

# TSA-213245 2000 TO 6000 MHz, 40 WATTS HIGH POWER GaN AMPLIFIER

Typical Values	TSA213245
Broadband .....	2000-6000 MHz
High Saturated Power, Psat .....	28-42 W, (+44 - +46.3 dBm)
Small Hermetic Package, 2.5"L x 2"W x 0.42"H	

## SPECIFICATIONS\*

Parameter	Guaranteed -55 to +85 °C
Frequency (Min.)	2000-6000 MHz
Small Signal Gain (Min.)	50 dB
Gain Flatness (Max.)	±1.0 dB
Noise Figure (Max.)	4.0 dB
SWR (Max.) Input/Output	2.0:1/2.0:1
Power Output (Min.) @ 5 dB comp.	+45 dBm
DC Current (Max.)	4.5A (28V), 0.45A (8V) Typ.
Switching Speed (Max.) 50% TTL to 90% Rise time or 10% Fall Time^	100 ns Typ

\* Measured in a 50-ohm system at +28V.

^ Faster switching speed option available upon request.

## INTERMODULATION PERFORMANCE

Typical @ 25 °C	TSA213245
Second Order Harmonic Intercept Point .....	+82 dBm
Second Order Two Tone Intercept Point .....	+76 dBm

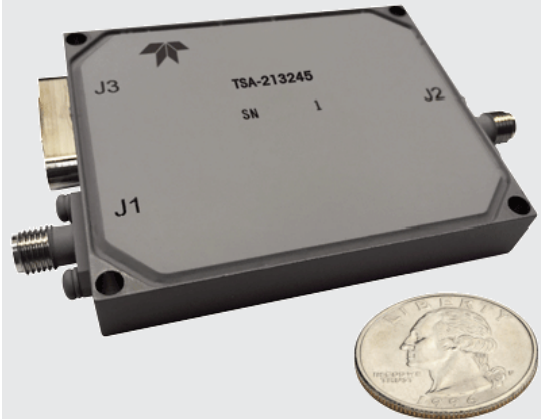
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-62 to +125 °C
Maximum Case Temperature, +28V .....	+85 °C
Maximum DC Voltage .....	+33 Volts
Maximum RF Input Power .....	+10 dBm
Burn-in Temperature, +28V .....	+85 °C
Thermal Resistance <sup>1</sup> (θ <sub>jc</sub> ) .....	+3 °C/Watt
Junction Temperature Rise Above Case (T <sub>jc</sub> ), +32V .....	+120 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

## TSA-213245

High Power GaN Amplifier  
Band 2 Housing



### 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.

The TSA-213245 amplifier provides nominal output power of 28-42 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.

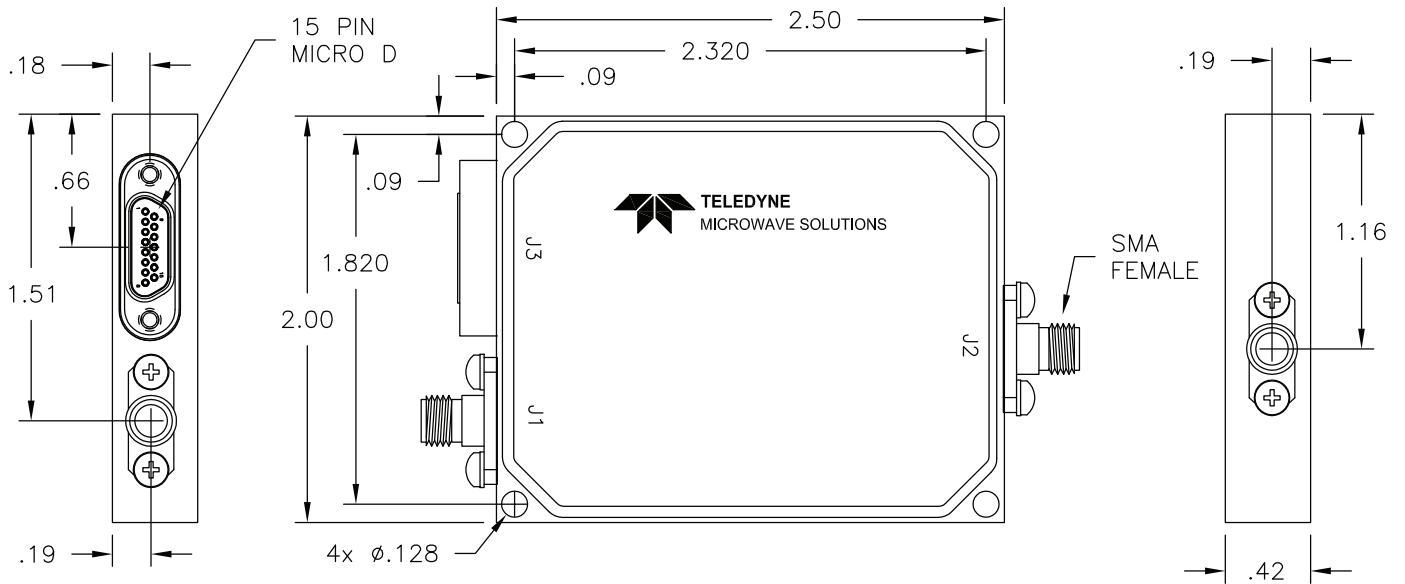
Maximum T<sub>j</sub> of amplifier is 225°C.

### LOGIC TABLE

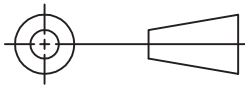
TTL	STATE
HIGH	ON
LOW	OFF

DIMENSIONS ARE IN INCHES (MILLIMETERS)

**OUTLINE DRAWING - High Power GaN Amplifier**



THIRD ANGLE PROJECTION



INCH [MM]

.XX =  $\pm$ .02 [.5]  
 .XXX =  $\pm$ .010 [.25]