Description

The TA1217 Power Amplifier is a class AB GaN module with an operating frequency range of 30 to 2700 MHz. Designed for both military and commercial applications, this amplifier features an input voltage range of +12 to +30 VDC and a saturated RF output power of +39 dBm. With the capability of supporting any signal type and modulation format, all in a low-SWaP package, this unit is ideal for applications where high power-density, efficiency, and linearity are key.

TABLE OF CONTENTS

Features

- Temperature Monitor Output
- Over-Temperature Protection

Applications

- Military or Commercial Radio Systems
- Unmanned Systems
- Vehicle Systems
- Aircraft Systems
- Fixed Site Infrastructure

CHARACTERISTICS & SPECIFICATIONS

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

Tx Specifications (Per Channel)

Parameter	Min.	Typ.	Max	Unit
Operating Frequency	30	—	2700	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	29	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	36	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	39	—	dBm
Small Signal Gain	33	39	—	dB
Small Signal Gain Flatness	—	—	4	dB (peak to peak)
Input Return Loss	—	—	-10	dB
Tx Switching Time	—	2	4	µS

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	12	28	30	VDC	—
RMS Operating Current Draw (Idle)	—	0.5	—	A	VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	0.83	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle
RMS Operating Current Draw (BPSK Power Output)	—	0.77	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle

Mechanical Specifications

Parameter	Value	Unit
Dimensions (L x W x H)	3.25 x 2.42 x 0.54 (82.6 x 61.5 x 13.7)	in (mm)
Cooling	Baseplate Conduction	—
Weight	4.5 (128)	oz (g)

CHARACTERISTICS & SPECIFICATIONS (CONT.)

Specifications subject to change without notice.

Interface Specifications

Parameter	Value	Notes
RF Connectors (Input / Output)	SMA-F / SMA-F	—
Power / Signal Connector	M80-5400842	Connector appearing on unit (Manufacturer P/N)
Mating Connector	M80-4610842	Mating connector required for interfacing (Manufacturer P/N)
Test Integration Cable	CBL50	Triad P/N available for purchase separately

Environmental Specifications

Parameter	Min.	Max	Unit
Operating Temperature (Housing Temp.)	-20	85	°C
Storage Temperature	-55	85	°C
Altitude	0 (0)	20000 (6096)	ft. (m.)
Ingress Protection Rating	IP40		—
Shock / Vibration	Designed to comply with MIL-STD-810 Shock / Vibration Test Methods		—

Protections and Maximum Ratings

Parameter	Value	Unit	Notes
Maximum RF Input (Per Channel)	8	dBm	CW Power
Over Temp Protection Trip Level	85	°C	Internally Monitored System Temperature
RF Output Open Load Survivability	38	dBm	CW with Open Circuit at Antenna Port

