



Description

The TA1216 SISO Power Amplifier is a class AB GaN module with an operating frequency range of 300 to 6000 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 +45 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

- 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	300	—	6000	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	30	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	42	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	45	—	dBm
Small Signal Gain	51	55	—	dB
Small Signal Gain Flatness	—	—	3	dB (peak to peak)
Input Return Loss	—	—	-9.5	dB
Tx Switching Time	—	4	5	μS

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	12	28	30	VDC	—
RMS Operating Current Draw (Idle)	—	0.23	—	A	VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	1.8	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle
RMS Operating Current Draw (BPSK Power Output)	—	3	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle

Mechanical Specifications

Parameter	Value	Unit
Dimensions (L x W x H)	3.755 x 2.3 x 0.95 (95.4 x 58.4 x 24.1)	in (mm)
Cooling	Baseplate Conduction	—
Weight	9.5 (269)	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	MDM-21SCBRP	Connector appearing on unit (Manufacturer P/N)
Mating Connector	M83513/03-C03C	Mating connector required for interfacing (Manufacturer P/N)
Test Integration Cable	CBL77	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)	20000 (6096)	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)	8	dBm	CW Power
Over Temp Protection Trip Level	85	°C	Internally Monitored System Temperature
RF Output Open Load Survivability	45	dBm	CW with Open Circuit at Antenna Port

DC / CONTROL CONNECTOR

Input and Output Pins

TTRM Connector Part Number			Mating Connector Part Number	
MDM-21SCBRP			M83513/03-C03C	
Pin	Label	Type	I/O	Notes
20	N/C	N/A	N/A	NO CONNECTION
1	Vin	Power	N/A	Supply Voltage
2	Vin	Power	N/A	Supply Voltage
3	Vin	Power	N/A	Supply Voltage
12	Vin	Power	N/A	Supply Voltage
13	Vin	Power	N/A	Supply Voltage
14	Vin	Power	N/A	Supply Voltage
15	Vin	Power	N/A	Supply Voltage
4	GND	Power	N/A	Power Supply Return
5	GND	Power	N/A	Power Supply Return
6	GND	Power	N/A	Power Supply Return
7	GND	Power	N/A	Power Supply Return
16	GND	Power	N/A	Power Supply Return
17	GND	Power	N/A	Power Supply Return
18	GND	Power	N/A	Power Supply Return
8	I/O	Signal	Input	TTL High or No Connection = Enable TTL Low = Disable
9	TEMP	Data	Output	Temp Monitor $\text{Temp in DegC} = (\text{Vout} - 0.5\text{V}) * 100$
10	STATUS	Signal	Output	AMP STATUS +5V = Functioning
11	SIG GND	Signal	N/A	Signal Ground
21	STATUS 1	Signal	Output	Power Supply Voltage Level, Not Current Limited
19	N/C	N/A	N/A	NO CONNECTION

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

MECHANICAL DRAWING





