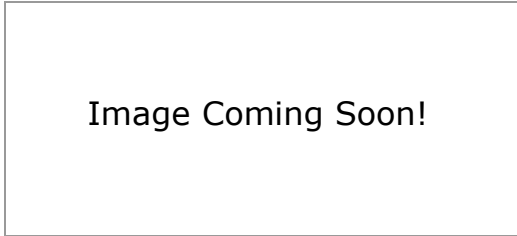


- ❖ **Class A 20W linear amplifier**
- ❖ **1-525MHz bandwidth**
- ❖ **46dB typical gain**
- ❖ **+/- 1.0dB typical gain flatness**
- ❖ **Temperature-compensated bias**
- ❖ **50 ohms input/output**
- ❖ **Available with disable, heatsink and fan, or enclosed with DC supply**



The HD30538 is a Class A amplifier module, perfect as a standalone laboratory amplifier, or as a driver stage in military, commercial, industrial, medical or scientific systems. It exhibits excellent full power and back-off linearity, and utilizes a combination of MOSFET technologies for optimum performance.

Specifications				
$V_{sup} = +28VDC, I_{DQ} = 3.30A, P_{out} = 20W, T_{base} = 25^{\circ}C$				
Parameter	Min	Typ	Max	Units
Freq. Range	1		525	MHz
P_{1dB}	20	See Figure 4		W
Input Power		-3	0	dBm
Gain	43	46		dB
Gain Flatness		+/-1.0	+/-1.5	dB
Drain Current		3.30	3.50	A
Efficiency		22	20	%
IRL		-20	-14	dB
f_2		-35	-23	dBc
f_3		-40	-25	dBc
IMD_3 20W PEP, $\Delta f = 10kHz$		-37	-30	dBc
Dimensions	2.40 X 4.60 X 1.31 (60.96 X 116.84 X 33.27)			inch (mm)

Maximum Ratings	
Operation beyond these ratings will void warranty	
Parameter	Value
V_{sup}	24-28VDC
Bias Current	3.30A
Drain Current	3.50A
Load Mismatch*	5:1
Housing Base Temp.	65°C
Storage Temp.	-40°C to 85°C

*All phase angles, 20W forward power, current limited to 3.5A for 3 seconds max.

Option Ordering Info

Disable (TTL, active high)	HD30538-DIS
Heatsink and fan	HD30538-HSF
Enclosure with DC supply and fan	HD30538

