2296

Part Number

P150-FM-A0

Amplifier Name

Revision 0.B Release Date July 19, 2007
Revision Notes

Technical Specifications Summary

Frequency Range:	86 - 108 MHz	Gain:	13dB
P1dB:	150 Watts CW	Efficiency:	60%
Class:	C	Temperature Range:	-25 to 85°C
Supply Voltage:	+50.0V	Max VSWR:	5:1

Amplifier General Description

This 150W pallet amplifier is specifically designed for use as a driver in larger transmitter systems. The amplifier is based upon the reliable MRF151 MOSFET. This unit replaces Silicon Valley part number 0101-150CH and similar legacy amplifiers. The P150-FM-13 is designed for FM radio broadcast, 86-108 MHz.

Proper heatsinking required.

Amplifier Picture

Delta RF Technology, Inc.
High Power RF Amplifiers and Accessories
350 South Rock Boulevard • Reno • NV • 89502 • USA

Phone +1.775 DELTA RF [775 335 8273]
Fax +1.775 DELTA FX [775 335 8239]
website: http://www.drft.com
email: sales@drft.com

Electrical Specifications

Parameter	Min	Typ	Max	Units	Notes
Frequency	86		108	MHz	
P1dB	150			W, CW	
Psat			180	W, CW	Designed for 150W CW
Power Input	4.5		12	W, CW	
Gain	11.0		15.0	dB	
Vsupply	42	50	52	V, DC	
Drain Current			5.0	A, DC	
Input VSWR			2.0:1		
Insertion Phase Variation		±10		°	Unit to unit
Gain Variation			±1	dB	
F2 Second Harmonic		-20		dBc	
F3 Third Harmonic		-45		dBc	
Baseplate Operating Temperature	-25		+85	°C	

Physical Dimensions 6.75” x 3.0” x 1.8” / 17.1cm x 7.6cm x 3.3cm

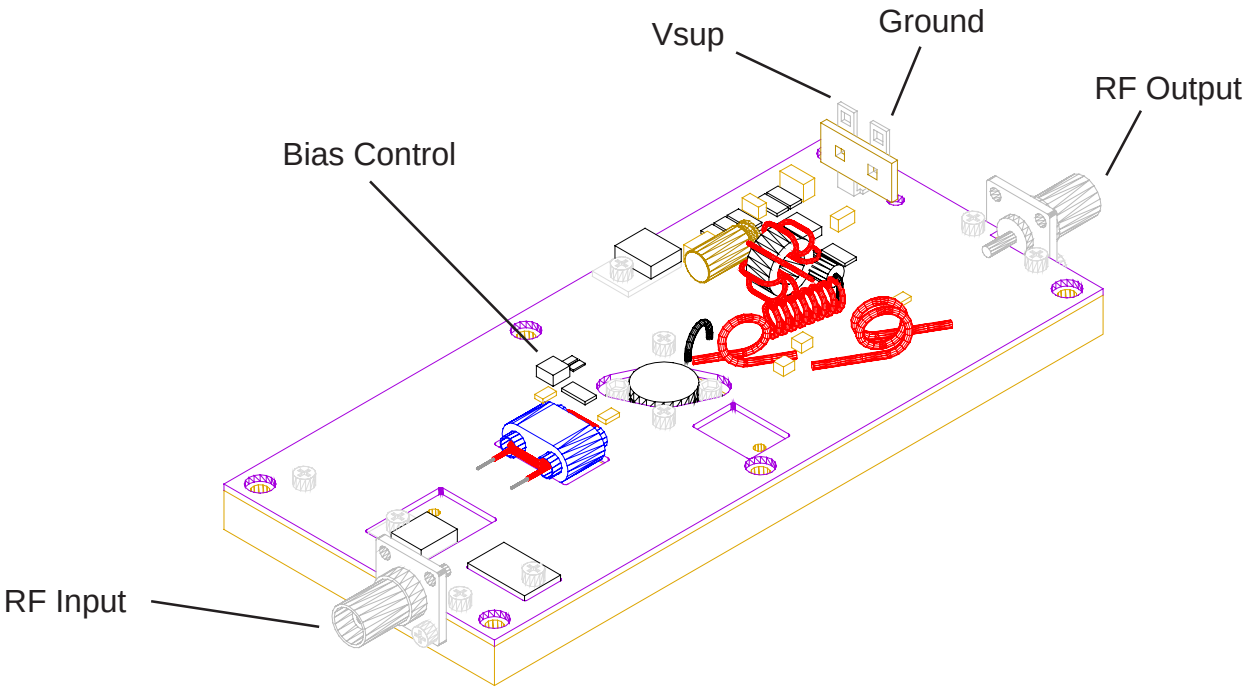
All specifications valid for 50 Ω output load, V_{sup} = +50VDC, I_{dq} = 0.1A

