TA1206 |350-6000 MHz 20W Amplifier with TX/RX Switch

Bi-Directional Amplifiers

Description

This class AB GaN module is designed for both military and commercial applications. It is capable of supporting any signal type and modulation format, including but not limited to 3-4G telecom, WLAN, OFDM, DVB, and CW/AM/FM. The latest device technologies and design methods are employed to offer high power density, efficiency, and linearity in a small, lightweight package.

Features

Temperature Alarm
Manual Tx/Rx Switching Available
Optional Heatsink
Over / Under / Reverse Voltage Protection

Specifications subject to change without notice. Typical performance at +28VDC at 25°C in a 50Ω system

Tx Specifications				
Parameter	**Min**	**Typ.**	**Max**	**Unit**
Operating Frequency	350		6000	MHz
PSat Power Output	13	20		W
Gain		45		dB
Gain Flatness		3.5		± dB
Input Return Loss		-10		dB
Operating Voltage	20		36	VDC
Current Draw @ +24V	2.9		4.2	A
Tx / Rx Switching Time		10**		mS

Rx Specifications				
Parameter	**Min**	**Typ.**	**Max**	**Unit**
P1dB Power Output		---		dBm
Insertion Loss	-0.5		-1.5	dB
Gain Flatness		---		± dB
Noise Figure		---		dB
OIP3		---		dBm
Input Return Loss		-10		dB
Current Draw		---		mA

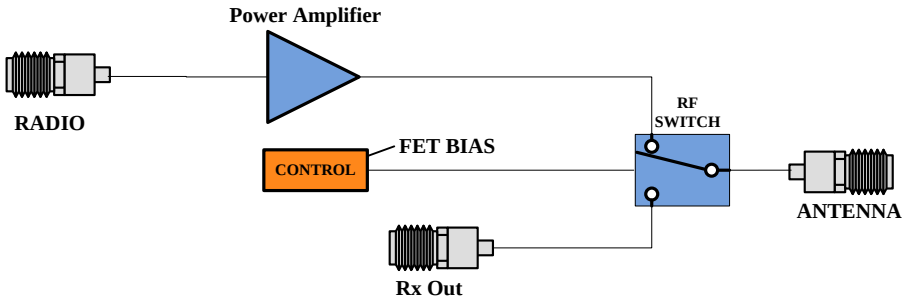
** Can be made faster. Will need engineering time.

Triad RF Systems Inc. | 11 Harts Ln, Suite i, East Brunswick, NJ 08816
Tel: 1-(855) 558-1001 x1 | sales@triadrf.com

MECHANICAL		
PARAMETER	VALUE	UNIT
Dimensions (L x W x H)	6.0 x 4.0 x .62	in
RF Connectors (Input / Output)	TX Input, RX Input = SMP, Antenna = SMA Female	--
DC / Control Connector	15 pin Micro D-Sub	--
Cooling	Heat Sink Required	--
Mounting	4-40 Through Holes (4X)	--
Weight	17	oz.
Weight With Heatsink	N/A	oz.

ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	70	°C
Storage Temp Range	-60	+100	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	0 dBm @ 6 GHz, -7 dBm @ 400 MHz		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+90		°C

High-Level Block Diagram

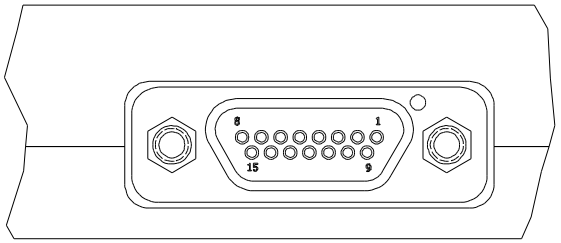


Ordering Guide – Configuration Information		
Model Number	Amplifier Option	Heat Sink Option
TAXXXX -	XXX -	XXX

Amplifier Options	
Suffix	Description
D01	Automatic Tx/Rx Switching
D02	Manual Tx/Rx Switching
DXX	Custom Amplifier Configuration (issued by Triad upon customer request)

Heat Sink Options	
Suffix	Description
(none)	No Heat Sink Included
HS	Standard Heat Sink
HSF	Heat Sink with Integrated Cooling Fan
HSX	Custom Heat Sink Configuration

TA1206 DC CONNECTOR PINOUT



DC CONNECTOR PINOUT				
PIN	NAME	TYPE	LEVEL	DESCRIPTION
1,2,9,10	+VDC	Power	--	Supply Voltage - Range Specified in Datasheet
7,8,14,15	GND	Power	--	+VDC Return
3	RX/TX	Input	3.3V TTL	TTL Low = RX Enabled, TTL High = TX Enabled
4	FS1	Input	3.3V TTL	See Truth Table
5	FS2	Input	3.3V TTL	See Truth Table
6	TEMP ALARM	Output	3.3V TTL	TTL Low = Normal operation, TTL High = Temperature exceeds 70 C
12	STATUS	Output	3.3V TTL	TTL Low = Fault Condition, TTL High = Normal Operation
13	SGND	--	-	Signal Ground

FILTER SELECTION TRUTH TABLE		
FS2	FS1	FILTER
LOW	LOW	INSERTION LOSS (THRU)
LOW	HIGH	850 MHz LPF
HIGH	LOW	1350 MHz LPF
HIGH	HIGH	HPF

NOTE: FILTER IS DETERMINED BY THE FS1 AND FS2 LEVELS ON THE RISING EDGE OF RX/TX SIGNAL. HOT SWITCHING DURING TX OPERATION IS NOT PERMITTED.

