

Revision 0.a Release Date April 2008
Revision Notes Initial release

Technical Specifications Summary

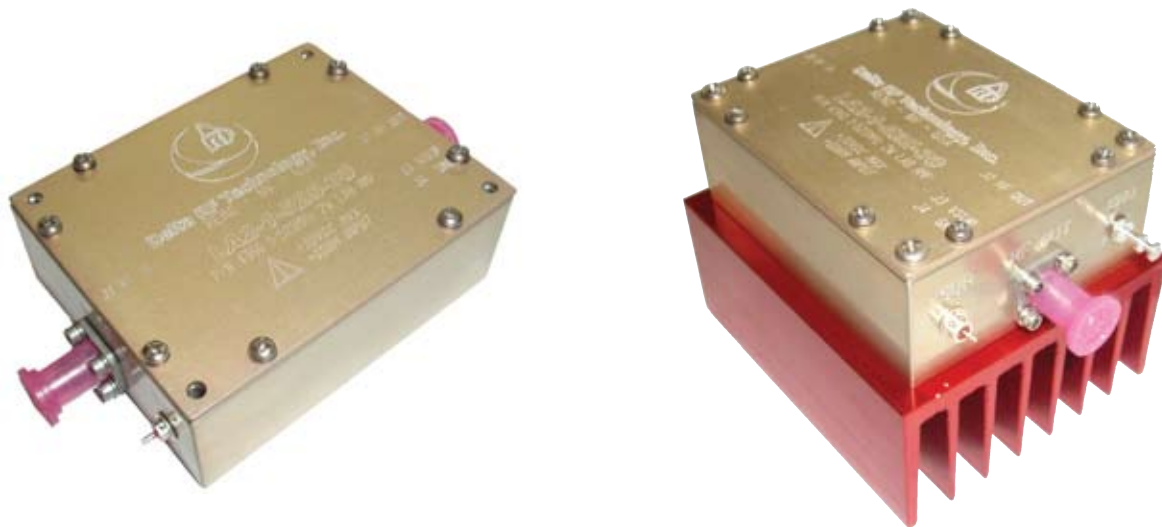
Frequency Range:	1 - 1025 MHz	Gain:	33dB
P1dB:	2 Watts CW	Efficiency:	12%
Class:	A	Temperature Range:	0 to 50°C
Supply Voltage:	28 V DC	Max VSWR:	10:1

Amplifier General Description

This ultra broadband class A amplifier operates from below 1 MHz to over 1 GHz. Using all gold metallized LDMOS transistors and a stable design, this compact, high performance laboratory amplifier will find use in many applications.

The LA2-1-1025-33 is offered as a standalone unit requiring the customer to mount to a modest heat sink, or we offer this with a heat sink. A disable line is option.

Amplifier Picture



Delta RF Technology, Inc.

High Power RF Amplifiers and Accessories

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Parameter	Min	Typ	Max	Units	Notes
Frequency	1		1025	MHz	
P1dB	1.5	2		W, CW	
Psat		3		W, CW	Amplifier is rated for this power into 1:1 load only For 2W output
Power Input		1		mW, CW	
Gain	32	33		dB	
Noise Figure		3.5	4	dB	
Vsupply	24		28	V, DC	
Drain Current		0.5	0.70	A, DC	
Efficiency		12		%	
Input VSWR			1.5:1		
Insertion Phase Variation		5°		°	Unit to unit
Gain Variation		±2		dB	Unit to unit
F2 Second Harmonic		-45		dBc	
F3 Third Harmonic		-45		dBc	
Baseplate Operating Temperature	0		40	°C	High temperature at 3:1 VSWR Maximum

Physical Dimensions

All specifications valid for 50 Ω output load, $V_{sup} = +28VDC$, $I_{dq} = 0.5A$