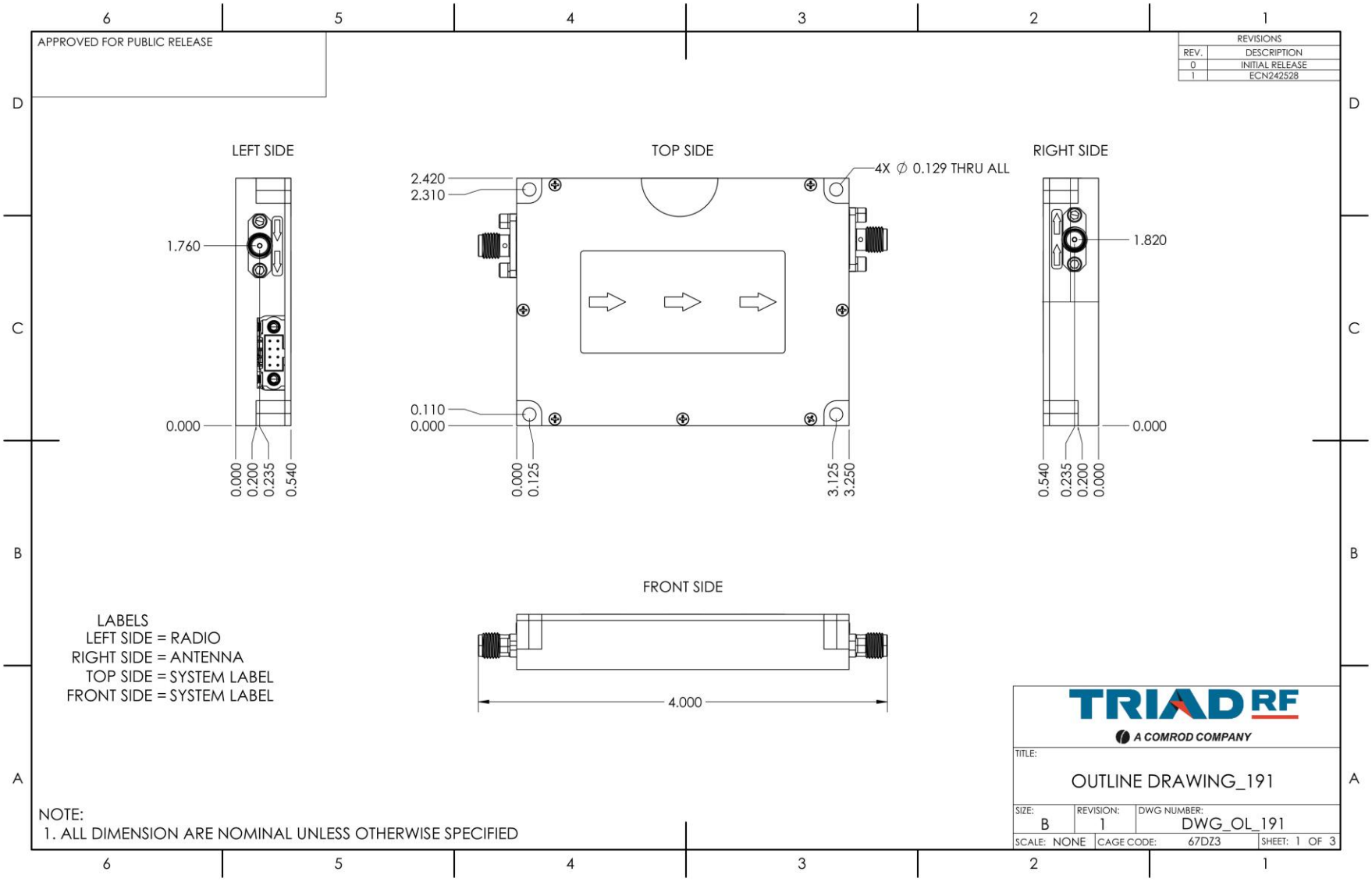
DC / CONTROL CONNECTOR

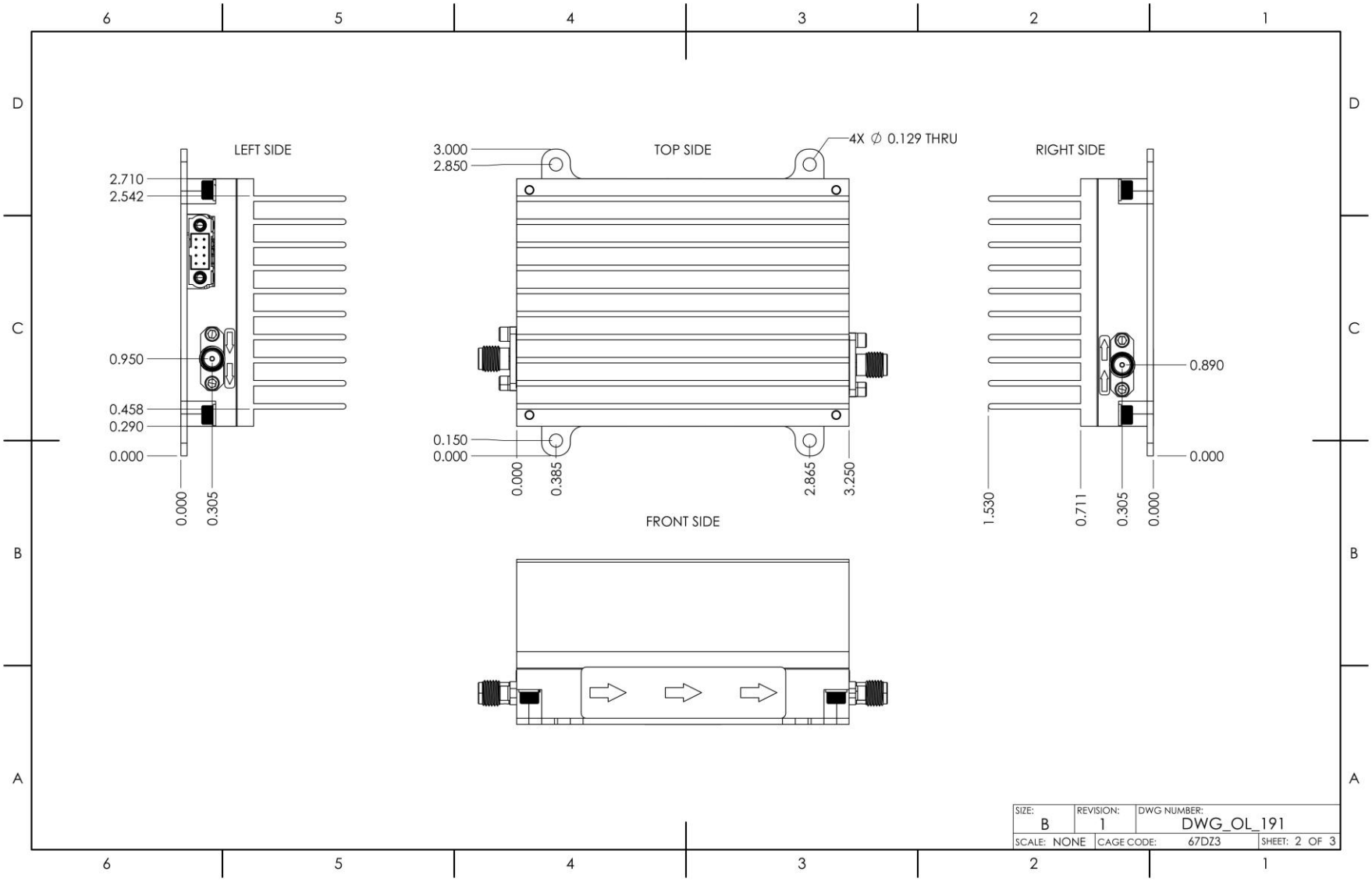
Input and Output Pins

TTRM Connector Part Number			Mating Connector Part Number	
M80-5400842			M80-4610842	
Pin	**Label**	**Type**	**I/O**	**Notes**
1	TEMP	Signal	Output	Temp Monitor Temp in DegC = (Vout - 0.5V) * 100
2	I/O	Signal	Input	TA: TTL High or No Connection = Enable TTL Low = Disable Manual Switching TTRM: TTL High = Tx TTL Low = Rx Automatic Switching TTRM: Pin not required. Do not use.
3	VDC	Power	Input	Supply Voltage - Range Specified in Data Sheet
4	VDC	Power	Input	Supply Voltage - Range Specified in Data Sheet
5	GND	Power	Input	Supply Voltage Return (Ground)
6	GND	Power	Input	Supply Voltage Return (Ground)
7	GND	Power	Input	Supply Voltage Return (Ground)
8	SGND	Signal	N/A	Signal Ground

Note: All +VDC and GND pins should be populated as shown.

