# BROADBAND LOW NOISE AMPLIFIER
# ABL1800-01-3325

## Features:

- Broad band, low noise, high gain
- Low VSWR, unconditional stable
- SMA female connector RF I/O
- Single DC power supply required
- Operating temperature -40~+85°C, storage temperature -55~+85°C

## General Description

ABL1800-01-3325 is a two stage GaAs pHEMT MMIC based broadband low noise amplifier module operating in the frequency from 100MHz to 18.0GHz. The amplifier provides 33dB of small signal gain with 2.5dB noise figureat 10GHz. The amplifier offers excellent gain flatness, as well as good VSWR at both input and output. It requires only a single positive DC power supply. Its built-in DC voltage regulator allows the amplifier to functional at different DC supply voltages without affecting the RF performances.

## Electrical Specifications

| Parameters | Units | Specifications | | |
|---|---|---|---|---|
| | | Minimum | Typical | Maximum |
| Frequency Range | GHz | 0.1 | | 18.0 |
| Nominal Gain @25°C base plate temperature | dB | 30.0 | 33.0 | 36.0 |
| Noise Figure @25°C base plate temperature<br>0.1~2.0GHz<br>2.0~3.0GHz<br>3.0~15.0GHz<br>15.0~18.0GHz | dB | | <br>4.0<br>3.0<br>2.5<br>3.0 | <br>5.0<br>4.0<br>3.5<br>4.0 |
| P-1dB Power at Output<br>0.1~10.0 GHz<br>10.0~18.0 GHz | dBm | <br>+22.0<br>+19.0 | <br>+25.0<br>+22.0 | |
| Output Saturated Power<br>0.1~10.0 GHz<br>10.0~18.0 GHz | dBm | <br>+23.0<br>+20.0 | <br>+27.0<br>+24.0 | |
| Output IP3<br>0.1~10.0 GHz<br>10.0~18.0 GHz | dB m | <br>+28.0<br>+23.0 | <br>+32.0<br>+26.0 | |
| Gain flatness | dB | | +/-1.5 | +/-2.0 |
| Gain Variation over Temp. | dB | | +/-2.0 | |
| Reverse Isolation | dB | 50.0 | | |
| Input VSWR | - | | 1.5:1 | 2.0:1 |
| Output VSWR | - | | 1.8:1 | 2.5:1 |
| Spurious | dBc | | | -70.0 |
| Operating Temperature | °C | -40.0 | | +85.0 |
| Survival Temperature | °C | -45.0 | | +125.0 |
| DC Power Supply Voltage | V | +10.0 | +12.0 | +15.0 |

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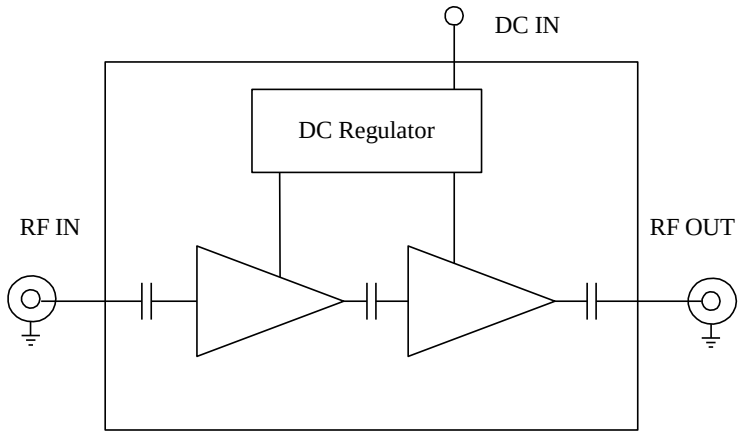
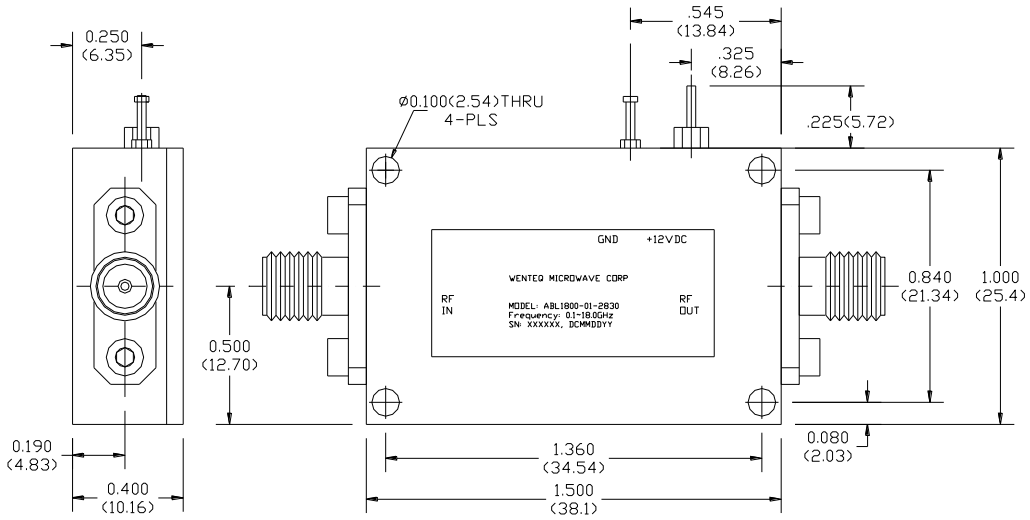
| | | | | |
|---|---|---|---|---|
| DC Power Supply Current | mA | 200.0 | 260.0 | 300.0 |
| RF In/Out connectors | | 50 ohm SMA female | | |
| DC Input Connector | | Feedthru Pin | | |
| Outline dimension for ABL1800-01-3325 without heatsink | inches | 1.50×1.00×0.40 | | |
| Outline dimension for ABL1800-01-3325-X with heatsink | inches | 1.50×1.617×1.09 | | |

