TTRM1191

4000-6000 MHz 5 W Bi-Directional Amplifier

Bi-Directional Amplifiers

Description

This class A GaAs 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

Manual or Automatic Tx/Rx Switching Available

+9V to +36V Input Voltage Range

Optional Heatsink

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

Tx Specifications				
Parameter	**Min**	**Typ.**	**Max**	**Unit**
Operating Frequency	4000		6000	MHz
P1dB Power Output	+36.0	+37.0		dBm
Gain	14.0	15.0		dB
Gain Flatness		0.2	0.6	± dB
Input Return Loss	-10	-14		dB
Operating Voltage	+9		+32	VDC
Current Draw		2.0	2.25	A
Tx / Rx Switching Time		1.0	2.0	uS

Rx Specifications				
Parameter	**Min**	**Typ.**	**Max**	**Unit**
P1dB Power Output		+5.0		dBm
Gain	9.0	10.0		dB
Gain Flatness		0.3	0.6	± dB
Noise Figure		3.0	3.5	dB
Input Return Loss	-12	-15		dB
Current Draw		0.0	0.0	mA

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rev 05/24/19

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Mechanical		
Parameter	**Value**	**Unit**
Dimensions (L x W x H)	3.25 x 2 x 0.993	in
RF Connectors (Input / Output)	SMA-F / SMA-F	--
Cooling	Baseplate Conduction - Optional Heatsink Available	--
Weight	6	oz.
Weight With Heatsink	16	oz.

Environmental / Protections			
Parameter	**Min**	**Max**	**Unit**
Operating Temperature (Housing Temp.)	-40	+85	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	25		dBm
PA Baseplate Shutoff Temperature	+85		°C

Input/Output Pins				
Amplifier Connector Type:		**Circular Push/Pull Male**		
Triad Cable Part Number:		**CBL29**		
Pin Label	**Name**	**Description**	**Type**	**Level**
1	+VDC	Supply Voltage - Range Specified in Datasheet	Power	--
2	+VDC	Supply Voltage - Range Specified in Datasheet	Power	--
3	TEMP	Temp Monitor: Temp in DegC = (Vout - 0.5V) * 100	Output	Analog
4	Tx/Rx	T/R Control - TTL Hi = Tx Mode, TTL Lo = Rx Mode	Input	5V TTL
5	GND	Ground	Power	--
6	GND	Ground	Power	--

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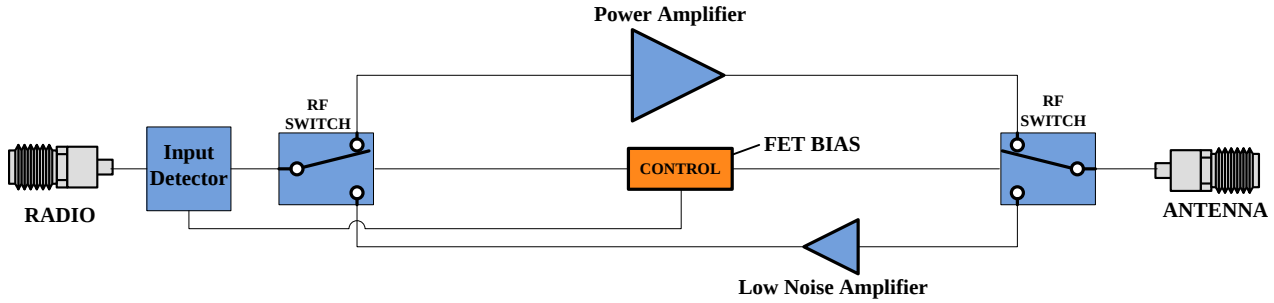
802-11g (20 MHz BW) Data Rate vs. Output Power			
OFDM Modulation	**Data Rate**	**POut (W) Min.**	**EVM**
64QAM	54 Mbps	1	≤ -27 dB
16QAM	36 Mbps	1	≤ -21 dB
QPSK	12 Mbps	1	≤ -15 dB
BPSK	9 Mbps	5	≤ -7 dB

See our application note that describes how this table was calculated and provides notes on in-system performance

