



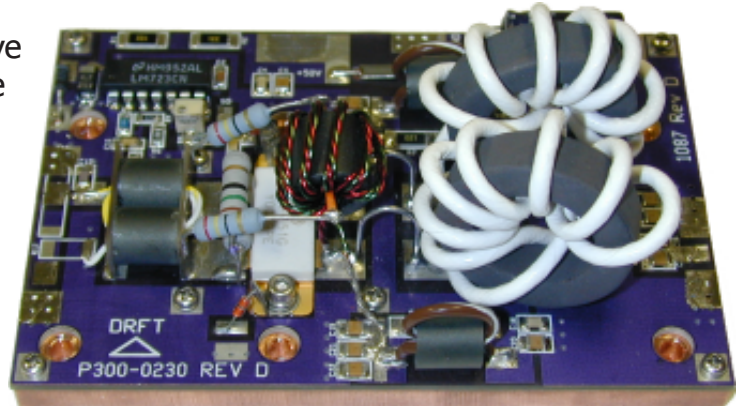
P300-2-30-18

High Power RF Amplifiers and Accessories

300W Class AB HF Pallet Amplifier

The **P300-2-30-18** is a rugged integrated MOSFET amplifier building block which requires only power and input and output connections. Offering high gain and efficiency in a cost effective package, this Pallet Amplifier is the natural choice for a high power RF building block in broadband communications applications from 2-30 MHz.

- NO RF Assembly or Circuit Tuning!
- 18 dB Typical Gain 2-30 MHz!
- 55% Typical Drain Efficiency!
- Analog Temperature Monitor
- Amplifier Disable Input
- Temperature Compensated Bias
- Copper Baseplate



Specifications:

$V_{sup} = +50V_{dc}$, $I_{dq} = 1.0A$, 2-30MHz

Parameter	Min	Typ	Max	Units
Fundamental Pout, PEP <small>2-tone, 2-30MHz, IMD3 -30dBc, 10kHz Tone Spacing</small>	300			Watts
IMD3 <small>2-tone, 2-30MHz, IMD3 -30dBc, 10kHz Tone Spacing</small>		-35	-30	dBc
Power Input		4.8	7.5	Watts
Power Gain	16	18		dB
Delta Gain		±2		dB
Drain Current		11		A
Efficiency	40	55		%
Input VSWR		1.5:1	1.8:1	
Insertion Phase Variation <small>(unit to unit)</small>		±10		°
Power Gain Variation <small>(unit to unit)</small>		±1		dB
F2 Second Harmonic		-35		dBc
F3 Second Harmonic		-15		dBc
Baseplate Operating Temp	0		+70	°C
Physical Dimensions	5.0" x 3.0" x 2.0" / 13cm x 8cm x 5cm			

Absolute Maximum Ratings:

Parameter	Value	Units
Maximum Operating Voltage	+55.0	V DC
Stable Operating Voltage	+48.0 to +52.0	V DC
Maximum Bias Current <small>Factory set to 1.0A.</small>	3.0	A
Maximum Drain Current	13	A
Load Mismatch Survival <small>At all phase angles with the base plate held at 40°C and Id current limited to 13A, 2 seconds maximum</small>	5:1	
Storage Temperature	-40 to +105	°C
Maximum Operating Baseplate Temperature	+70	°C

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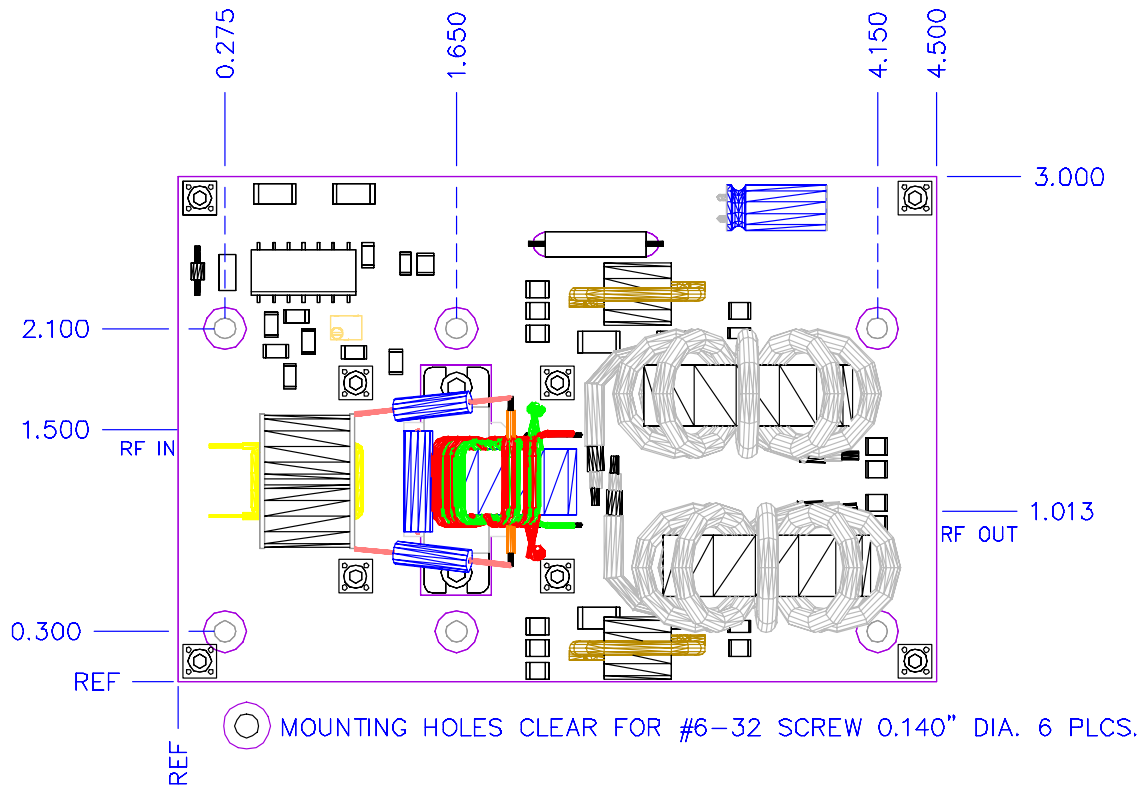