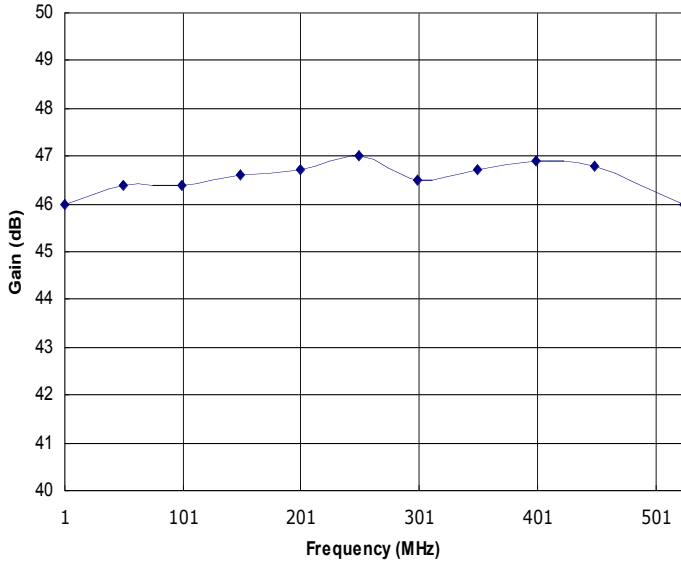


Figure 1: HD30538 Typical Gain vs. Frequency
@ $P_{out} = 20W$

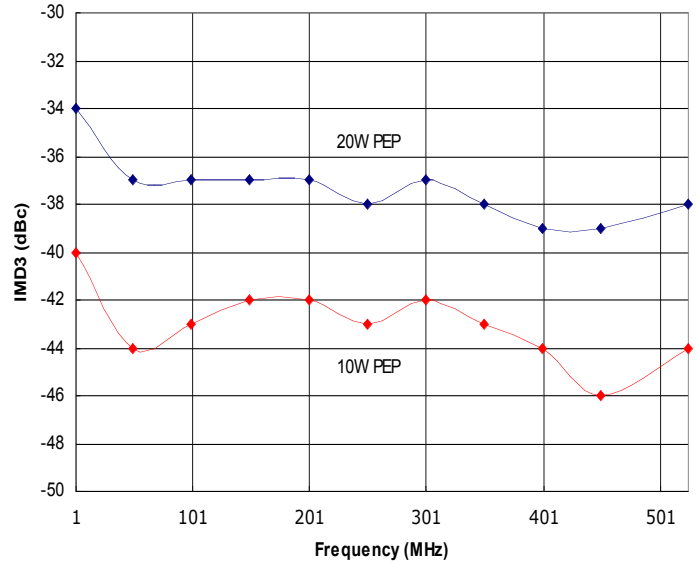


Figure 2: HD30538 Typical IMD_3 , $\Delta f=10kHz$,
@ $P_{out} = 10W$ and $20W$ PEP

