

TECHNICAL DATASHEET

AVBR0830H47

The AVBR0830H47 is a 50W high gain Solid State Linear High Power Amplifier. This amplifier module utilizes the latest high power RF GaN transistors and also features high efficiency and linearity, with protection functions to ensure high availability. With good Amplitude and Phase Consistency, This amplifier is suitable for Linear System and high power combination.

Features

- 0.8GHz-3GHz frequency range
- Psat 47dBm Min
- Power gain 48dB
- 50 ohm input/output impedance
- Built-in control, monitoring and protection circuits
- Solid-state Class AB Broadband design
- Instantaneous ultra-broadband
- Suitable for CW, Pulse, Modulated Signal
- Small and lightweight
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS(T=25°C,DC Voltage= 28V, Load VSWR ≤ 1.2)

| Description | Symbol | Min | Typ | Max | Unit |
|---|----------------------------------|-----|---------|---------|------|
| Operating Frequency | BW | 0.8 | | 3 | GHz |
| Output Power CW [Pin= 0 dBm] | Psat | 47 | 48 | | dBm |
| Output P1dB | P1dB | 44 | 45 | | |
| Power Gain @ Psat | Gp | | 48 | | dB |
| Power Gain Flatness @ Rated Psat | ΔGp | | ± 1.2 | ± 1.5 | dB |
| Input Power for Rated Psat | PIN | | 0 | | dBm |
| Harmonics @ Pout =40W | 2 nd /3 rd | | -20/-20 | -15/-15 | dBc |
| Noise Figure(If Needed, Please Contact) | NF | | 8 | 10 | dB |
| Spurious Signals@ Pout =40W | Spur | | | -60 | dBc |
| Input Return Loss | S11 | | | -15 | dB |
| Third Order Intercept Point | | | | | |
| 2-Tone @ 38dBm/Tone, 5MHz Space | IP3 | | +52 | | dBm |
| Operating Voltage | VDC | 26 | 28 | 30 | V |
| Current Consumption @ Pout= 47~48dBm | IDD | | 4.9 | 6 | Amp |
| Current Consumption @ Shutdown | ISD | | 0.1 | 0.2 | Amp |
| Quiescent Current | IDQ | | 2 | | Amp |
| Switching Time @ 1kHz TTL, PIN = -2dBm | TON/TOFF | | 1 | 2 | μs |

MECHANICAL SPECIFICATIONS

Cooling External Heat Sink Needed (Not Supplied)

Length*Width*Height mm[inch] 162.56x86.36x25 [6.4 x 3.4 x 0.98]

Weight[Kg] 0.7

Datasheet: REV A.3/11.04.2020

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| | |
|---------------------|-------------|
| RF Connector Input | SMA, Female |
| RF Connector Output | SMA, Female |

ENVIRONMENTAL SPECIFICATIONS (Design to meet)

| | | | |
|------------------------------|-----|----|----|
| Module Operation Temperature | -40 | 85 | °C |
| Storage Temperature Range | -40 | 85 | °C |
| Relative-Humidity | | 95 | % |
| Altitude | N/A | | |
| Vibration/Shock | N/A | | |

Notes: Altitude /Vibration are designed with considerations, but without tests and experiments.

LIMITS

| | | |
|-------------------------------------|--|-----|
| Input RF drive level without damage | $P_{in} \leq 10$ | dBm |
| Load VSWR @ POUT =40W | ∞ @ all load phase & amplitude for duration of 1 minutes; | |
| Load VSWR @ POUT =50W | 3:1 @ all load phase & amplitude continuous | |
| Thermal Degradation | 90 | °C |

DC INTERFACE CONNECTOR – [D-sub, 9 Pin, Male]

| Pin # | Description | Specifications |
|-------|-----------------|---|
| 1 | Reserved | No Connection |
| 2 | Current Monitor | Analog voltage relative to IDD @ 50mV/100mA |
| 3 | Temp Monitor | Analog voltage relative to module temperature @ 10mV/°C |
| 4 | SPARE | No Connection |
| 5 | SHUTDOWN | Amplifier Disable: TTL Logic High (5V) |
| 6,7 | VDD | +28.0VDC |
| 8,9 | GND | Ground |