High-Level Block Diagram

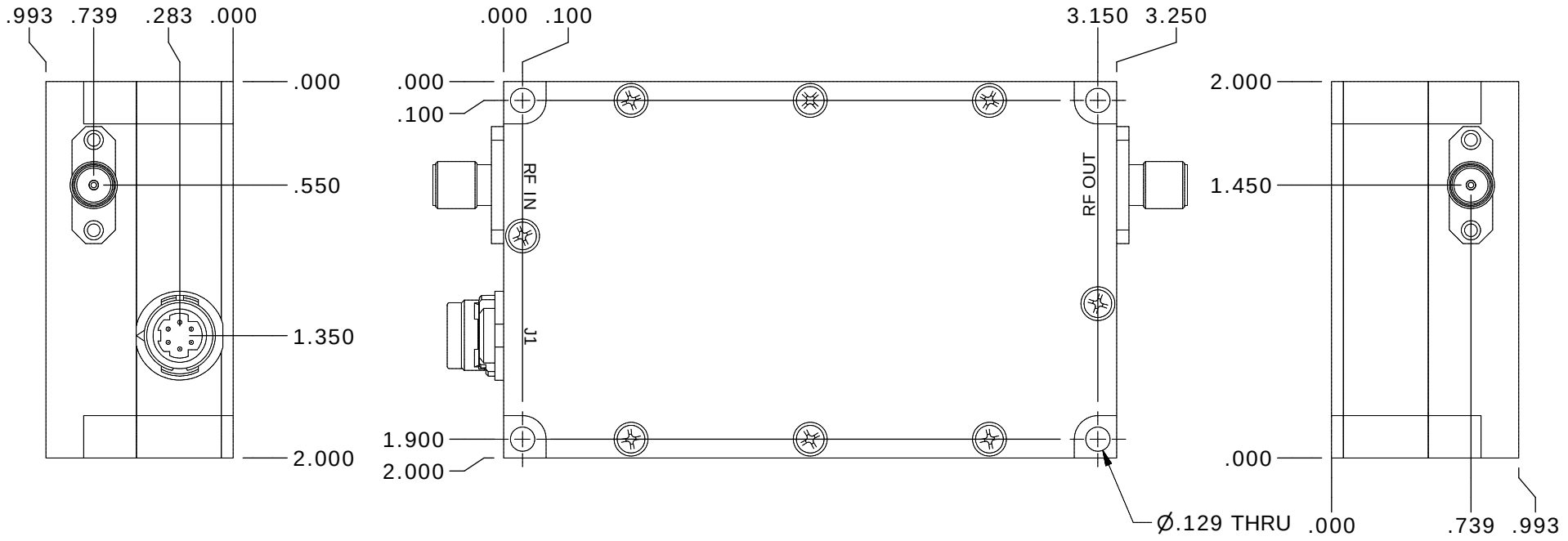


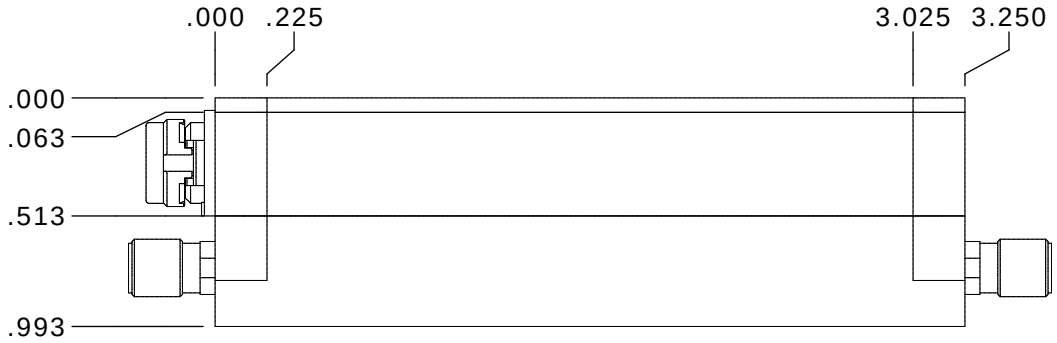
Ordering Guide – Configuration Information		
Model Number	**Amplifier Option**	**Heat Sink Option**
TTRMXXXX	- XXX	- XXX

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

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	INITIAL RELEASE	07/07/2014	DMC
1	E18330	6/6/18	SC