MECHANICAL DRAWING

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0.000
0.305
TOP SIDE
4X ∅ 0.129 THRU
3.000
2.850
0.150
0.000
0.000
0.385
2.865
3.250
RIGHT SIDE
0.890
0.000
1.530
0.711
0.305
0.000
FRONT SIDE
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REVISION: 1
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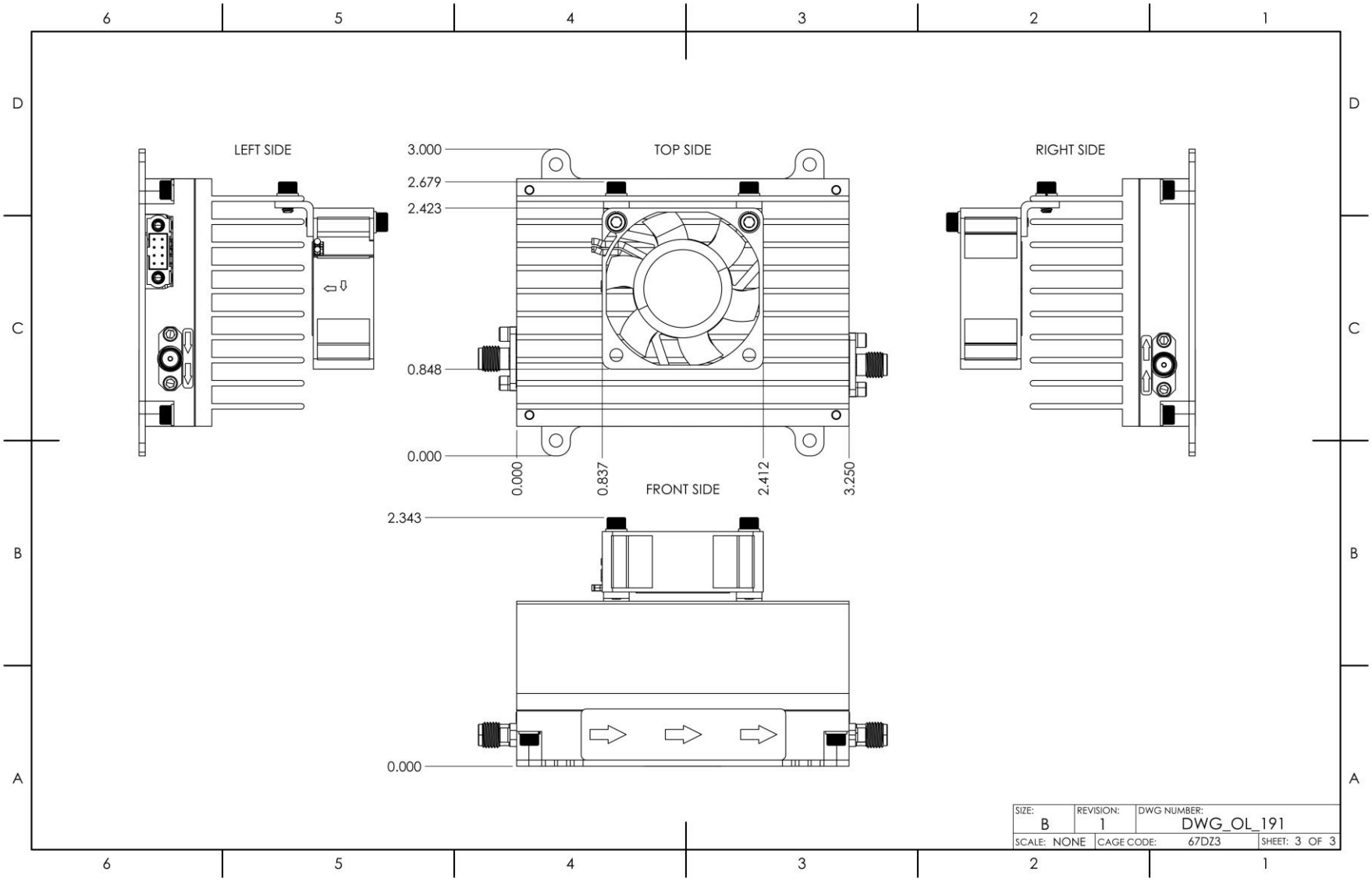
SCALE: NONE
CAGE CODE: 67DZ3
SHEET: 2 OF 3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RIGHT SIDE
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0.000
SIZE: B
REVISION: 1
DWG NUMBER: DWG_OL_191
SCALE: NONE
CAGE CODE: 67DZ3
SHEET: 3 OF 3