

SBP-0231836047-SFNF-EP

2 to 18 GHz Power Amplifier, 60 dB Gain, +47 dBm P_{sat}

SBP-0231836047-SFNF-EP is a power amplifier with a typical small gain of 60 dB and a nominal P_{sat} of +47 dBm across the frequency range of 2 to 18 GHz in a hermetically sealed package. The amplifier features a temperature and current detector for additional reference data, and safety functions such as auto-temperature shutoff, input RF protection, reverse polarity protection, and over-voltage. The power supply for the amplifier is +28 V_{DC}. The RF input is a SMA female connector and the output is a N female connector. Other port configurations, such as SMA male connectors and N male for either the input or output port, are also available under different model numbers.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	2 GHz		18 GHz
Small Signal Gain		60 dB	
Power Gain @ P _{sat}		53 dB	
P _{sat} , CW		+47 dBm	
P _{in} (Input Port with RF Limiter)			+30 dBm
Attenuation Range		31.5 dB	
Attenuation Step Size		0.5 dB	
Input Return Loss		12 dB	
Output Return Loss		5 dB	
Harmonics Suppression @ P _{sat}	11 dBc	15 dBc	
Spurious @ P _{sat}		65 dBc	
DC Supply Voltage (VDD)	+26 V _{DC}	+28 V _{DC}	+30 V _{DC}
DC Supply Current		19 A	
Supply Voltage to Heatsink		+12 V _{DC} /2.5 A	
Temperature Sensor		0.01V/°C	
DC Supply Current Sensor		0.1V/A	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

ECCN

3A001.b.4

FEATURES

- Class AB GaN Technique
- High Gain
- 50 W Output Power
- 6 bits Digital Attenuator 31.5 dB
- Built-in Temperature Sensor
- Built-in DC Current Sensor
- CW & Pulse Compatible
- Over Temperature Protection
- Over Voltage Protection
- DC Polarity Protection
- Built-in RF Limiter
- Hermetically Sealed Package

APPLICATIONS

- Radar Systems
- Communication Systems
- Test Equipment

SUPPLEMENTAL DETAILS



Mechanical Specifications:

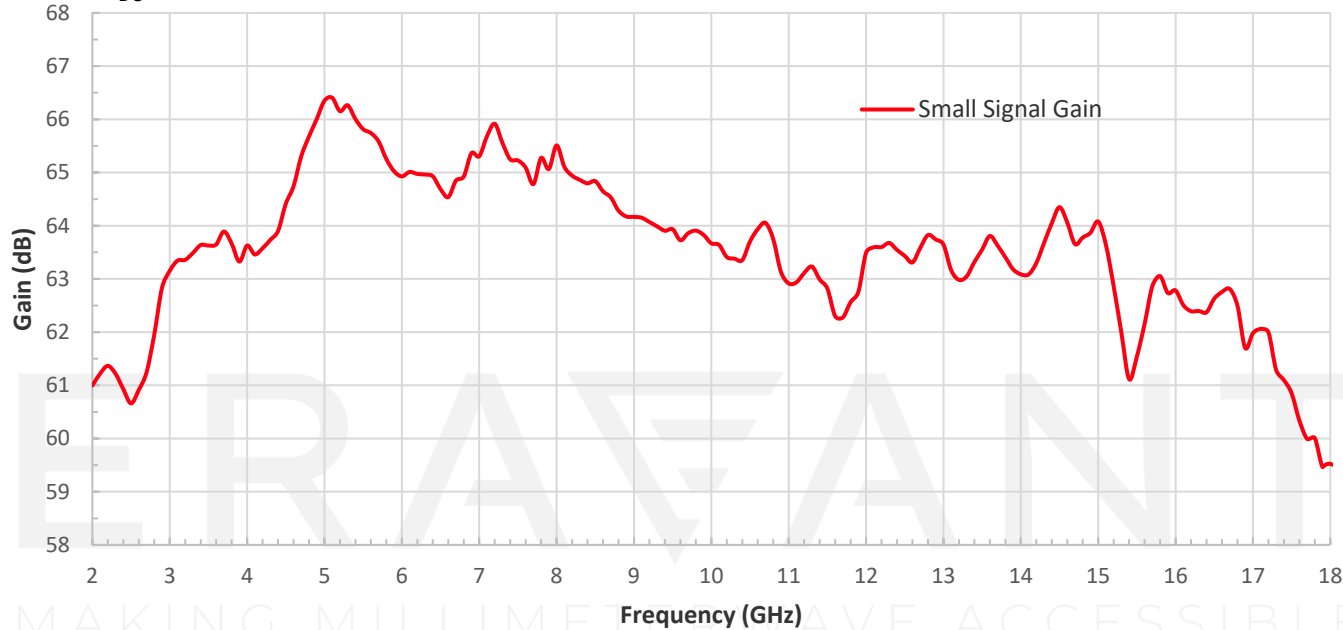
Item	Specification
Input Port	SMA Female
Output Port	N Female
Power Supply & Control	D-SUB17W2
Fan Connector	DC-099 Socket 12V@2.5A, 5.5x2.1/2.5mm
Case Material	Aluminum, Chem Film
Heatsink	Aluminum, Black Anodized
Weight	10.4 lbs. (4.7 kg)
Size	9.45" (L) x 4.92" (W) x 3.90" (H)
Outline	BP-HC-H7