DRAWN	DMC	4/10/2017
DESIGNED	DMC	4/7/2017
CHECKED		
ENG APPROVED		
MFG APPROVED		

DIMENSIONS ARE IN INCHES
UNLESS SPECIFIED OTHERWISE
TOLERANCES
DECIMALS .XX ±.01 .XXX ±.005
FRACTIONS ±1/32
ANGLES ±2°

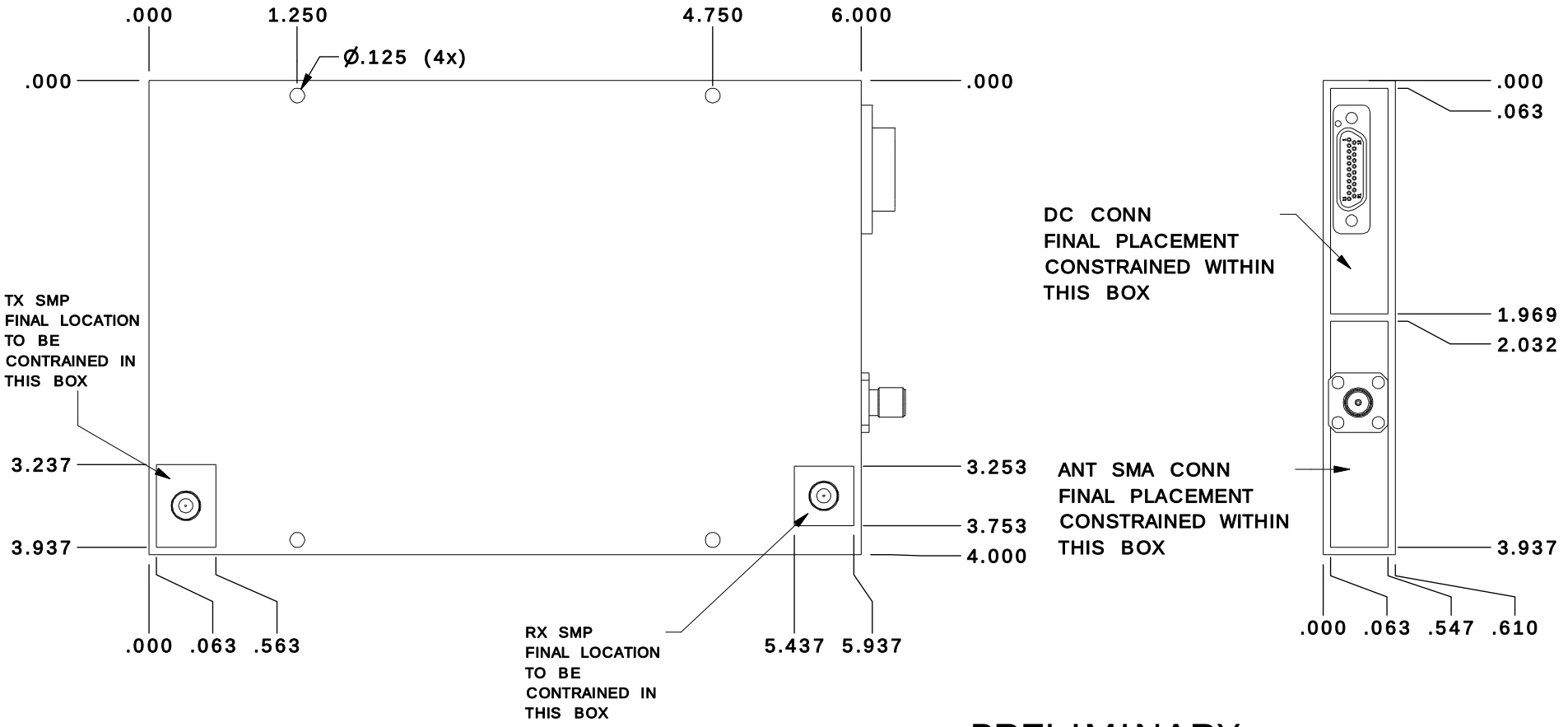
TRIAD RF SYSTEMS
11 HARTS LANE SUITE I
EAST BRUNSWICK, NJ 08816
855-558-1001

TA1206 OUTLINE DRAWING

SIZE	DWG NO.	REV
A	OL_TA1206_Prelim3	-

SCALE: NONE | CAGE CODE 67DZ3 | SHEET 3 OF 3

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
-	PRELIMINARY	4/7/17	DMC
-	CONNECTOR & HSG CHANGES	4/13/17	DMC



PRELIMINARY
UNCONTROLLED

NOTES:
1) MOUNTING HOLE PLACEMENT MAY CHANGE DEPENDING ON LAYOUT REQUIREMENTS

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