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Mechanical Specifications



Tips for Mechanical Mounting:

- 1 All holes are clear for #6 Screw. Stainless Steel mounting hardware is recommended, grade 18-8 or better. A lock washer of same material should also be used.
- 2 Ensure mounting surface is flat to better than 0.003" / "
- 3 Use a thin layer of thermal compound on the backside of the PA - no more than 0.001" - 0.002" thickness!
- 4 Torque all screws to 10-12 in-lbs

Considerations for Mechanical Mounting:

- Considerations for proper thermal design include
- Total power dissipated = Total DC Power Consumed x (1-Efficiency)
- Ambient Airflow
- Thermal Resistance of Heat Sink

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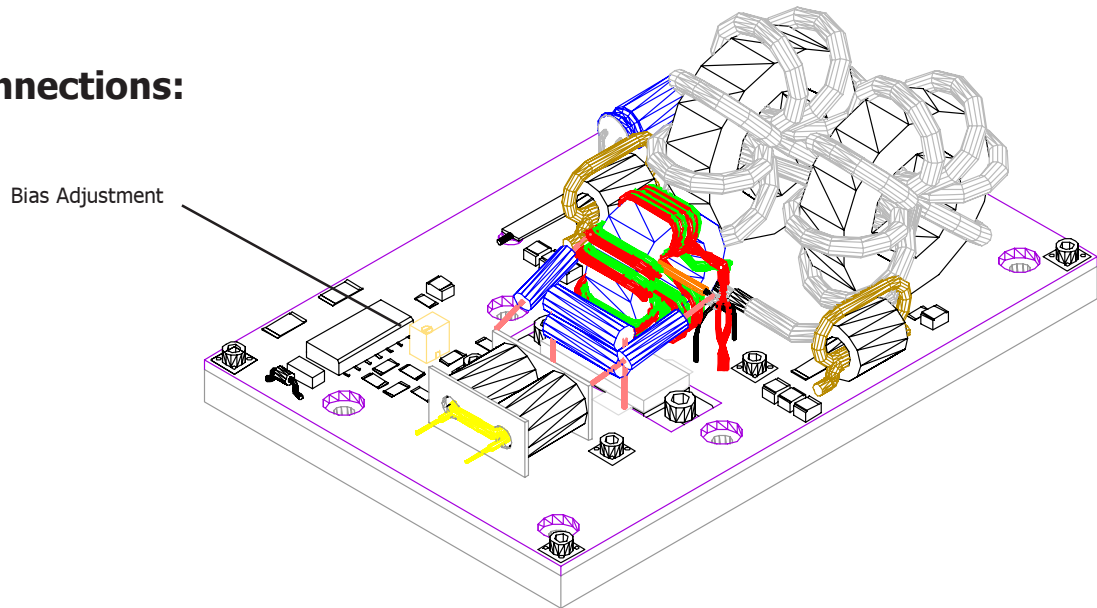


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Electrical Connections:



Connections:

Connect amplifier to +Vsup and Ground by soldering directly to pads on top of amplifier. If using Single connection, 12 gauge wire is recommended, 12 gauge ground wire.

Connect coaxial cable to input and output RF connections (semi rigid or flexible) using best RF practices. Ensure output cable is of sufficient power handling rating. Pads are provided for ground on co-axial connections.

Amplifier Startup

+Vsup should be applied to amplifier with no drive applied. The system must allow drain voltage to reach +40V minimum before applying drive or damage will result to the amplifier and void warranty. This typically takes between 1-2 seconds and should be verified by the system integrator.

Bias Current:

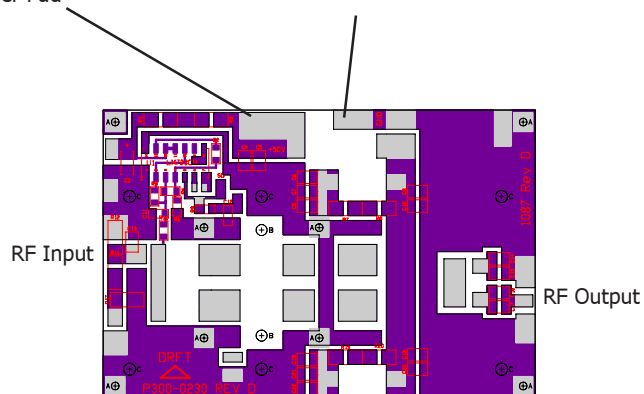
Bias has been pre-set at the factory to 1.0A at +50.0V DC. This bias point has been selected to offer the optimum balance between gain and efficiency. This unit is intended for class AB operation. If the bias point is changed, take great care not to exceed the maximum bias listed on page 1.

Amplifier Shutdown

To prevent damage to amplifier and surrounding systems, drive should be removed prior to powering down PA. Please note that as with any class AB amplifier, even when no drive is applied, the output of the amplifier can still be active when presented with an odd load.

+Vsup Solder Pad

Ground Solder Pad



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