

50kHz-22GHz Optical Modulator Driver

2021-9-1



Product Overview

AT-BBLF-0022-2720C is broadband amplifier from 50kHz-22GHz, with $P_{out}=+23dBm$, $NF=3dB$. It can be used both as Power amplifier or low noise amplifier. The DC power requirement is +12V/300mA. The module is with 2.92mm Female

The broadband amplifier has high gain, high linearity, low input/output return loss and flat gain response. It can be used as drive for optical modulator application.

More information, please visit www.atmicrowave.com

Advantages

- ✓ Frequency: 50kHz-22GHz
- ✓ $P_{sat}:+23dBm$
- ✓ $V_{out}=8.9V_{pp}$
- ✓ Small signal gain: 33dB
- ✓ Single Power Supply

Application

- ✓ Optical Modulator Driver
- ✓ 5G Communication
- ✓ Test Equipment
- ✓ ROF (RF Over Fiber)
- ✓ Radar Communication

Mechanical Information

| Item | Description |
|---------------------------|---------------|
| Input Port | 2.92mm Female |
| Output Port | 2.92mm Male |
| Case Material | Copper |
| Finish | Gold Plated |
| Package Sealing | Epoxy Sealed |
| Weight (Without Heatsink) | 95g |
| Size: | 59X30X9.5 mm |





AT-BBLF-0022-3323HC

50kHz-22GHz Broadband Amplifier

Key Features

| Parameter | Min | Typical | Max |
|-----------------------------|------|---------|------|
| Lower Frequency (3dB Point) | | 50kHz | |
| Upper Frequency (3dB Point) | | 22GHz | |
| Small Signal Gain | 30dB | 33dB | |
| P1dB | | +22dBm | |
| Psat | | +23dBm | |
| Output Voltage | | 8.9Vpp | |
| Drain Supply | +8V | +12V | +15V |
| Current NO RF | | 250 mA | |
| IDD at Psat | | 300 mA | |
| NF | | 3dB | |
| Input Return Loss | | -10dB | |
| Output Return Loss | | -10dB | |
| Spec Temp | | 25C | |

Absolute Maximum Ratings Table

| Parameter | Value |
|-----------------------|--------------|
| Drain Supply | +15V |
| RF Input Power | +15 dBm |
| Input Voltage | 3.56Vpp |
| Operating Temperature | -40 to +85C |
| Storage Temperature | -65 to +125C |

Caution:

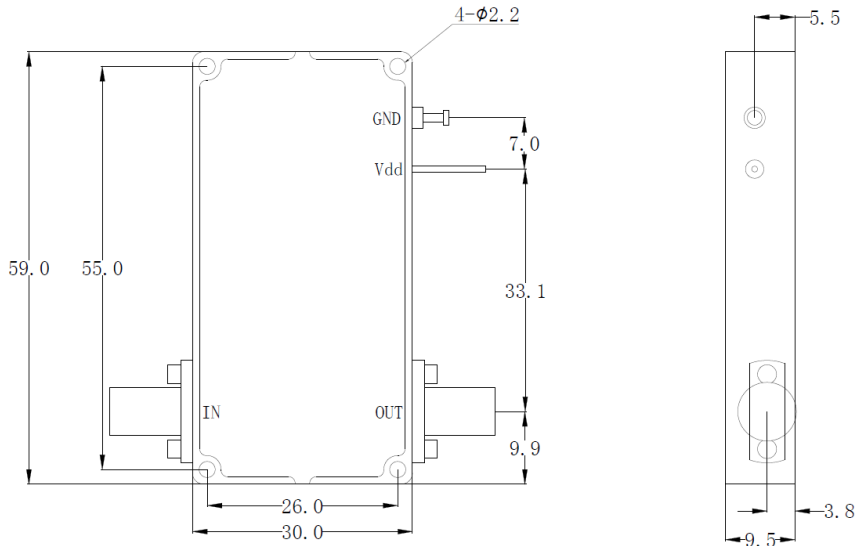
Please pay attention to the case temperature. If case temperature exceeds higher than +50C, heat sink and fan are required, or the amplifier may be damaged.

Notes:

1. Datasheet may be changed according to update of MMIC, Raw materials , process, and so on.
2. This data is only for reference, not for guaranteed specifications.
3. Please contact AT Microwave team to make sure you have the most current data.