Control and Monitors:

Item	Specification
Power Enable	Turns on/off power supply to the amplifier; TTL High" enables the amplifier, and "TTL Low" disables
Temperature Detector (0.01V/°C)	Provides temperature reading
DC Current Detector (0.1V/A)	Provides DC current reading
Overtemperature Protection	Auto shutdown if internal temperature exceeds maximum limit (85 °C)
Input Overdrive	Built-in RF Limiter at Input Port (30 dBm Max)
Over-Voltage	Auto shutdown if DC Supply Voltage exceeds maximum limit (+29.6 V)
DC Polarity Protection	Auto shutdown in case of reverse power connection
Built-in 6-bit digital attenuator	Adjust output attenuation by turning pins 9 to 14 "high"

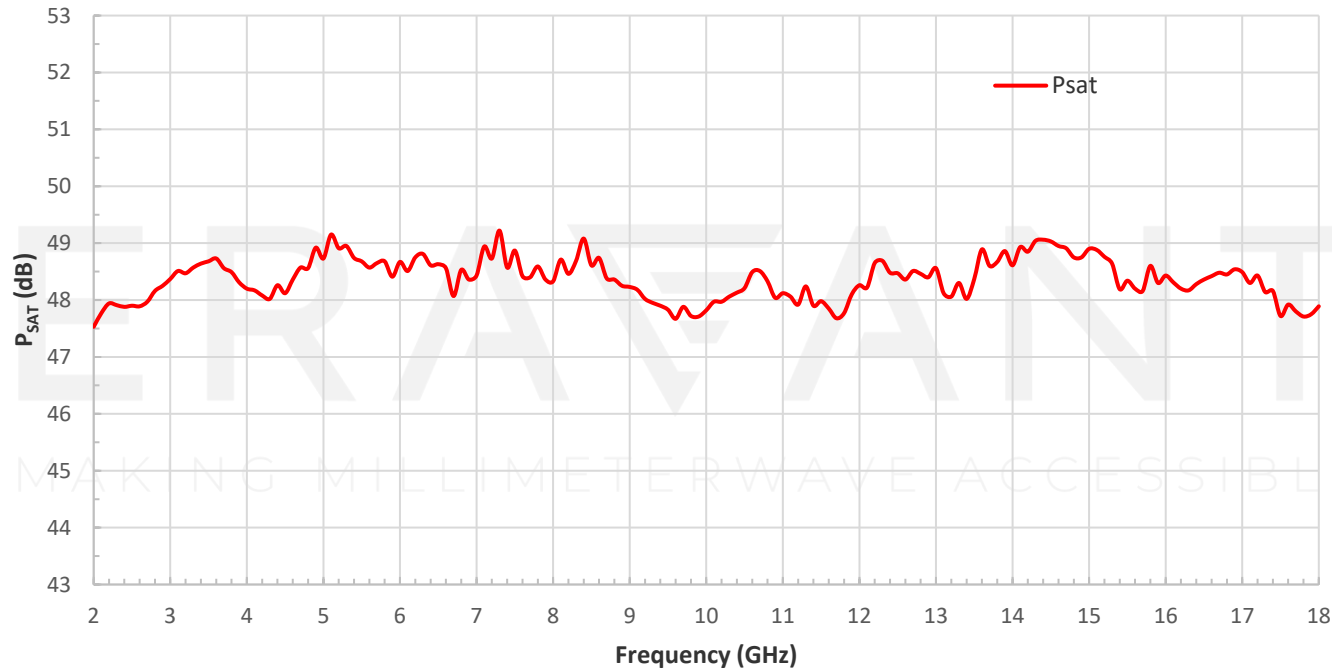
Typical Gain vs. Frequency

Bias: +28 V_{DC}/6800 mA



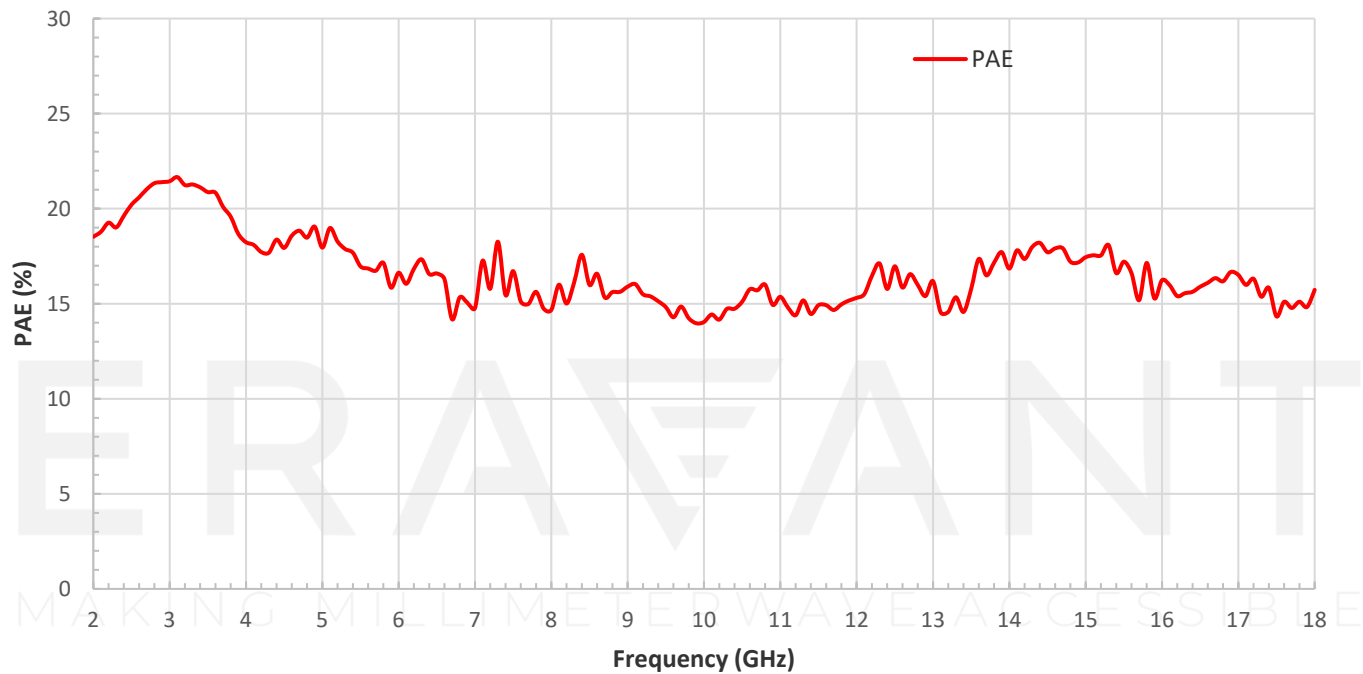
Typical P_{SAT} vs. Frequency

Bias +28 V_{DC}/19 A



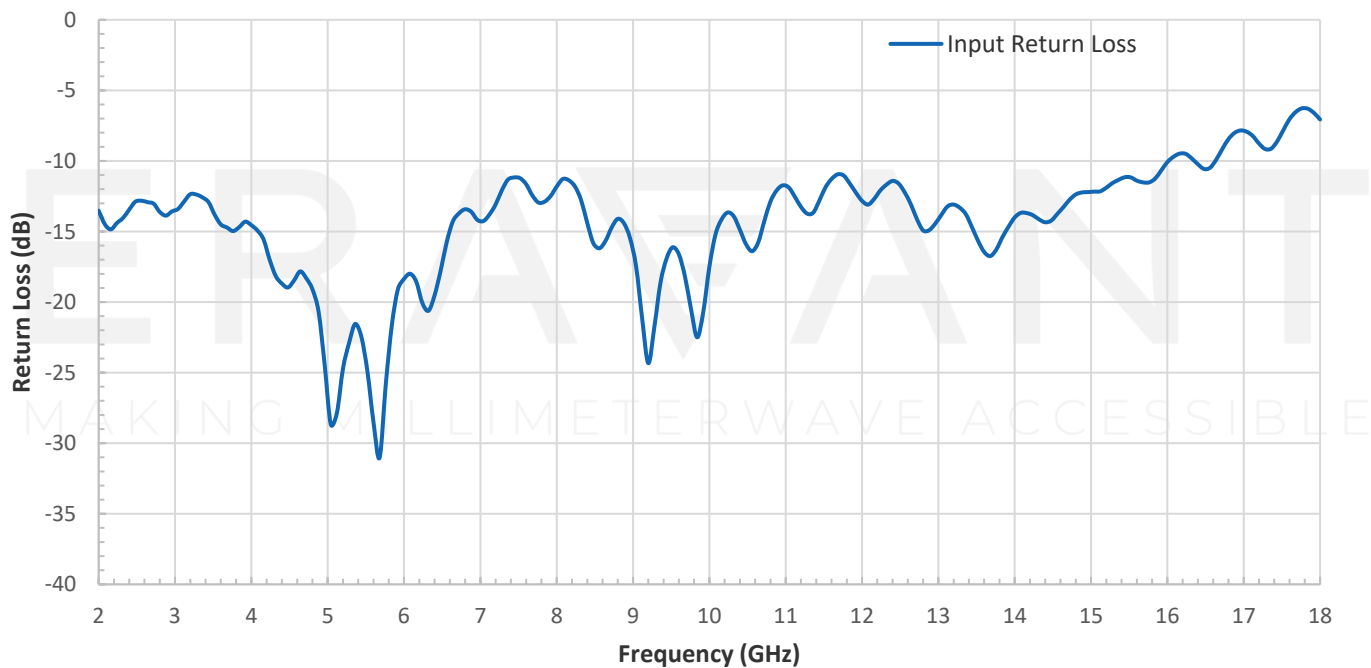