DRAWN	DCH	7/7/2014
DESIGNED	DCH	9/28/2012
CHECKED	SNB	8/14/2015
ENG APPROVED		
MFG APPROVED		

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

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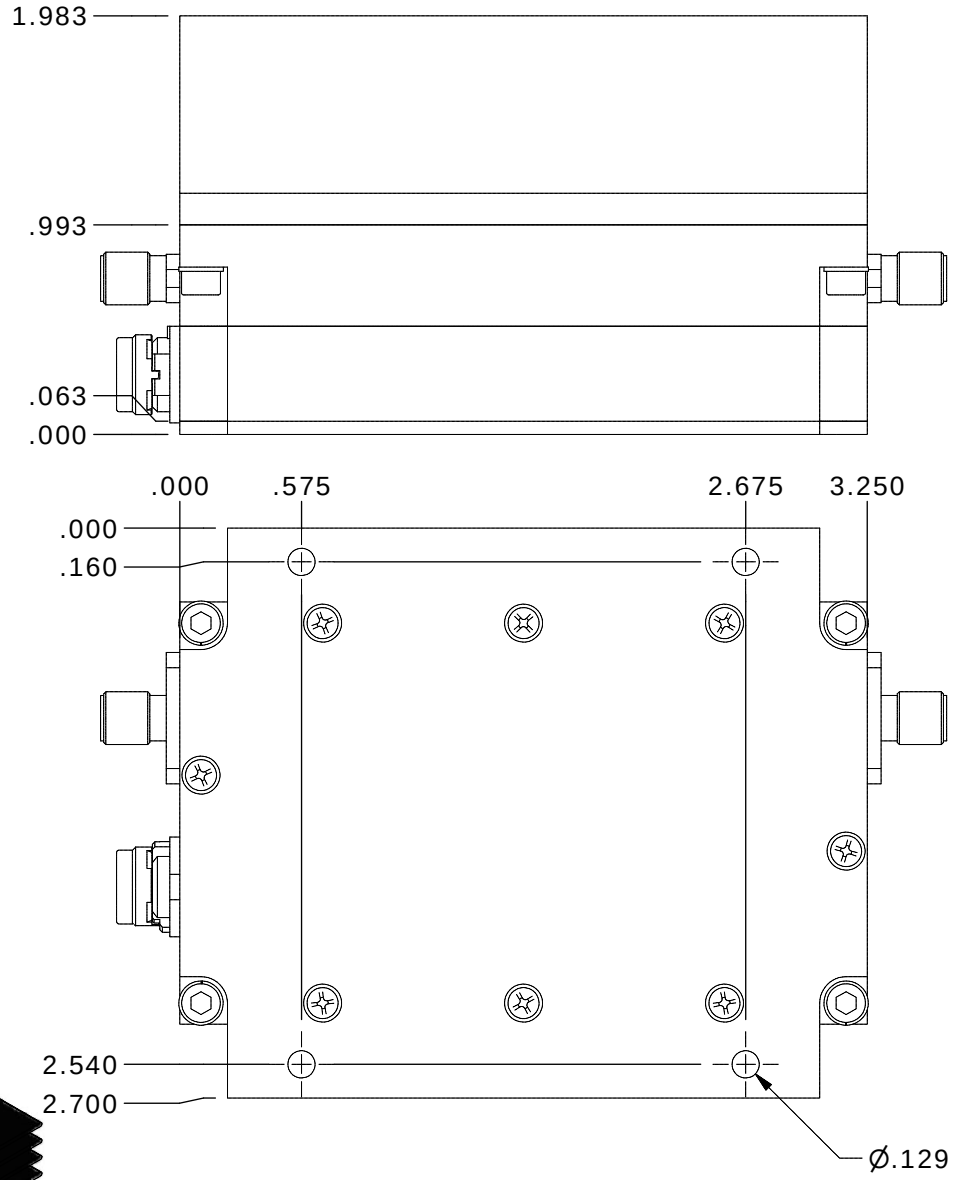
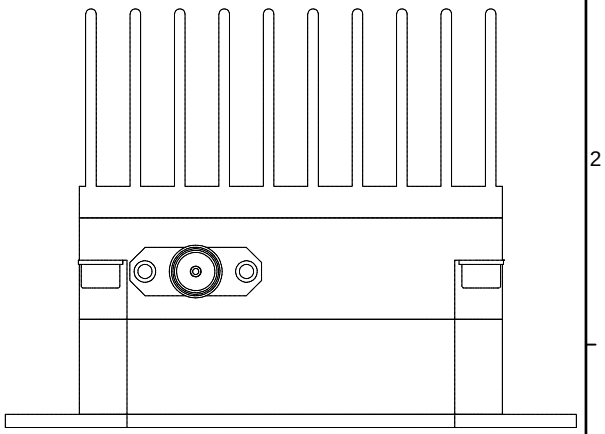
HOUSING OUTLINE DRAWING 119