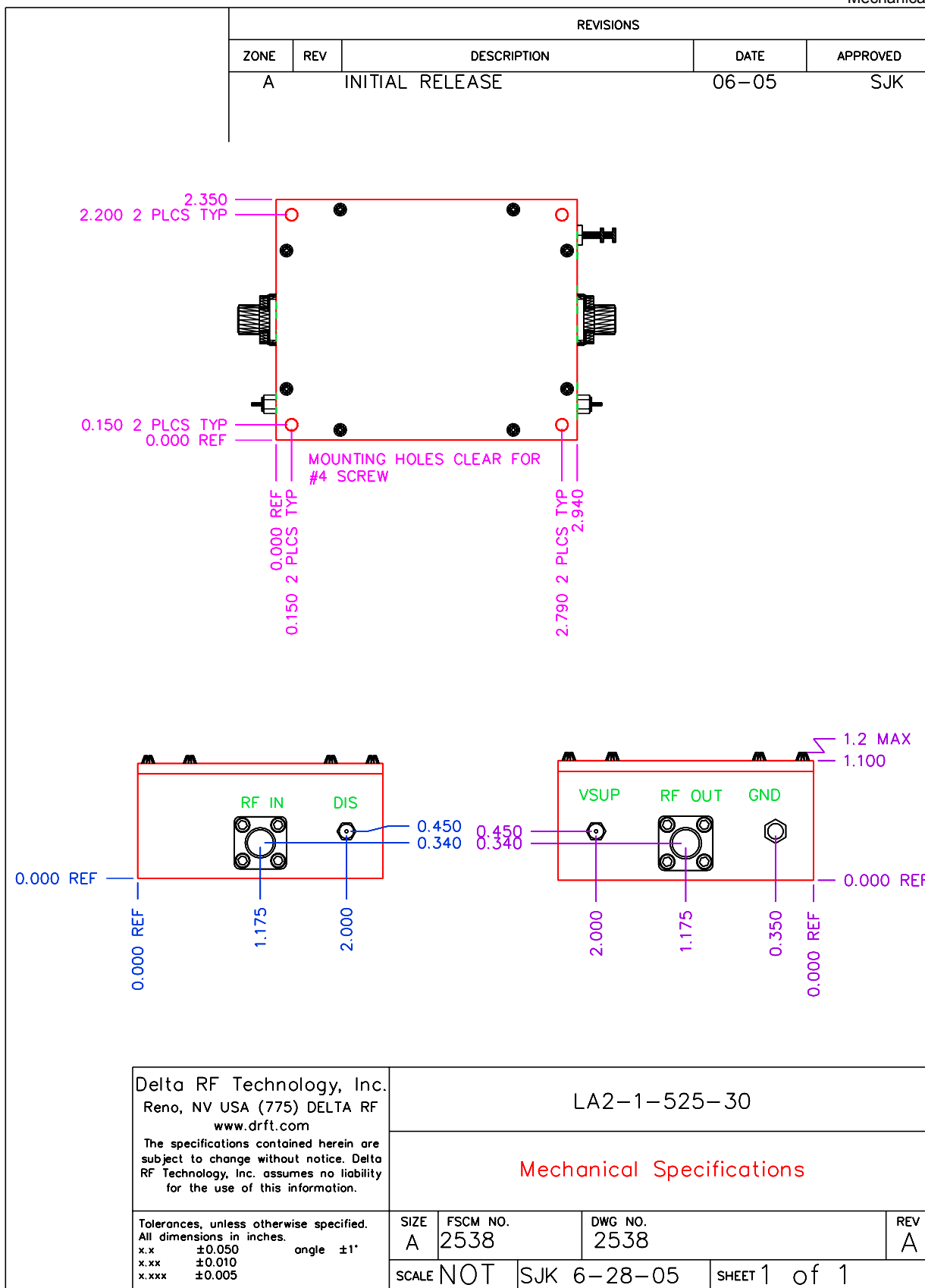
Absolute Maximum Ratings

Parameter	Value	Units	Notes
Maximum Operating Voltage	30	V, DC	
Stable Operating Voltage	24 - 30	V, DC	
Maximum Bias Current, Q100	0.065	A, DC	Factory set, no user adjustment
Maximum Drain Current, Q101	0.65	A, DC	Factory set, no user adjustment
Load Mismatch Survival	10:1		Up to 40°C
Storage Temperature	-40 to 85	°C	
Maximum Operating Baseplate Temp	50	°C	Max 3:1 VSWR, 2W CW

Features, Auxillary Functions

- ◆ Amplifier Disable - optional
- ◆ SMA Female connectors RF INPUT and RF OUTPUT
- ◆ Solder connections for Vsup, Ground, Disable





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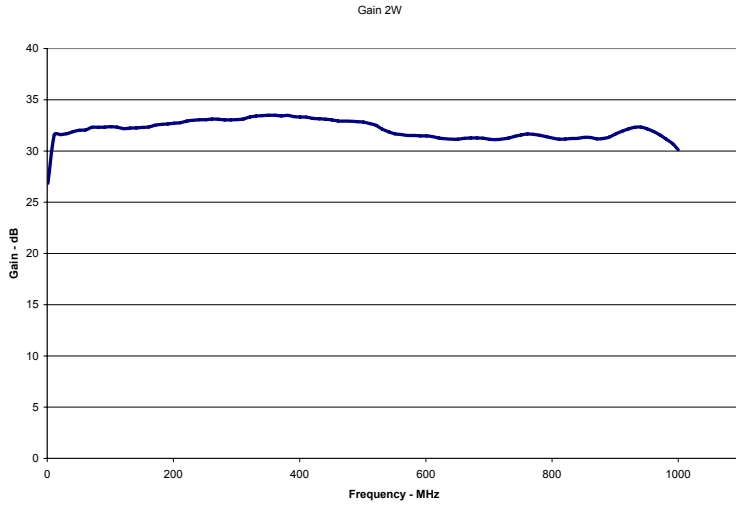
LA2-1-525-30

