STB-7531141833-1010-S1-C

75 to 110 GHz, Compact Power Amplifier, 18 dB Gain, +33 dBm P_{sat}

STB-7531141833-1010-S1-C is a W-Band, compact benchtop power amplifier with a typical small signal gain of 18 dB and a nominal P_{sat} of +33 dBm across the frequency range of 75 to 110 GHz. An AC to DC power adapter is provided so that the power supply required is a single phase AC voltage in the range of 100 to 240 V_{AC}, which can be supplied by a wall outlet or lab benches. The fan helps to keep the amplifier working at around room temperature. An integrated USB-C flash drive is included in the package. The input and output ports are WR-10 waveguides with standard UG-387/U-M anti-cocking flanges. Model STB-7531142326-1010-S1-C may be used as a driver bench top amplifier.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	75 GHz		110 GHz
Small Signal Gain		18 dB	
Power Gain		8 dB	
P_{1dB}		+25 dBm	
P_{Sat}		+33 dBm	
P_{in}			+30 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
Power Supply (AC Adapter Provided)	100 V_{AC}		240 V_{AC}
Power Amplifier DC Supply Voltage		+18 V_{DC}	
Power Amplifier DC Supply Current		2.2 A	
Fan DC Voltage		+12 V_{DC}	
Specification Temperature		+25°C	
Operating Temperature	0°C		+70°C

Mechanical Specifications:

Item	Specification
Input/ Output Ports	WR-10 Rectangular Waveguide with UG-387/U-M Anti-Cocking Flange
Bias Connector	2.5 mm DC Jack (AC-to-DC power converter included)
Enclosure Material	Aluminum
Fan Connector	Molex 5051-03
USB Connector	USB-C
Finish	Various
Weight	30 oz
Size	3.15” (L) X 3.15” (W) X 4.73” (H)
Outline	TB-SW-A-C-2

ECCN

3A001.b.4

FEATURES

- Forced Air Cooling
- In-line Port Configuration
- High Output Power
- USB Data Storage