Absolute Maximum Ratings

Parameter	Value	Units	Notes
Maximum Operating Voltage	+55.0	VDC	
Stable Operating Voltage	42-52	VDC	
Maximum Bias Current	0.5	A,DC	0.1A factory set
Maximum Drain Current	6	A,DC	
Load Mismatch Survival	5:1		
Storage Temperature	-25 to +85	°C	
Maximum Operating Baseplate Temp	+85	°C	

Features, Auxillary Functions

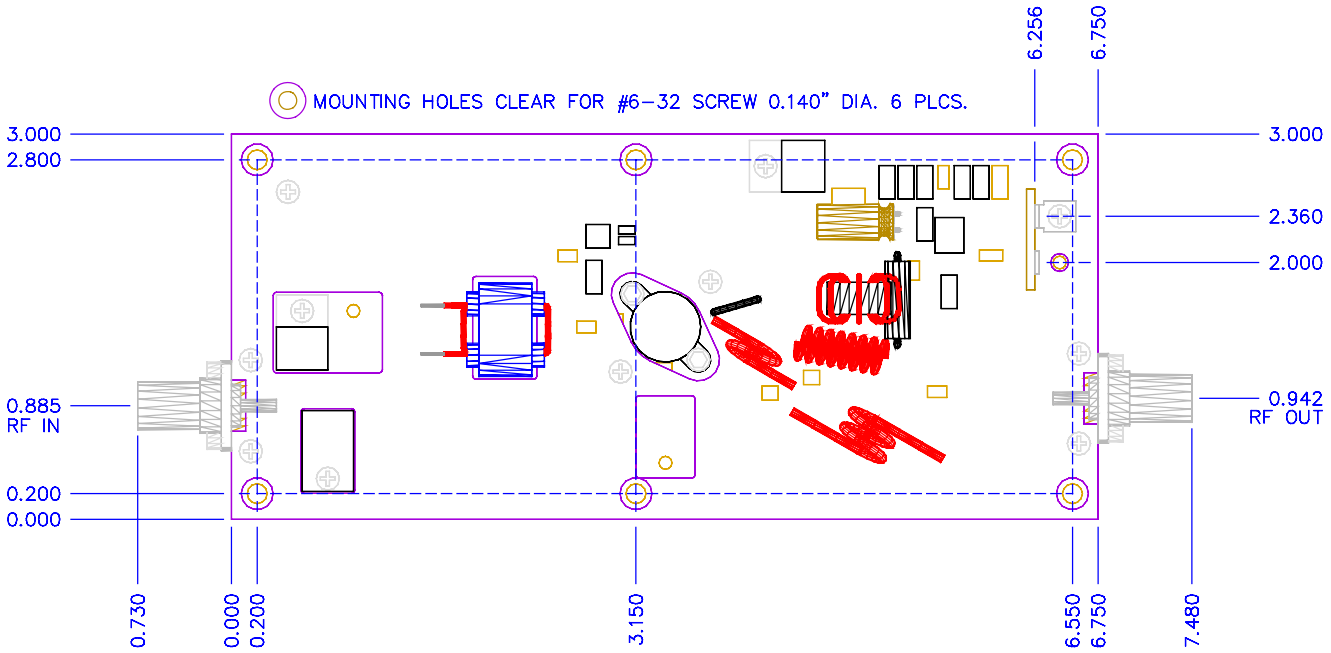
- Connectorized Power

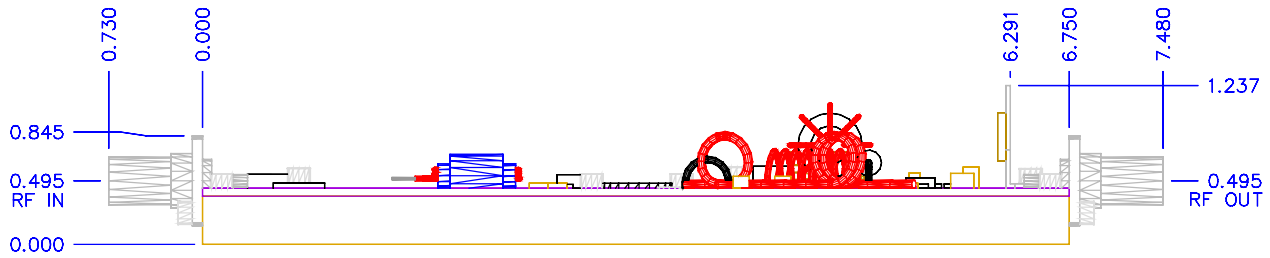


Connections:
Connect amplifier to +Vsup and Ground by soldering directly to terminals as shown. Use of teflon insulated wire is highly recommended.
Connect coaxial cable to input and output RF connections (semi rigid or flexible) using best RF practices. Ensure output cable is of sufficient power handling rating. BNC Male ends must be made for this.

Amplifier Startup
+Vsup should be applied to amplifier with no drive applied. The system must allow drain voltage to reach +15V minimum before applying drive or damage can result to the amplifier and void warranty. This typically takes between 2 - 10 seconds and should be verified by the system integrator. Bias Current:
Bias current is controlled via potentiometer and is factory set to 0.1A. Should the need arise to adjust bias current, do not exceed 0.5A. Bias has been pre-set at the factory to 0.10A at +50.0V DC.
Amplifier Shutdown
To prevent damage to amplifier and surrounding systems, bias and drive should be removed prior to powering down PA.
Miscellaneous:
Placing noisy analog or digital systems, such as additional control circuitry, directly over the top of transistors or RF path can cause improper operation. Care should be taken to locate these components where they will not cause interference.

Mechanical Drawings - Top and Side Views





Ordering Information:

Order Code	Description	DRFT Reference
P150-FM-A0	150W Class C 88-108MHz Module	2296
PAB150-FM-A0	Amplifier in Enclosure	TBD
Options		
-A11	SMA Female Connectors In / Out	0201
-A12	Heat Sink Option	0202
-A13	Heat Sink Option with DC Fan, pre wired	0203
-A14	Ruggedized for vibration	0204
-A15	Wire harness, 1' length, 10 wires for pallet amplifier only (NON-FM)	0205
-A16	Wire harness, customer specified length for pallet amplifier only	0206
-T2	Extended Burn In	0271
-T3	Extended Data Collection	0272

Standard Pallet Options:

