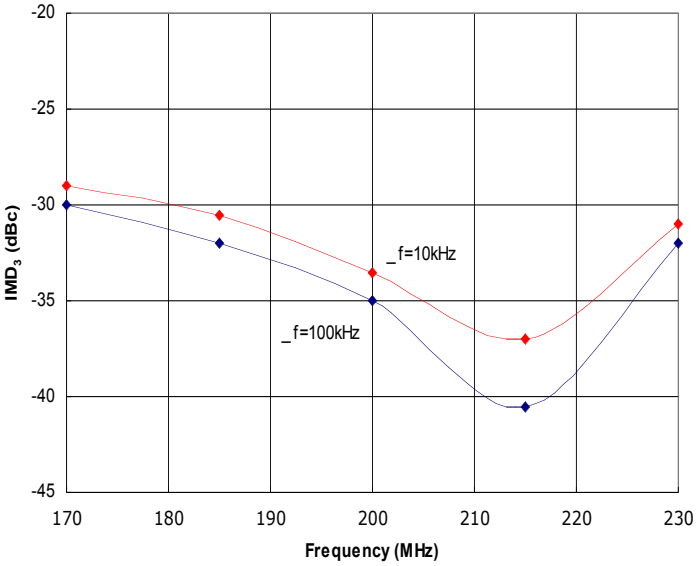


Figure 2: HD30711 Typical IMD_3, Δf=10kHz and 100kHz, @ P_{out} = 50W PEP. Data is provided for reference only; this is not intended to be a highly linear amplifier. For improved linearity, see our HD30712 Class A amp.

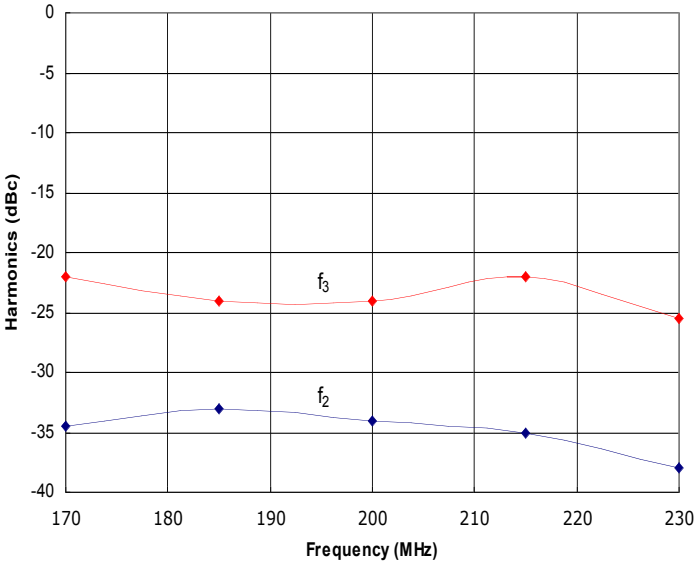


Figure 3: HD30711 Typical f_2 and f_3 @ P_{out} = 50W.

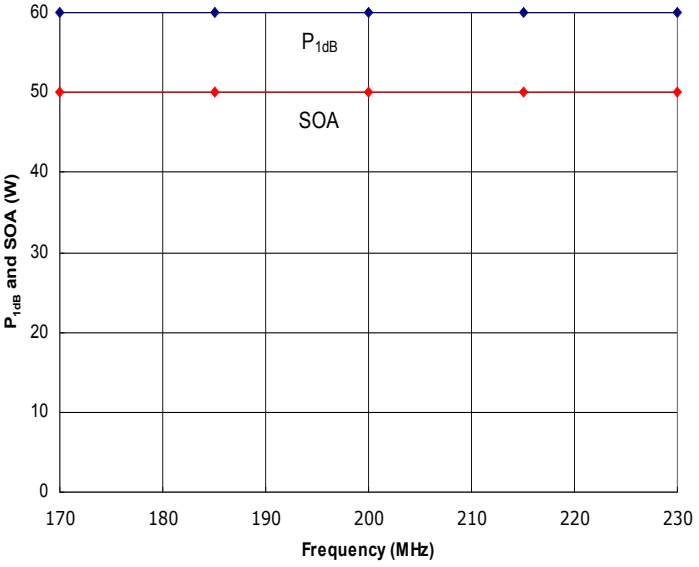
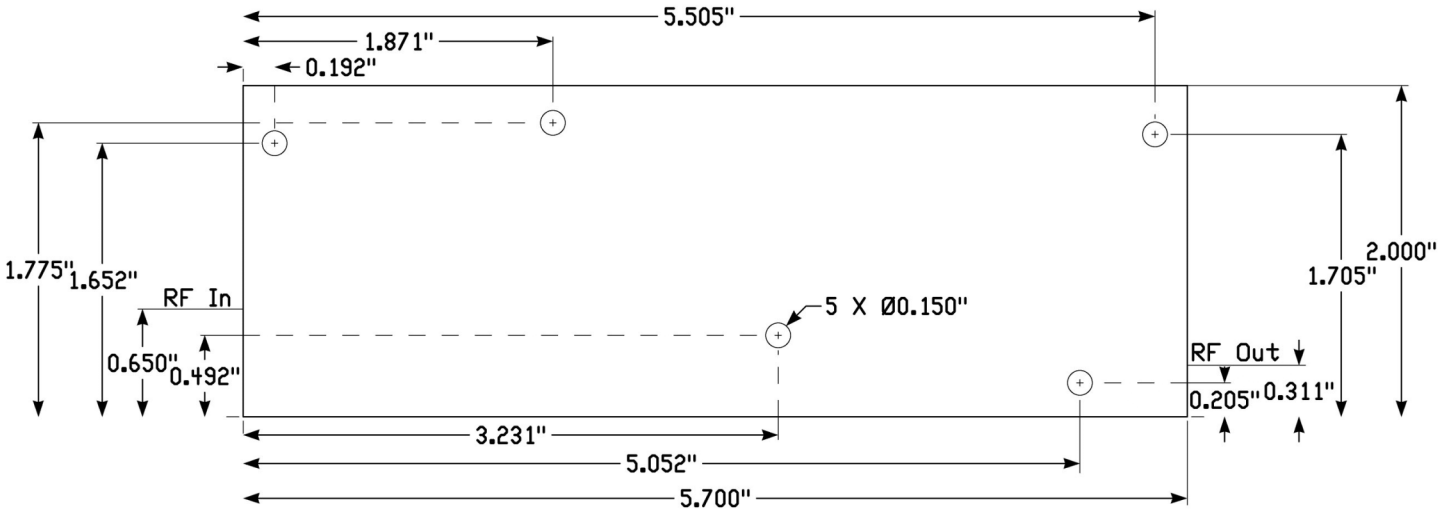


Figure 4: HD30711 Typical P_{1dB} and Safe Operating Area (SOA).

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 us 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 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 us at sales@rfcomp.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	7-23-2015	Production release.