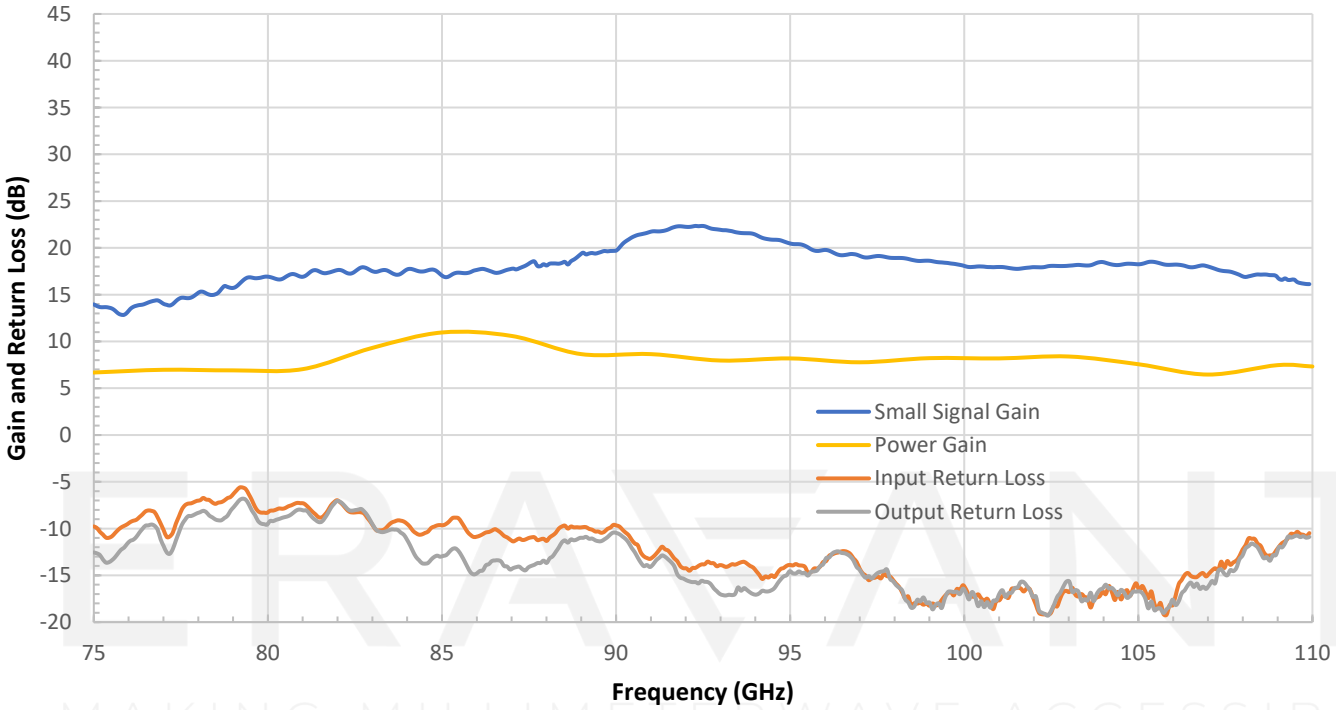
APPLICATIONS

- Communications Systems
- Test Equipment
- Bench Top Power Amplification

SUPPLEMENTAL DETAILS

Typical Measured Gain and Return Loss vs. Frequency

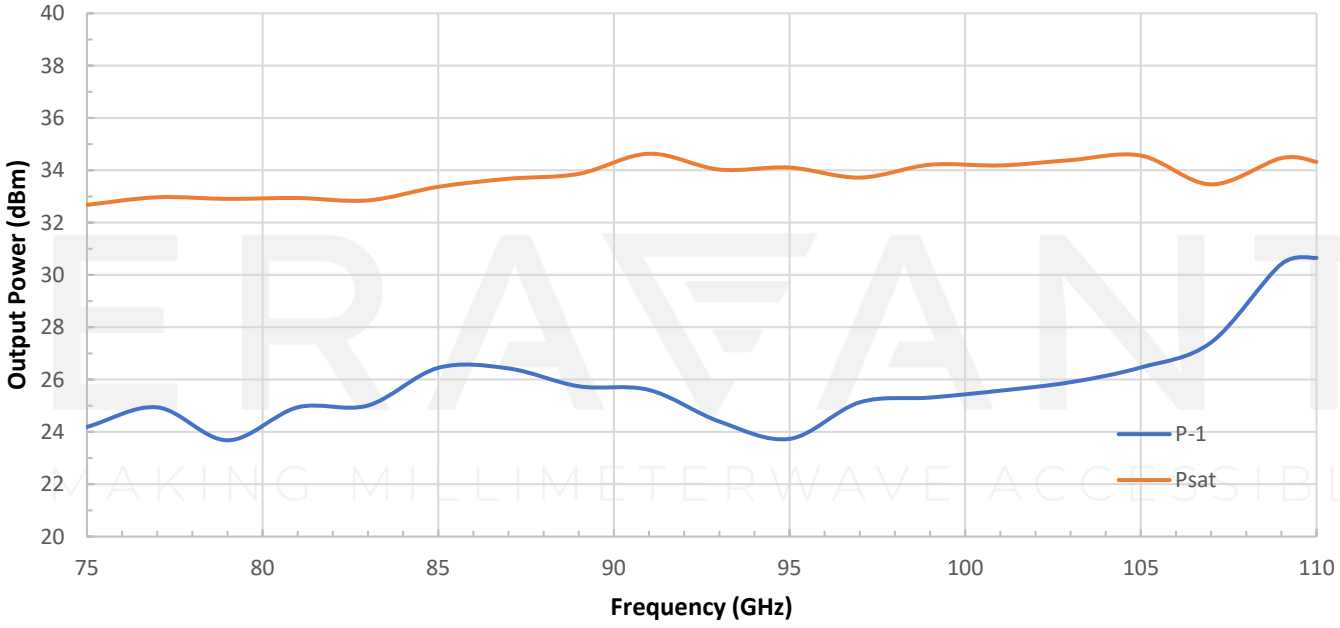
Bias: +18 V_{DC}/1200 mA



Typical Measured Output Power vs. Frequency

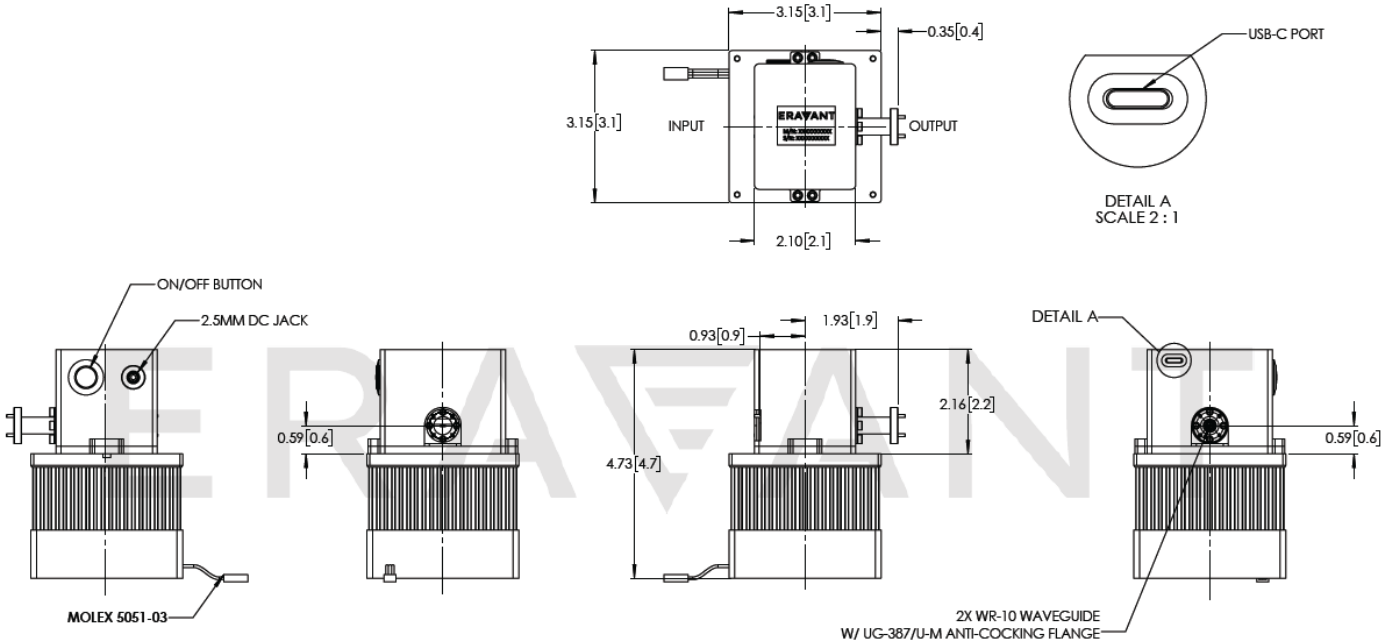
Bias: +18 V_{DC}/1200 mA

RFSat: 2200 mA



Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters])



FAN POWER DESIGNATIONS	
RED	+12Vdc
BLACK	GND
YELLOW	N/A or TACH

NOTE:

- The product presented in this datasheet is at a preliminary design stage. Final electrical and mechanical specifications may differ than what is presented.
- The datasheet product photo used is not representative of the final product.
- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- Other mechanical configurations with other frequency bands 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.
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed +70°C.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.