SMA Female Connectors, Input and Output. Stainless Body, Gold Center pin, 4-hole SMA bolted to pallet amplifier edge through bottom two holes located at amplifiers RF IN and RF OUT locations. All stainless steel hardware.

Enclosure- all aluminum machined enclosure available for most pallet amplifiers. Alodyned aluminum, alloy 6061-T6. SMA Female input and output RF connectors. Supply voltage and ground through solder / feedthrough connections. Module must be bolted to appropriate heatsink.

Heat Sink - aluminum extruded heat sink, black anodized. Pallet amplifier or module will be bolted to heatsink. Customer will be required to provide adequate airflow.

Heat sink with fan - aluminum extruded heat sink as above, with included fan bolted to push air through the heat sink. Depending on heat requirements, a second fan may also be provided on the output of the unit.

Ruggedized - all screws have threadlocking compound applied, and all flying components are staked and attached to base. Designed to withstand MIL-STD-810E 514.4 Category 8.

Power Connector - a 10 pin molex connector is used on all standard pallet amplifiers to supply +Vsup and Ground connections, as well as hi-side current shunts for current monitoring. Delta RF offers the mating connector with 1' wires - Red (Vsup), Black (Ground), Yellow (Current monitor). All wires are 18 gauge teflon insulated wires. Customer may optionally specify wire length and wire color.

Testing Options:

Standard - includes power test and brief burn - in under laboratory conditions. Printed test report gives graph of Gain and Input Return Loss at rated P1dB and Voltage Conditions. Report shows pass/fail critera. All amplifiers include this test.

Extended burn in - 8-hour burn in at P1dB with standard test run at completion. Unit is monitored during test and any discrepancy reported. Standard test data is included.

Extended data collection - Standard data is run and included. Detailed data is taken point by point giving the customer 25 - 70 frequency points, depending on the amplifier model. For each frequency point, data is generated to include gain, input power, input return loss, current, second harmonic, third harmonic, efficiency, audio distortion.

Other tests available - Vibration, Temp cycling, Shock. Please inquire.