Mechanical Specifications

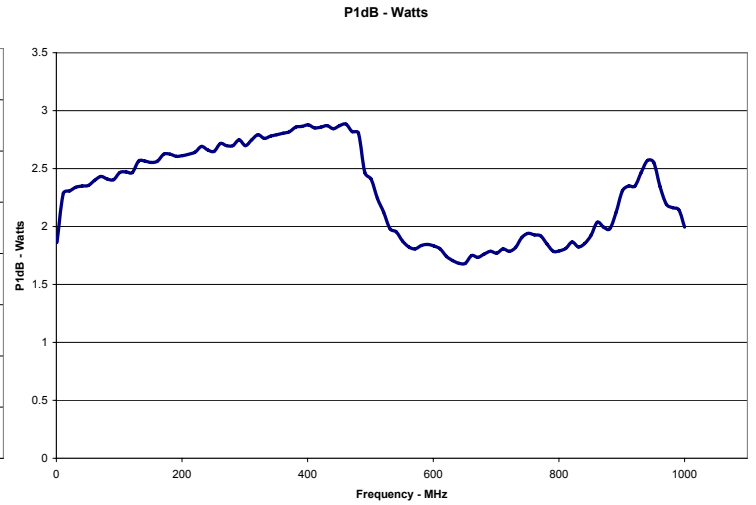
Tolerances, unless otherwise specified. All dimensions in inches.
 x.x ±0.050 angle ±1°
 x.xx ±0.010
 x.xxx ±0.005

SIZE	FSCM NO.	DWG NO.	REV
A	2538	2538	A
SCALE	NOT	SJK 6-28-05	SHEET 1 of 1

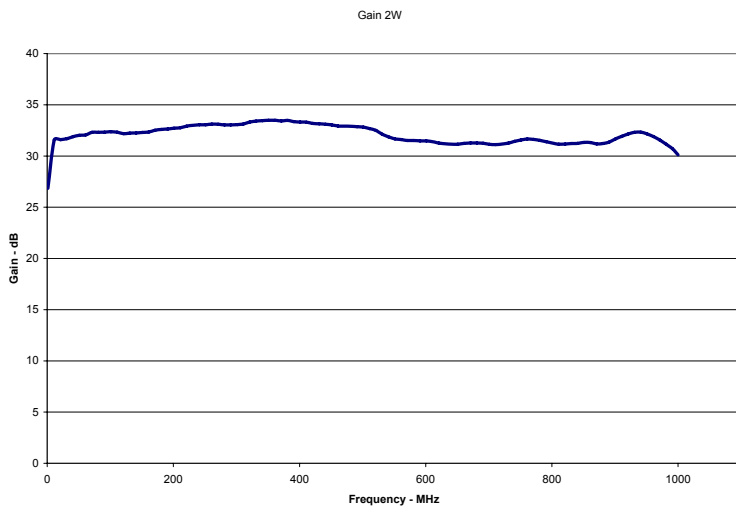




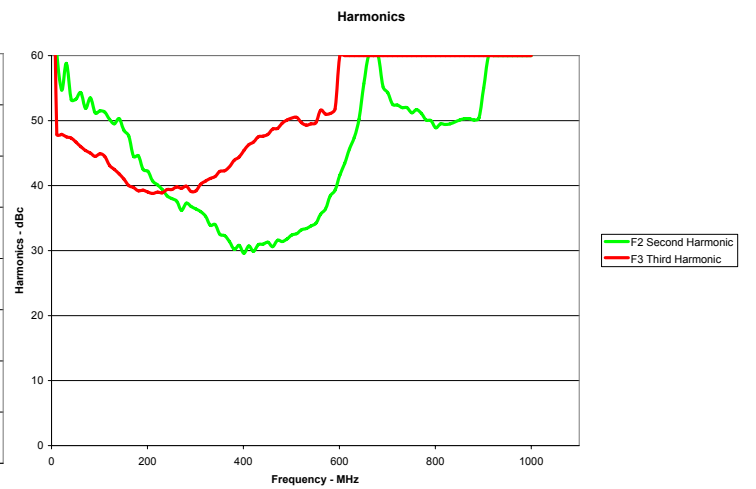
Graph 1. Gain, 2W



Graph 2. P1dB



Graph 3. Gain, 1W



Graph 4. Harmonic Performance

All data taken at +28VDC



Attach amplifier to heatsink using thin layer of thermal compound. The amplifier will produce approximately 20W of heat, so a medium size heatsink will be adequate - a heatsink with approximate dimensions 2 x the area of the lab amp and approx 1.0" deep. A smaller heatsink may be used if any airflow is used.

Attach RF Input and RF Output using SMA Female connectors and tighten. Install ground wire and Vsup using solder connections - make sure to attach positive wire to Vsup terminal. If optional disable is ordered, install using disable terminal on input side of amplifier.

To operate, apply Vsup and amplifier is ready to operate.



Ordering Information:

Order Code	Description	DRFT Reference
LA2-1-1025-33	2W Broadband Laboratory amplifier module	4886

Options

-A12	Heat Sink Option	0202
-A13	Heat Sink Option with DC Fan, pre wired	0203
-A14	Ruggedized for vibration	0204
-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.

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.

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