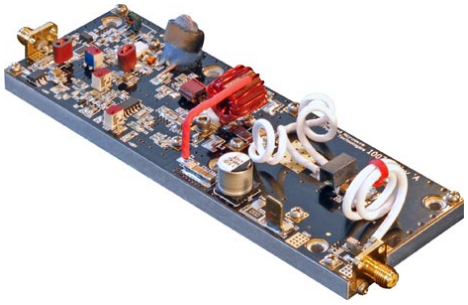
HD Communications Corp.

HD30712

170-230MHz 25W Class A High Performance Amplifier

- **Class A 25W amplifier**
- **170-230MHz bandwidth**
- **47dB 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 HD30712 is a Class A high performance amplifier, outstanding as a driver stage in analog or digital TV broadcast systems. It exhibits excellent full power and back-off linearity, and utilizes a combination of two active device technologies for optimum performance and ruggedness. Its high gain allows it to be driven to full power from signal generator levels.

Specifications

V_{sup} = +28VDC, I_{DQ} = 3.90A, P_{out} = 25W, T_{base} = 25°C, Z_{load} = 50Ω

Parameter	Min	Typ	Max	Units
Freq. Range	170		230	MHz
P_{1dB}	45	See Figure 4		W
Input Power		-3	0	dBm
Gain	44	47		dB
Gain Flatness		+/-1.0	+/-1.5	dB
Drain Current		4.0	4.2	A
Efficiency	21	22		%
IRL		-30	-20	dB
f_2		-41	-34	dBc
f_3		-37	-29	dBc
IMD_3 25W PEP, Δf=10kHz. See Fig. 2 for other tone spacings.		-40	-35	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	3.9A
Drain Current	4.2A
Load Mismatch*	5:1
Baseplate Temp.	65°C
Storage Temp.	-40°C to 85°C

*All phase angles, 25W forward power, current limited to 4.2A for 5 seconds max.

Option Ordering Info

SMA connectors	HD30712-SMA
Heatsink and fan	HD30712-HSF
Module	HD30712-Module
Mini-system	HD30712-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

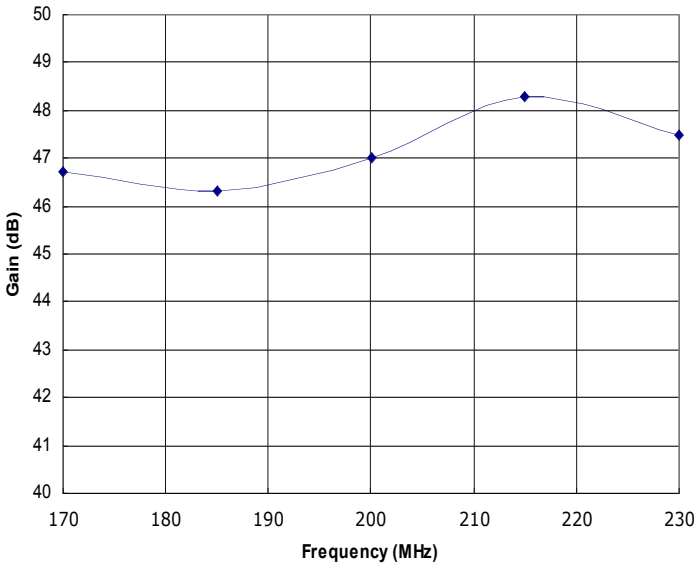


Figure 1: HD30712 Typical Gain @ P_{out} = 25W.

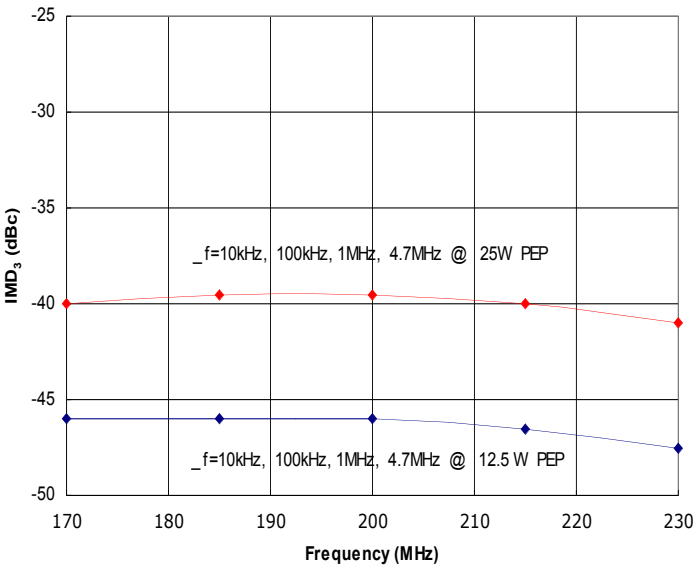


Figure 2: HD30712 Typical IMD_3, Δf=10kHz, 100kHz, 1MHz, and 4.7MHz, @ P_{out} = 25W and 12.5W PEP. Data is identical for all four tone spacings, and at both power levels.