PLOTTED AND OTHER DATA

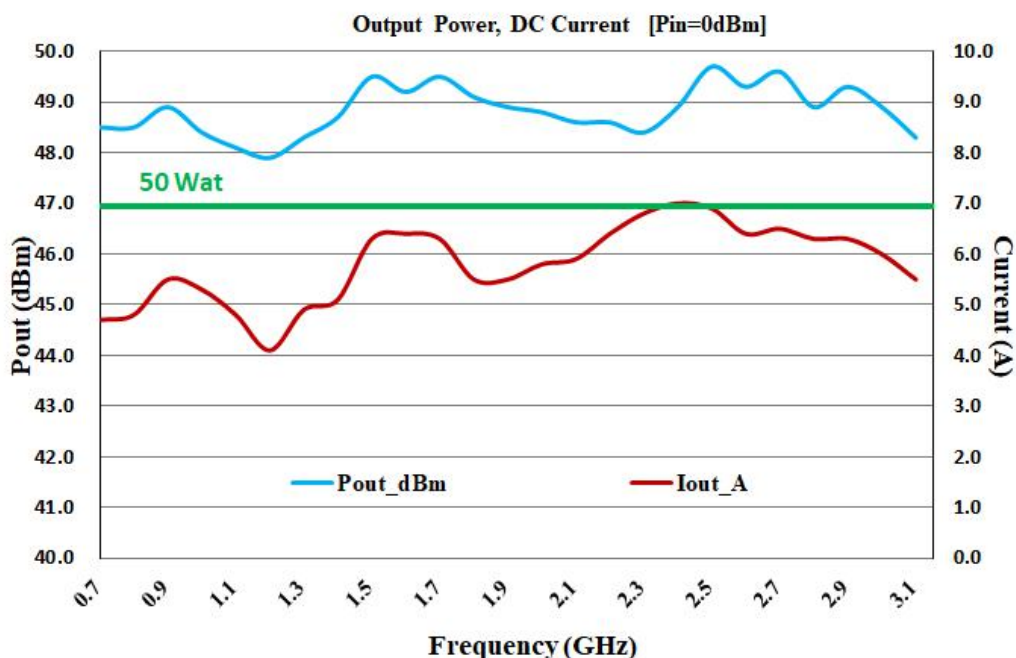
Notes:

1. Values at +25°C, sea level.
2. ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
3. Heat Sink required for Proper Operation, Unit is cooled by conduction to heat sink.

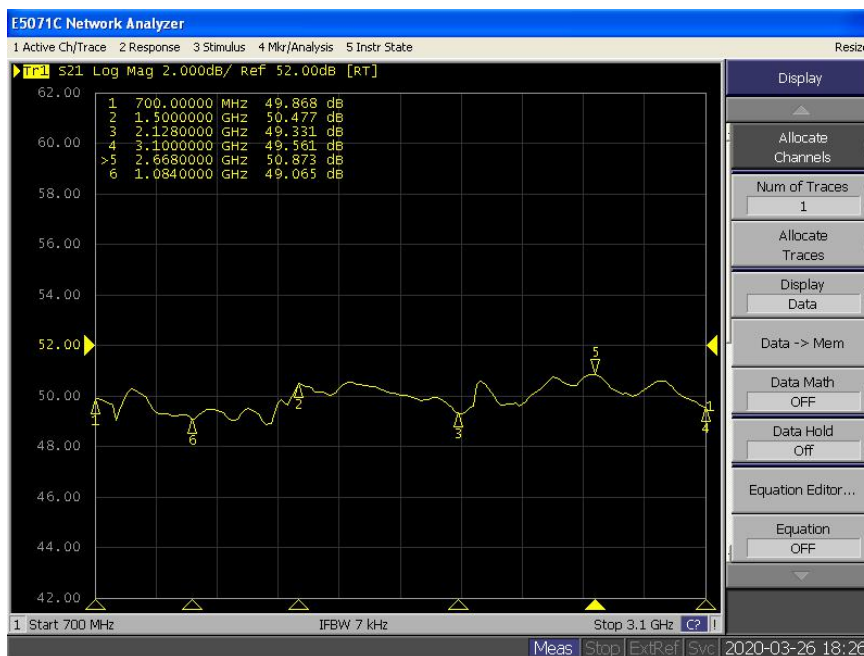
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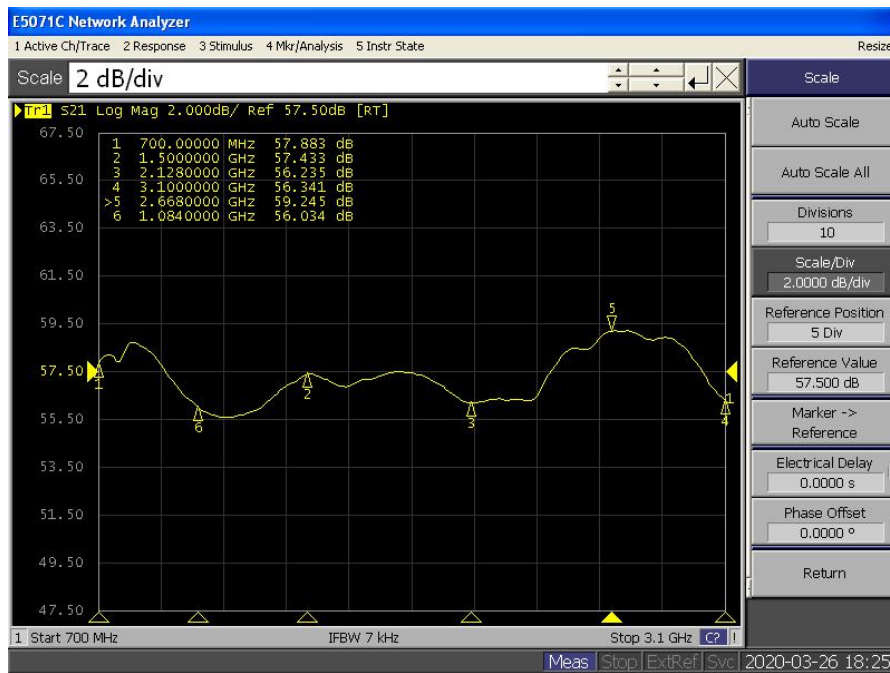
TYPICAL PERFORMANCE DATA[CW, Load VSWR≤1.2, 25°C]