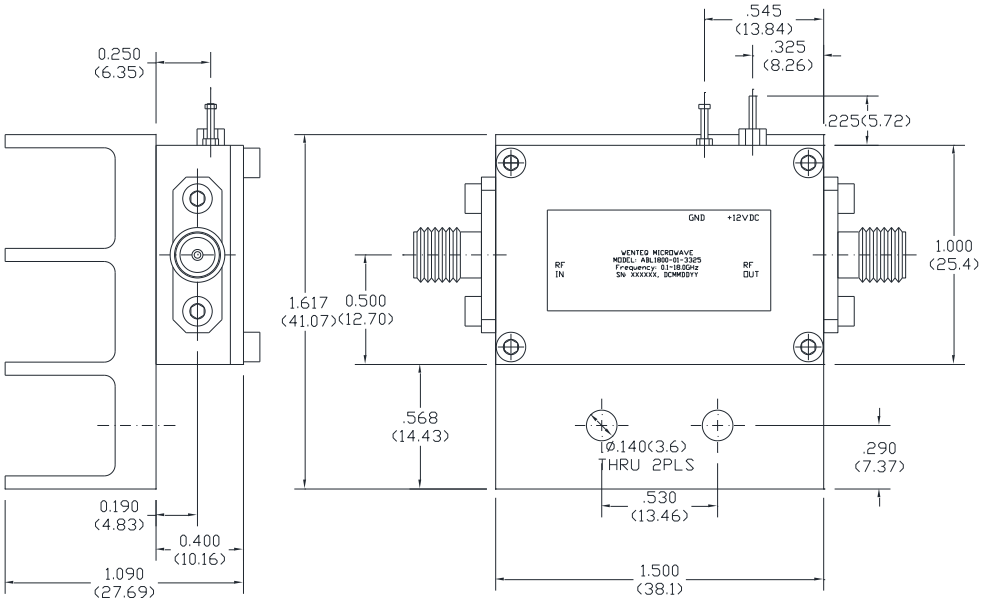
## Functional Diagram




## Mechanical Structure:




(a) ABL1800-01-3325 without heatsink




(b) ABL1800-01-3325 with heatsink

Note: All units are in inches(mm), and all tolerances are +/-0.005 inch unless otherwise specified

## Housing Material and Surface Finish:

Body and cover material: aluminum
Surface finish: nickel plated
Connector material: Stainless Steel
Connector surface finish: Passivated
Heatsink material: Aluminum, surface finish: Black anodized

## Absolute Maximum Ratings

| | |
|---|---|
| DC Voltage | +18V |
| RF Input Power | +10 dBm |
| Storage Temperature | -55~+125°C |
| Operating Temperature | -40~+85°C |

**WARNING:** This device is electrostatic sensitive, please observe precautions for safe handling this amplifier.

**WARNING:** This product can expose you to chemicals including Nickel (Metallic) and Gallium Arsenide which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to **www.P65warnings.ca.gov**.