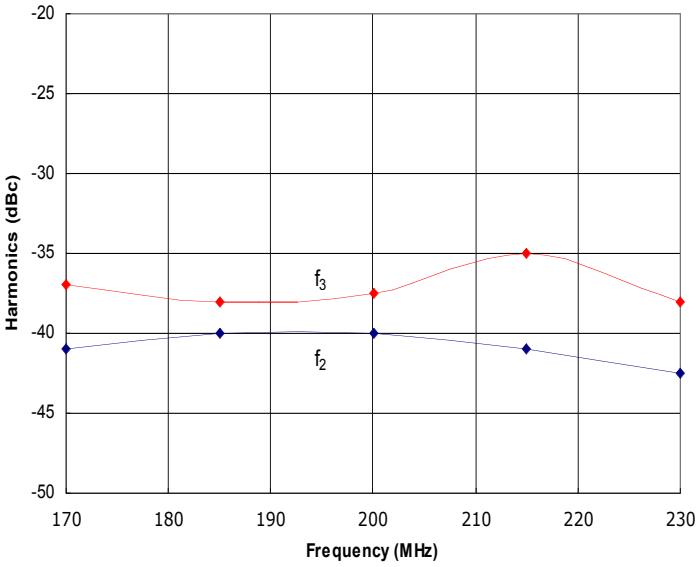


Figure 3: HD30712 Typical f_2 and f_3 @ P_{out} = 25W.

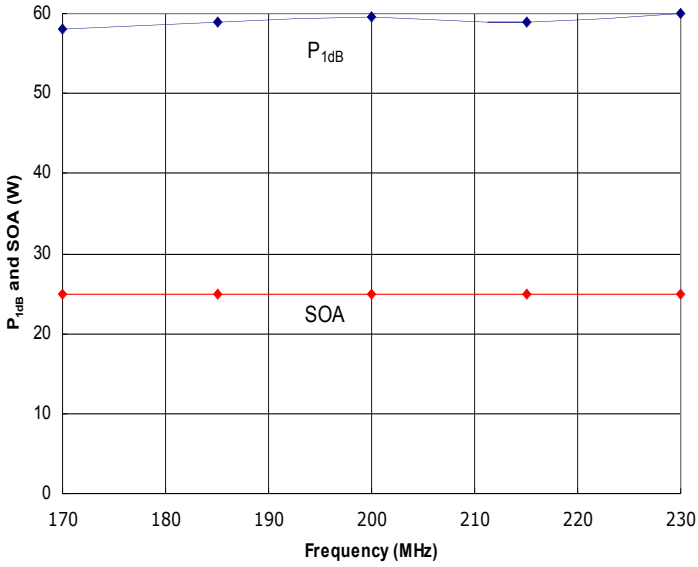
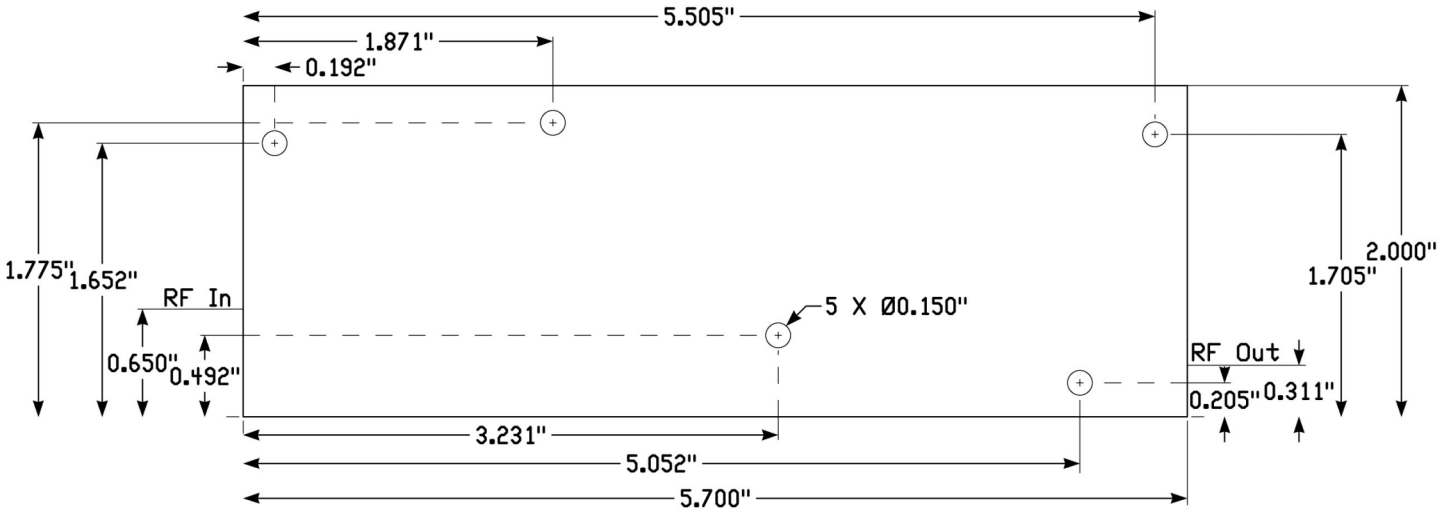


Figure 4: HD30712 Typical P_{1dB} and Safe Operating Area (SOA). The amplifier is capable of delivering much more power than it is safe to generate. Do not exceed the indicated SOA.

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.