Typical PAE vs. Frequency

Bias +28 V_{DC}/19 A

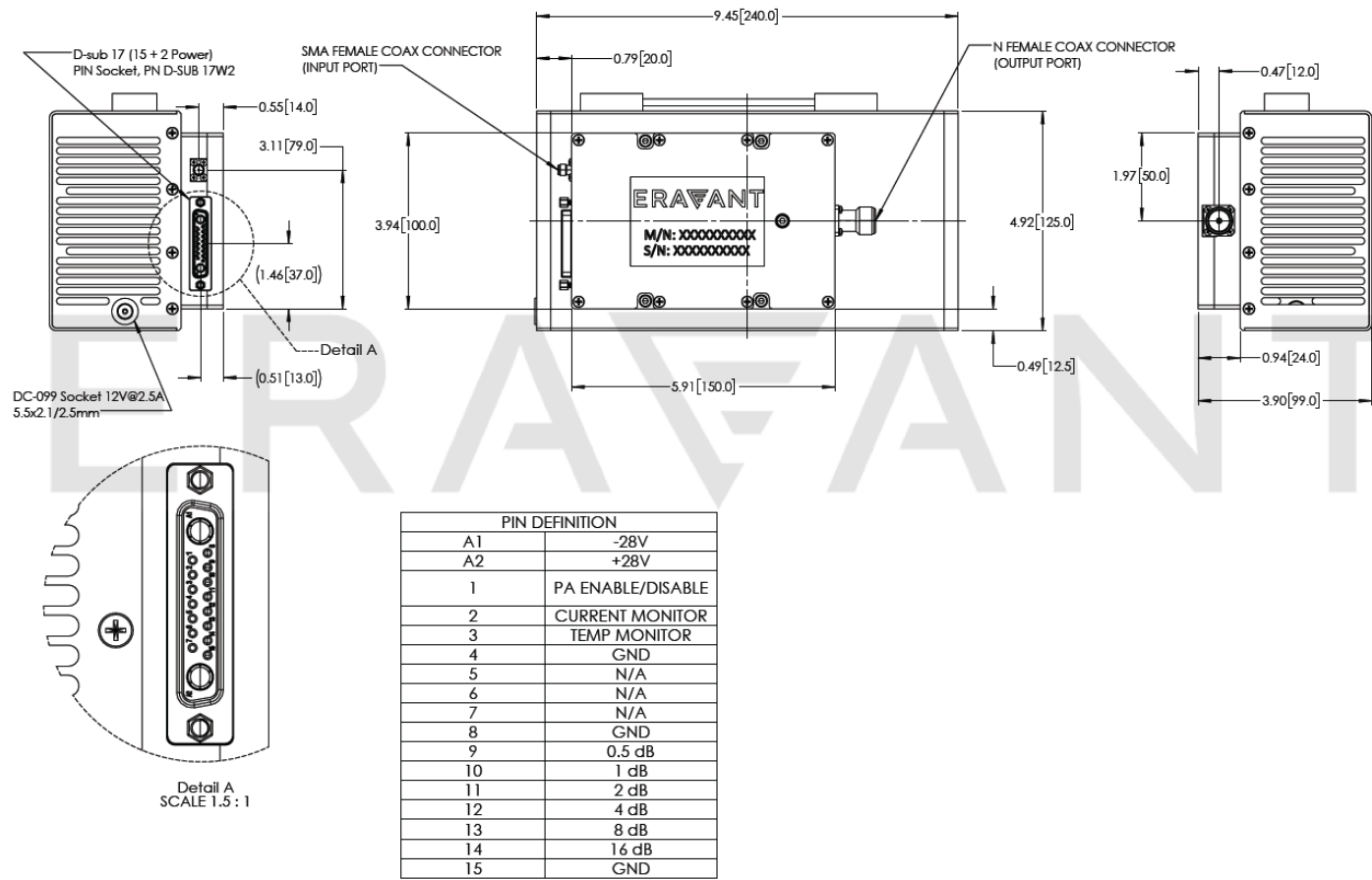


Typical Return Loss vs. Frequency

Bias: +28 V_{DC}/6800 mA



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



NOTE:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- Other mechanical configurations are available under different model numbers.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum ratings shown will damage the device.
- Do not block the air inlets and outlets.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Do not plug or unplug any connectors when amplifier is activated. All connectors must be connected/disconnected when amplifier is off.
- The case temperature of the device shall never exceed +50 °C. Use proper heatsink or fan if necessary
- Proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model SCH-08008-S1 is highly recommended.