

Revision 0.a Release Date July 10 2007

Revision Notes Preliminary Release

Technical Specifications Summary

Frequency Range: 400 - 1000 MHz
P1dB: 10 Watts CW
Class: A
Supply Voltage: 28.0V

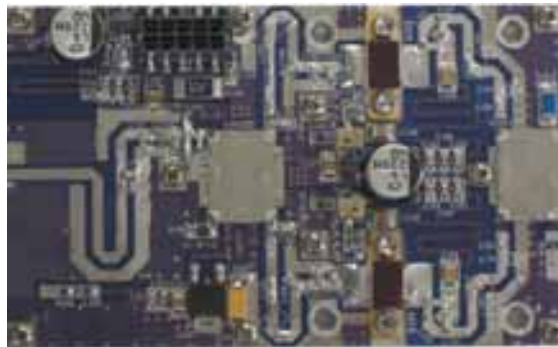
Gain: 15 dB
Efficiency: 12%
Temperature Range: 0 to 70 °C
Max VSWR: 10:1

Amplifier General Description

The **PA10-400-1000-15** is a single stage ultra linear class A integrated communications amplifier designed for a variety of end uses. Providing a minimum of 10 W P1dB, the PA10-400-1000-15 is the perfect pre-amplifier for any broadband UHF communications transmitter. Featuring quadrature input and output combining, the amplifier is isolated from most external circuit problems.

- No RF assembly or circuit tuning!
- 15 Watts typ of P1dB!
- 15dB typical gain at 1 GHz!
- Combined **Video and Aural** at full rated power!
- Modular Construction for ease of Integration!

Amplifier Picture

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Parameter	Min	Typ	Max	Units	Notes
Frequency	400		1000	MHz	
P1dB	40	42		W, CW	
Linear Power Out		12		W	
IMD3		-30		dBc	For 2 tones, 10KHz spacing, 10 W PEP
Power Input		300		mW, CW	For 10W output
Gain	15			dB	
Vsupply	26		30	V, DC	
Drain Current		2.0		A, DC	
Input VSWR		1.2:1	1.5:1		
Output VSWR			1.5:1		
Insertion Phase Variation		±5		°	Unit to unit
Gain Variation		±1		dB	Unit to unit
F2 Second Harmonic		-30		dBc	
F3 Third Harmonic		-20		dBc	
Baseplate Operating Temperature	0		70	°C	

Physical Dimensions 2.5" x 3.8" x 0.5" / 6cm x 10cm 2cm

All specifications valid for 50 Ω output impedance, $V_{sup} = +28VDC$, $I_{dq} = 2.0A$

Absolute Maximum Ratings

Parameter	Value	Units	Notes
Maximum Operating Voltage	+32	VDC	
Stable Operating Voltage	+26.0 to+32.0	VDC	
Maximum Bias Current, Q102, 103	2.00	A,DC	Factory set to 1.0A
Maximum Drain Current	3.50	A, DC	
Load Mismatch Survival	10:1		
Storage Temperature	-40 to +105	°C	
Maximum Operating Baseplate Temp	+70	°C	

Features, Auxillary Functions

- ◆ Amplifier Disable
- ◆ Current Sense
- ◆ Connectorized Power



Ordering Information:

Order Code	Description	DRFT Reference
PA-10-400-1000-15	Pallet Amplifier 10 Watt 400-1000MHz 15 dB Gain	4850
PAB-10-400-1000-15	Enclosed Pallet Amplifier 10 Watt 400-1000MHz 15 dB Gain	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. Alodined 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 criteria. 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.

The specifications contained herein are subject to change without notice. Delta RF Technology, Inc. assumes no liability for the use of this information.

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