Description

The TA1056 SISO Power Amplifier is a class AB GaN module with an operating frequency range of 20 to 1000 MHz. Designed for both military and commercial applications, this amplifier features an input voltage range of +27 to +30 VDC and a saturated RF output power of +46 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.

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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	20	—	1000	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	37	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	44	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	46	—	dBm
Small Signal Gain	47.5	50	—	dB
Small Signal Gain Flatness	—	—	3	dB (peak to peak)
Input Return Loss	—	—	-7	dB
Tx Switching Time	—	3	5	µS

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	27	28	30	VDC	—
RMS Operating Current Draw (Idle)	—	2.2	—	A	VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	2	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle
RMS Operating Current Draw (BPSK Power Output)	—	3.9	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle

Mechanical Specifications

Parameter	Value	Unit
Dimensions (L x W x H)	3.99 x 2.3 x 0.85 (101.3 x 58.4 x 21.6)	in (mm)
Cooling	Baseplate Conduction	—
Weight	7 (198)	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	M80-5401042	Connector appearing on unit (Manufacturer P/N)
Mating Connector	M80-4611005	Mating connector required for interfacing (Manufacturer P/N)
Test Integration Cable	CBL11	Triad P/N available for purchase separately

Environmental Specifications

Parameter	Min.	Max	Unit
Operating Temperature (Housing Temp.)	-40	85	°C
Storage Temperature	-55	85	°C
Altitude	0 (0)	30000 (9144)	ft. (m.)
Ingress Protection Rating	IP54		—
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)	1	dBm	CW Power
Over Temp Protection Trip Level	90	°C	Internally Monitored System Temperature
RF Output Open Load Survivability	40	dBm	CW with Open Circuit at Antenna Port

