



Description

The TTRM1118-D02 SISO Bi-Directional Amplifier is a class AB GaN module with an operating frequency range of 300 to 400 MHz. Designed for both military and commercial applications, this amplifier features an input voltage range of +12 to +32 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 essential.

TTRM1118-D02

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Features

- Temperature Monitor Output
- Over-Temperature Protection
- Manual Tx/Rx Switching

Applications

- Unmanned Systems
- Military or Commercial Radio 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	—	400	MHz
64QAM Power Output 20 MHz BW, -27 dB EVM Limit	30	—	—	dBm
BPSK Power Output 20 MHz BW, -7 dB EVM Limit	38	—	—	dBm
Saturated Power Output CW Sweep at Design Limit	—	39	—	dBm
Small Signal Gain	15	16	—	dB
Small Signal Gain Flatness	—	—	1	dB (peak to peak)
Input Return Loss	—	—	-10	dB
Tx / Rx Switching Time	—	2	4	μS

Rx Specifications (Per Channel)

Parameter	Min.	Typ.	Max	Unit
Small Signal Gain	-1	1	—	dB
Small Signal Gain Flatness	—	—	2	dB (Peak to Peak)
Noise Figure	—	2	4	dB
Input Return Loss	—	—	-10	dB

Power Supply Specifications

Parameter	Min.	Typ.	Max	Unit	Notes
Supply Voltage Range	12	28	32	VDC	—
RMS Operating Current Draw (Idle)	—	0.25	—	A	28VDC Supply Voltage, Idle in Receive Mode
RMS Operating Current Draw (64QAM Power Output)	—	0.4	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle
RMS Operating Current Draw (BPSK Power Output)	—	0.5	—	A	28VDC Supply Voltage, 802.11 WLAN Signal, 50% Duty Cycle

CHARACTERISTICS & SPECIFICATIONS (CONT.)

Specifications subject to change without notice.

Mechanical Specifications

Parameter	Value	Unit	Notes
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	8 (227)	oz (g)	—

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.)	-40	85	°C
Storage Temperature	-55	85	°C
Altitude	0 (0)	30000 (9144)	ft. (m.)
Ingress Protection Rating	IP40		—
Shock / Vibration	Designed to comply with MIL-STD-810 Shock / Vibration Test Methods		—

Protections & Maximum Ratings

Parameter	Value	Unit	Notes
Maximum RF Input (Per Channel)	26	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 CONNECTORS

Input / 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

MECHANICAL DRAWING





