TSA-213241

High Power GaN Amplifier

Technical
Specifications

**100 to 1,000 MHz,
20 Watts**

EXPORT RESTRICTIONS MAY APPLY

Fast Data Transfers

The TSA-213241 amplifier provides nominal output power of 20 Watts. The amplifier uses control circuitry to ensure safe startup and automatic thermal shutdown and recovery. The amplifiers have an external pin for TTL on/off control. On/Off Low or High can be specified; standard is Off/Low.

Heat sinking is required to keep the case temperatures within a safe operating range. A thin layer of thermal grease or HiTherm (for example the HT-2500 series) helps provide a low resistance thermal path between the case and the mounting surface. The mounting surface should be metal with heat conduction of aluminum or better. Heat sink size depends on whether fan-driven air cooling is used, or if only convection is used.

Maximum Tj of amplifier is 225°C.

Heat Sink Warning

This amplifier requires an adequate heat sink to prevent damage. Maximum case temperature must not be exceeded. The package is designed to provide adequate heat transfer to proper aluminum heat sink.

Typical Values

- Broadband: 100 - 1,000 MHz
- High Saturated Power, Psat: 20-25 W, (+43dBm)
- Small hermetic package
- Dimensions: 2.9”L x 2.0”W x 0.42”H

Teledyne Microwave Solutions
Aerospace & Defense Electronics

TELEDYNE

Specifications*

Parameter	Guarenteed -55 to +85°C
Frequency (Min.)	100 - 1,000 MHz
Small Signal Gain (Min.)	55 dB
Gain Flatness (Max.)	±1.0 dB
Noise Figure (Max.)	4.0 dB
SWR (Max.) Input/Output	2.0:1/2.3:1
Power Output (Min.) @ 5 dB comp	+43.65 dBm
DC Current (Max.)	2.9A (32V), 0.5A (8V) Typ.
Switching Speed (Max.) 50% TTL to 90% Rise Time or 10% Fall Time	150 ns Typ.

*Measured in a 50-ohm system at +32V

^ Faster switching speed option available upon request

Intermodulation Performance

Parameter	Value
Second Order Harmonic Intercept Point	+80 dBm
Second Order Two Tone Intercept Point	+74 dBm

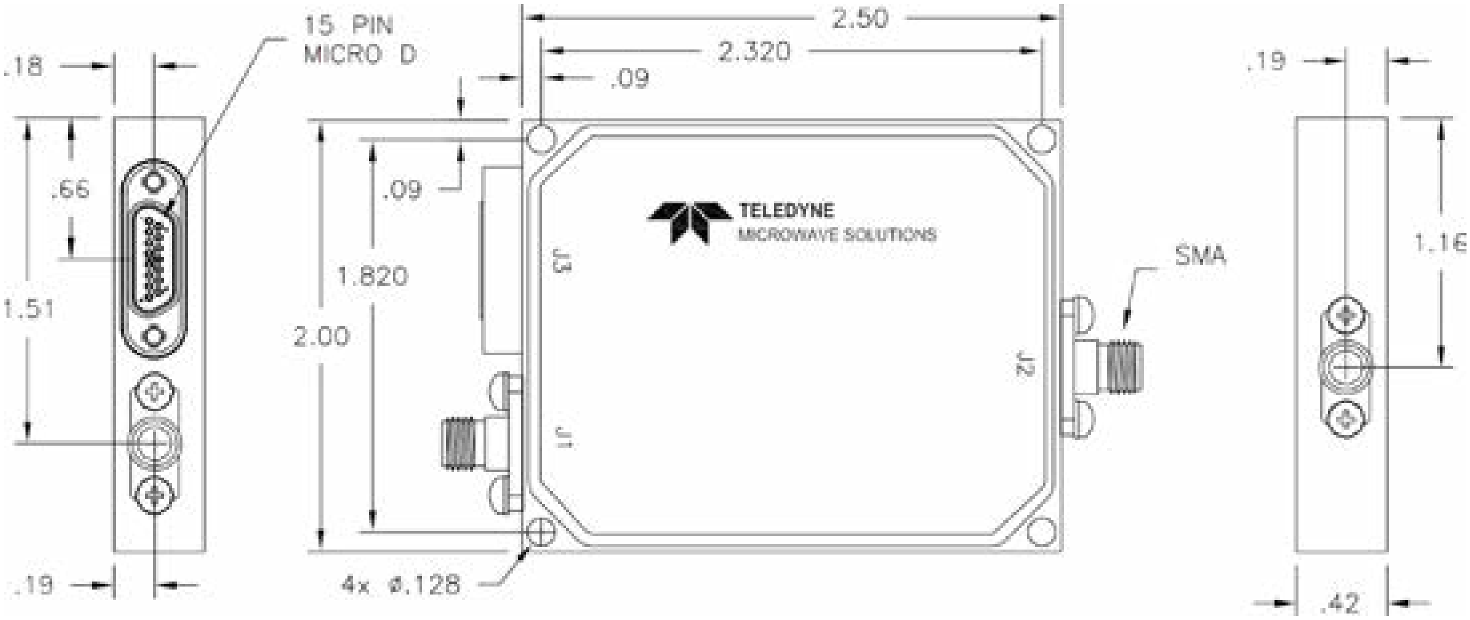
PSAT Performance

Parameter	Value
Storage Temperature	-62 to +125°**C**
Maximum Case Temperature, +32V	+85°**C**
Maximum DC Voltage	+33 Volts
Maximum RF Input Power	+10 dBm
Burn-in Temperature, +29V	+85°**C**
Thermal Resistance[1] (0jc)	+5.7°**C/Watt**
Junction TemperatureRise Above Case (Tjc), +32V	+114°**C**

[1] Thermal resistance is based on total power dissipation

Outline Drawing - High Power GaN Amplifier

Please contact factory for finish and outline options



Third Angle Projection

Inch [MM]

.XX = ±.02 [.5]
.XXX = ±.010 [.25]

Logic Table

TTL	State
HIGH	ON
LOW	OFF

Notes: (Unless otherwise specified)

1. Dimensions are in inches
2. Tolerances: X.XXX± 0.005
   X.XX±0.01
3. Marking as shown shall be permaanent and legible per MIL-STD-130 using black epoxy base ink
4. Case material: Aluminum
5. Finish: All surfaces except mounting surface, connectors and pins, alignment slots and Micro-D connector, are painted with epoxy paint per MIL-C-22750 over epoxy primer per MIL-P-23377, Type I. Color is Teledyne standard color chip 26231 per FED-STD-595 mounting surface is Chem Film per MIL-DTL-5541, Class 3, Type I.
6. Weight not to exceed 0.40 pounds