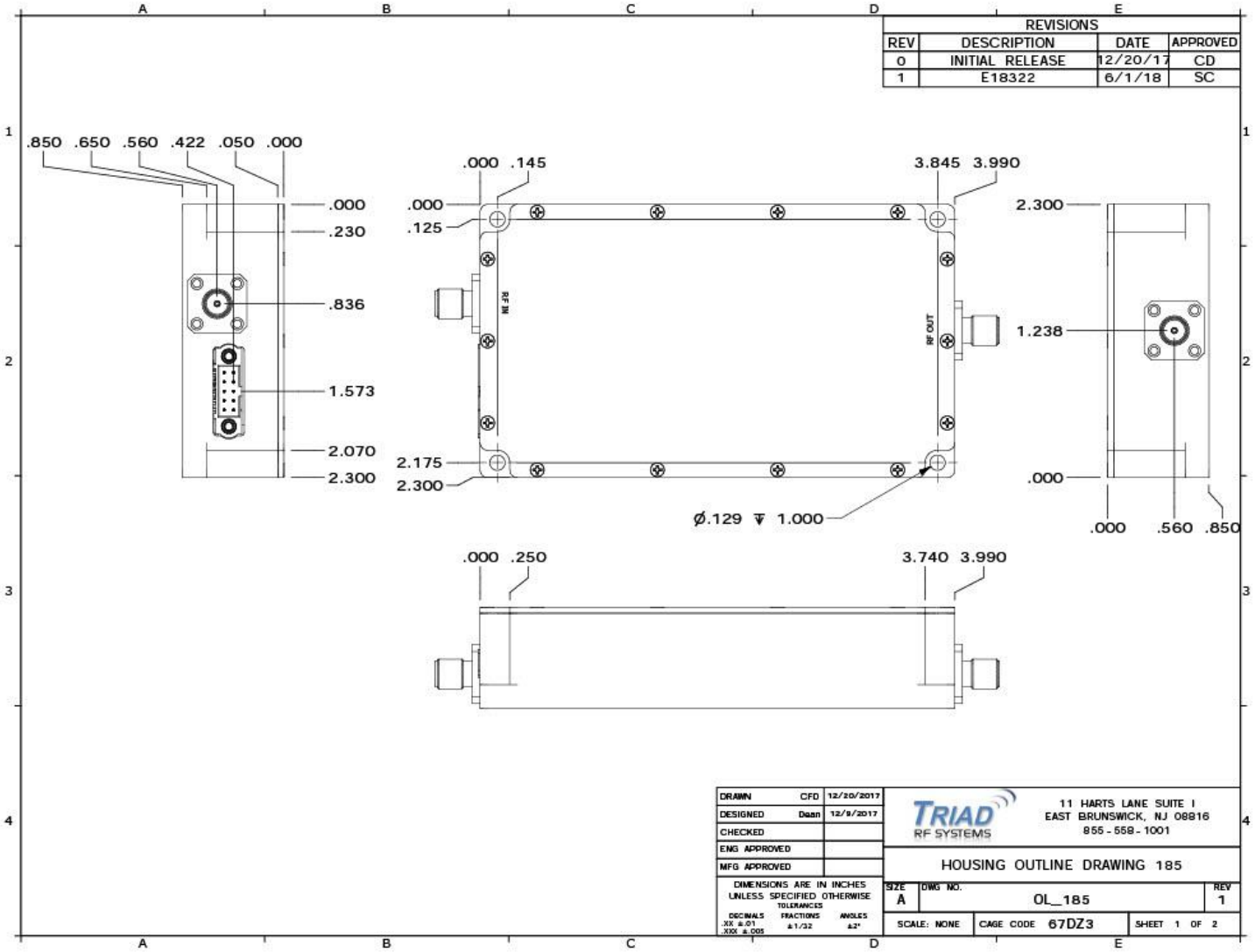
DC / CONTROL CONNECTOR

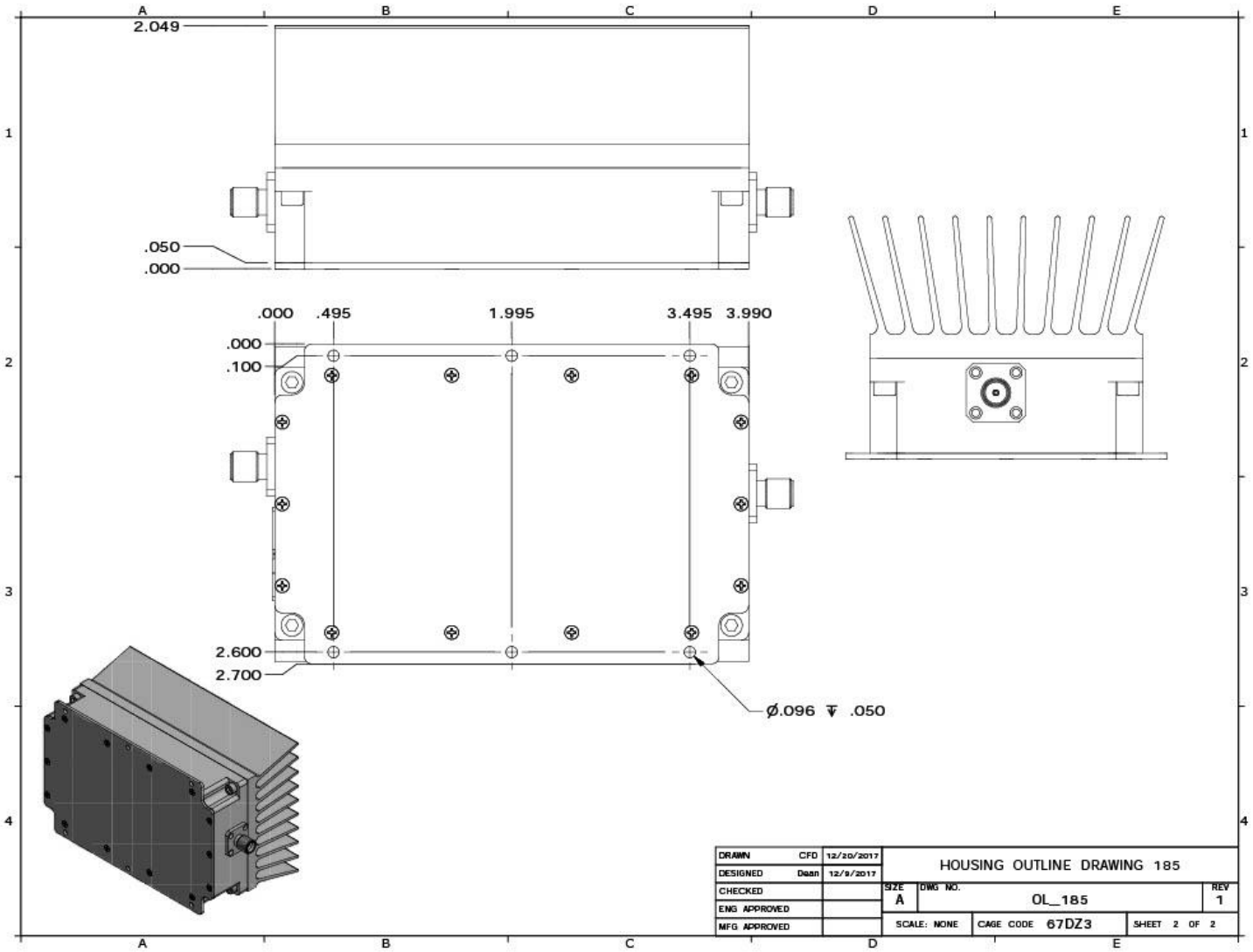
Input and Output Pins

TTRM Connector Part Number			Mating Connector Part Number	
M80-5401042			M80-4611005	
Pin	**Label**	**Type**	**I/O**	**Notes**
1	Vin	Power	N/A	Supply Voltage - Range Specified in Data Sheet
2	Vin	Power	N/A	Supply Voltage - Range Specified in Data Sheet
3	GND	Power	N/A	Power Supply Return (Ground)
4	ON/OFF	Signal	Input	TTL High or No Connection = Enable TTL Low = Disable
5	N/C	N/A	N/A	NO CONNECTION
6	Vin	Power	N/A	Supply Voltage - Range Specified in Data Sheet
7	GND	Power	N/A	Power Supply Return (Ground)
8	GND	Power	N/A	Power Supply Return (Ground)
9	TEMP	Signal	Output	Temp Monitor Temp in DegC = (Vout - 0.5V) * 100
10	SIG GND	Signal	N/A	Signal Ground

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

MECHANICAL DRAWING

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HOUSING OUTLINE DRAWING 185
SIZE A
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REV 1
SCALE: NONE
CAGE CODE 67DZ3
SHEET 2 OF 2