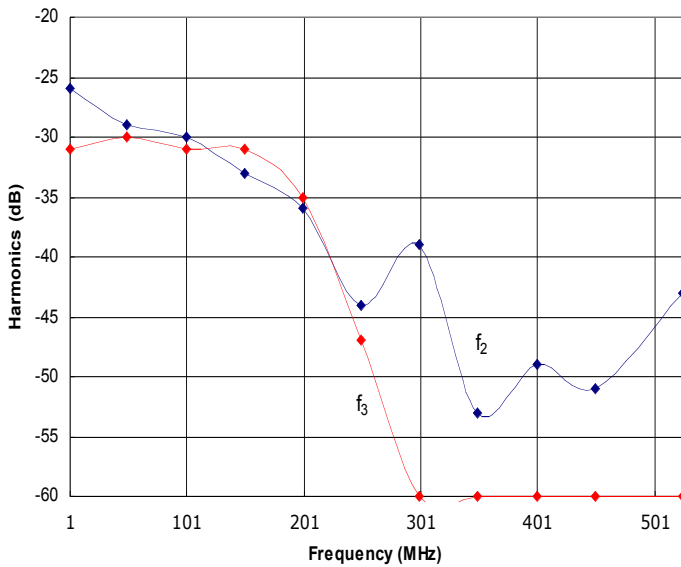


Figure 3: HD30538 Typical f_2 and f_3 vs.
Frequency @ $P_{out} = 20W$

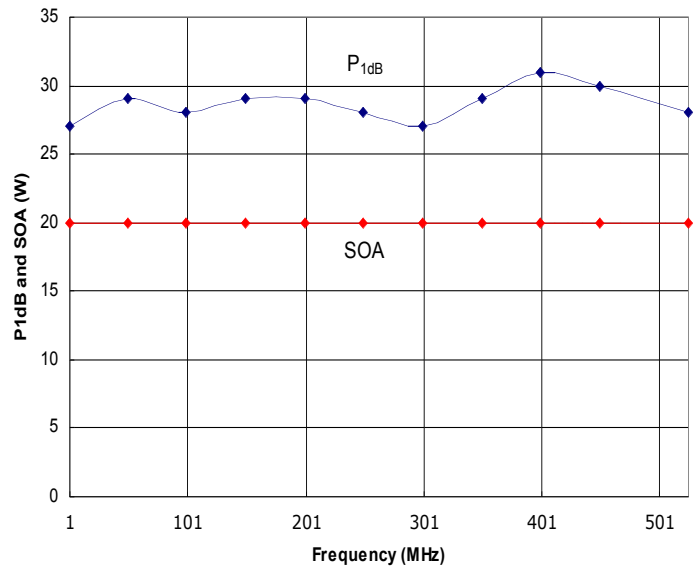
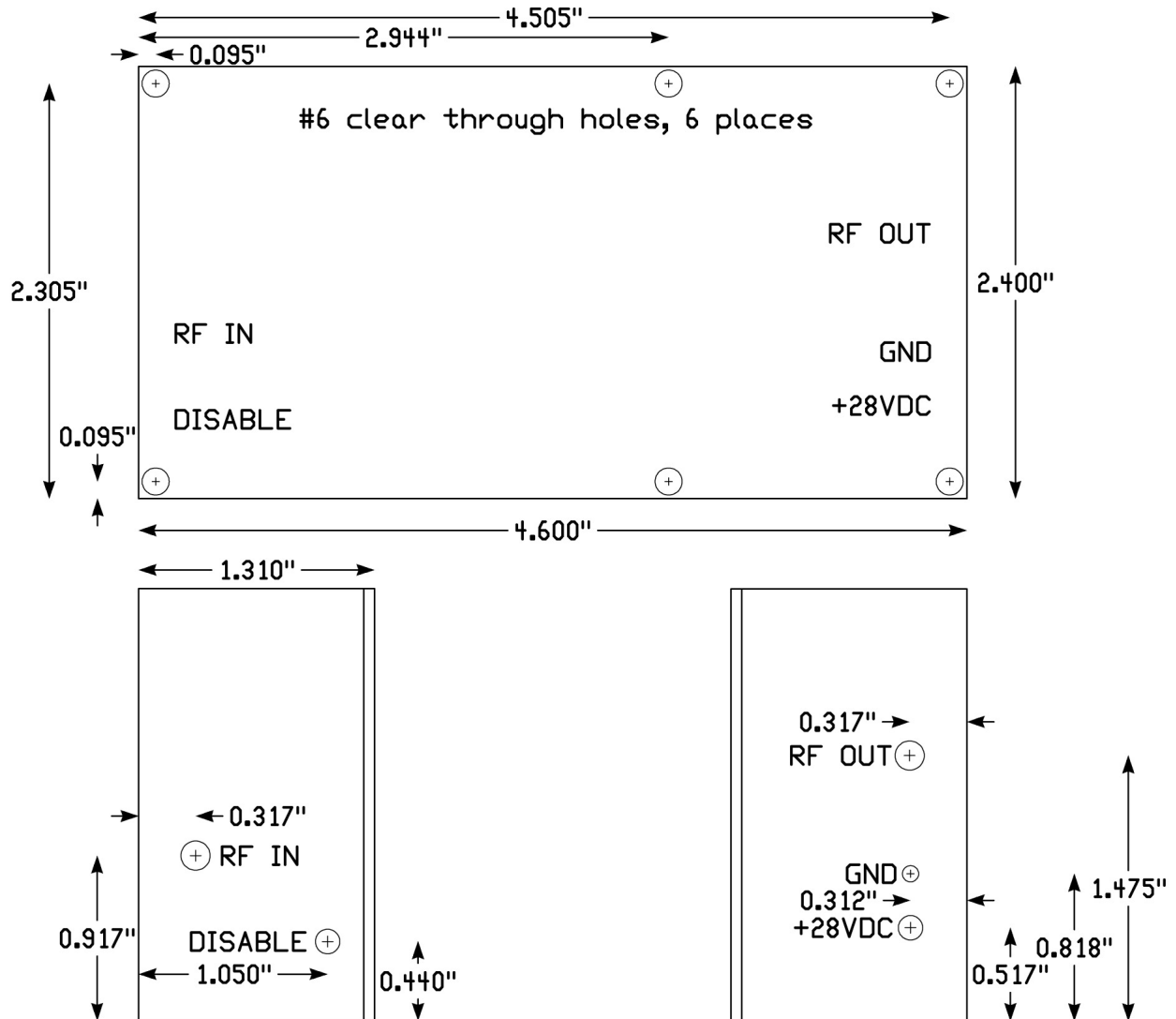


Figure 4: HD30538 Typical P_{1dB} and Safe
Operating Area (SOA)

Amplifier Dimensions



Instructions for Amplifier Use

- 1) If not supplied with a heatsink, apply a layer of high quality thermal grease to the underside the amplifier housing. Thinner is better, but ensure that when mounted to the heatsink, contact across the entire housing base is made. Gaps and air bubbles will significantly reduce cooling, leading to possible amplifier damage.
- 2) Guarantee sufficient airflow through the heatsink fins to keep the maximum base temperature at or less than that specified in the Maximum Ratings section.
- 3) Connect proper source to RF IN connector, and desired load to the RF OUT connector. Torque connectors to industry standards for the type supplied with the amplifier.
- 4) Connect DC V_{sup} and Ground wires to the terminals provided. Ensure that the connections are of proper polarity.
- 5) Apply DC power and sufficient RF drive to achieve desired output level. Ensure that the Safe Operating Area (SOA) power level indicated on 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 the factory 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
Pre	2-28-2015	Preliminary release