



Description

The TA1049 SISO Power Amplifier is a class AB GaN module with an operating frequency range of 700 to 6000 MHz. Designed for both military and commercial applications, this amplifier features an input voltage range of +9 to +36 VDC and a saturated RF output power of +40 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

- Product Features and Applications
- Characteristics and Specifications
- Power Supply Specifications
- Mechanical Specifications
- Interface Specifications
- Environmental Specifications
- Protections and Maximum Ratings
- DC and Control Connector
- Mechanical Drawing

Features

- Over / Under / Reverse Voltage Protection
- 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	700	—	6000	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	25.5	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	35	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	40	—	dBm
Small Signal Gain	33	40	—	dB
Small Signal Gain Flatness	—	—	2	dB (peak to peak)
Input Return Loss	—	—	-10.5	dB
Tx Switching Time	—	1	2	μS

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	9	28	36	VDC	—
RMS Operating Current Draw (Idle)	—	0.4	—	A	VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	0.6	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle
RMS Operating Current Draw (BPSK Power Output)	—	0.9	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle

Mechanical Specifications

Parameter	Value	Unit
Dimensions (L x W x H)	3.75 x 2 x 1.063 (95.3 x 50.8 x 27)	in (mm)
Cooling	Baseplate Conduction	—
Weight	8 (227)	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	DA7W2PA00LF	Connector appearing on unit (Manufacturer P/N)
Mating Connector	DA7W2SA00LF	Mating connector required for interfacing (Manufacturer P/N)
Test Integration Cable	CBL1	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)	10	dBm	CW Power
Over Temp Protection Trip Level	85	°C	Internally Monitored System Temperature
RF Output Open Load Survivability	36	dBm	CW with Open Circuit at Antenna Port

DC / CONTROL CONNECTOR

Input and Output Pins

TTRM Connector Part Number			Mating Connector Part Number	
DA7W2PA00LF			DA7W2SA00LF	
Pin	Label	Type	I/O	Notes
A1	GND	Power	N/A	Power Supply Return (Ground)
A2	Vin	Power	N/A	Supply Voltage - Range Specified in Data Sheet
1	TEMP	Signal	Output	Temp Monitor $\text{Temp in DegC} = (\text{Vout} - 0.5\text{V}) * 100$
2	Enable	Signal	Input	TTL High or No Connection = Enable TTL Low = Disable
3	REV	Signal	Output	Reverse Power Detector
4	SIG GND	Signal	N/A	Signal Ground
5	FWD	Signal	Output	Forward Power Detector

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

MECHANICAL DRAWING