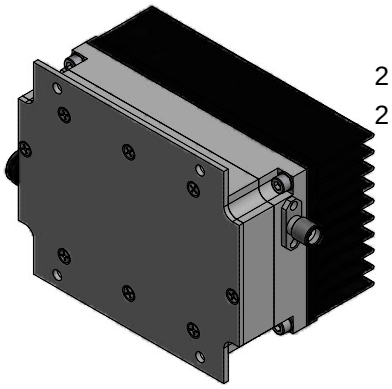
SIZE	DWG NO.	REV
A	OL_119	1

SCALE: NONE | CAGE CODE 67DZ3 | SHEET 1 OF 3

HEATSINK







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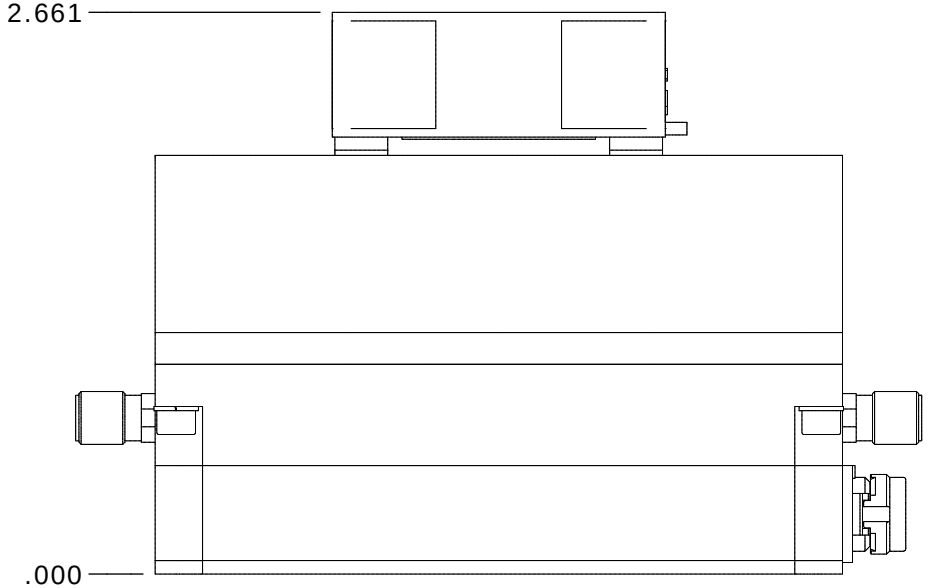
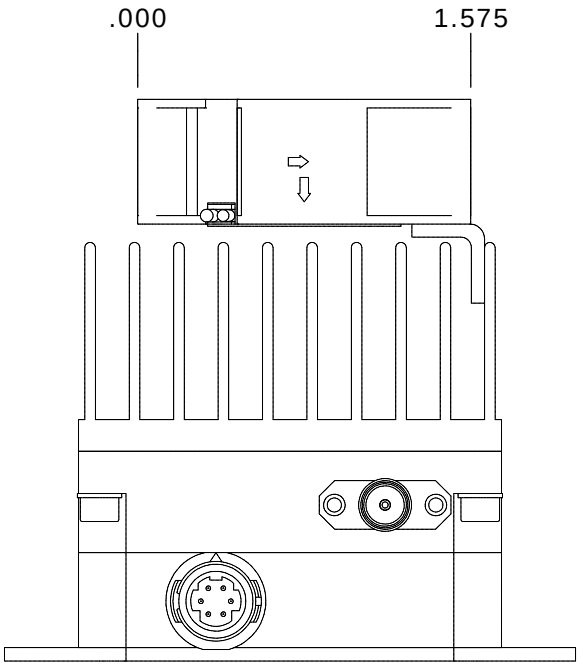
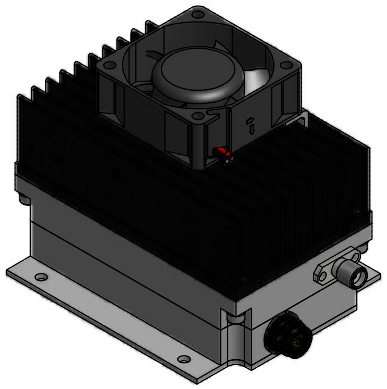
HEATSINK + FAN







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