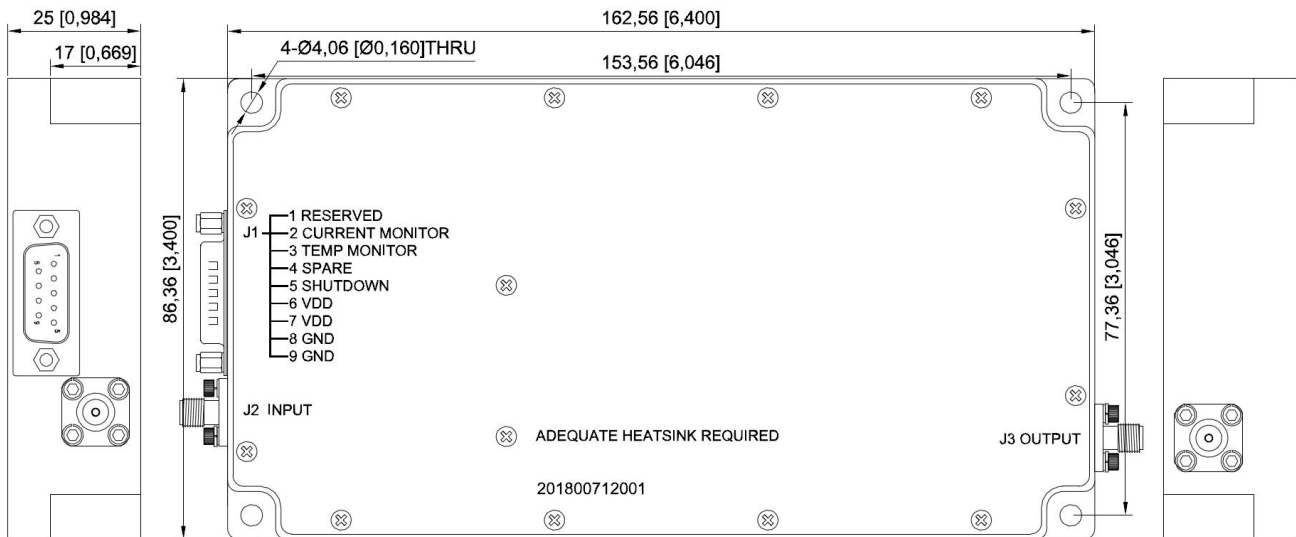
Graph1: Power Gain @ Pin=0 dBm (Ambient temp. +25±3°C, DC Voltage= 28V, Load VSWR ≤ 1.2)



Graph2: Small signal gain @Pin=-30dBm (Ambient temp. +25±3°C, DC Voltage= 28V,Load VSWR ≤ 1.2)



OUTLINE DRAWING (mm)*



*Note: The Outline and Functions can be customized, please contact our sales for further information.