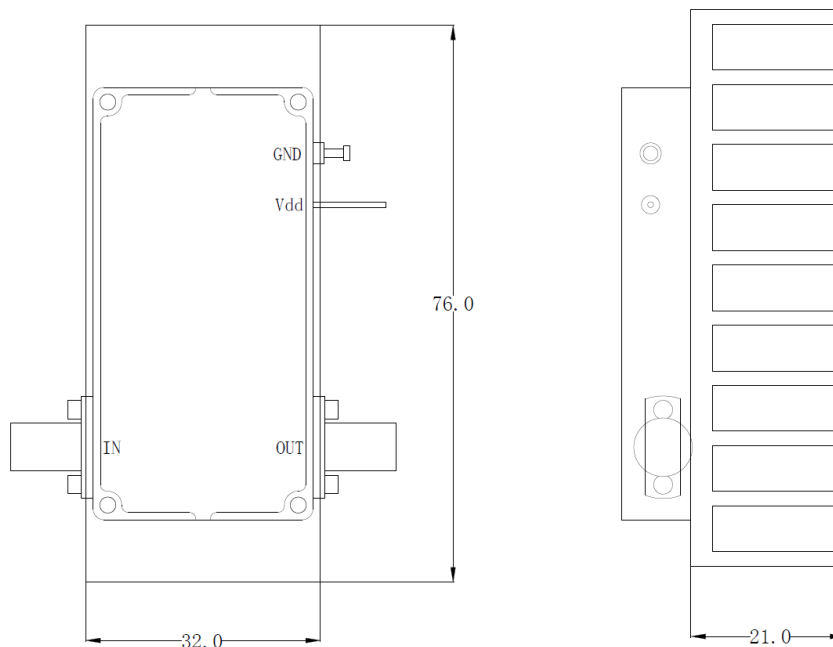


Dimension: (unit in mm)



| | <26.5GHz | <40GHz | <50GHz | <67GHz |
|------------|----------|--------|--------|--------|
| Connector | SMA | 2.92mm | 2.4mm | 1.85mm |
| Lenth of a | 9.4mm | 9.5mm | 10.8mm | 11.3mm |

Note: Female Default. Contact with us for other types.



Including a small heatsink without Fan if output Power higher than +20dBm.
Customers can remove it or use their own heatsink according to actual situation.

Heatsink required during Operation





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50kHz-22GHz Broadband Amplifier

Vpp vs dBm at 50 Ohms System

| dBm | Vpp | Vrms | Power (W) | dBm | Vpp | Vrms | Power (W) |
|-----|--------|-------|-------------|-----|----------|----------|-------------|
| 50 | 200.00 | 70.71 | 100.00 | 14 | 3.17 | 1.12 | 2.51E-02 |
| 49 | 178.25 | 63.02 | 79.22 | 13 | 2.83 | 1.00 | 2.00E-02 |
| 48 | 158.87 | 56.17 | 63.10 | 12 | 2.52 | 0.89 | 1.58E-02 |
| 47 | 141.59 | 50.06 | 50.12 | 11 | 2.24 | 0.79 | 1.26E-02 |
| 46 | 126.19 | 44.62 | 39.81 | 10 | 2.00 | 0.71 | 1.00E-02 |
| 45 | 112.47 | 39.76 | 31.62 | 9 | 1.78 | 0.63 | 7.94E-03 |
| 44 | 100.24 | 35.44 | 25.12 | 8 | 1.59 | 0.56 | 6.31E-03 |
| 22 | 89.34 | 31.59 | 19.95 | 7 | 1.42 | 0.50 | 5.01E-03 |
| 42 | 79.62 | 28.15 | 15.85 | 6 | 1.26 | 0.45 | 3.98E-03 |
| 41 | 70.96 | 25.09 | 12.59 | 5 | 1.12 | 0.40 | 3.16E-03 |
| 40 | 63.25 | 22.36 | 10.00 | 4 | 1.00 | 0.35 | 2.51E-03 |
| 39 | 56.37 | 19.93 | 7.94 | 3 | 0.89 | 0.32 | 2.00E-03 |
| 38 | 50.24 | 17.76 | 6.31 | 2 | 0.80 | 0.28 | 1.58E-03 |
| 37 | 44.77 | 15.83 | 5.01 | 1 | 0.71 | 0.25 | 1.26E-03 |
| 36 | 39.91 | 14.11 | 3.98 | 0 | 0.63 | 0.22 | 1.00E-03 |
| 35 | 35.57 | 12.57 | 3.16 | -1 | 0.56 | 0.20 | 7.94E-04 |
| 34 | 31.70 | 11.21 | 2.51 | -2 | 0.50 | 0.18 | 6.31E-04 |
| 33 | 28.25 | 9.99 | 2.00 | -3 | 0.45 | 0.16 | 5.01E-04 |
| 32 | 25.18 | 8.90 | 1.58 | -4 | 0.40 | 0.14 | 3.98E-04 |
| 31 | 22.44 | 7.93 | 1.26 | -5 | 0.36 | 0.13 | 3.16E-04 |
| 30 | 20.00 | 7.07 | 1.00 | -6 | 0.32 | 0.11 | 2.51E-04 |
| 29 | 17.83 | 6.30 | 0.79 | -7 | 0.28 | 9.99E-02 | 2.00E-04 |
| 28 | 15.89 | 5.62 | 0.63 | -8 | 0.25 | 8.90E-02 | 1.58E-04 |
| 27 | 14.16 | 5.01 | 0.50 | -9 | 0.22 | 7.93E-02 | 1.26E-04 |
| 26 | 12.62 | 4.46 | 0.40 | -10 | 0.20 | 7.07E-02 | 1.00E-04 |
| 25 | 11.25 | 3.98 | 0.32 | -11 | 0.18 | 6.30E-02 | 7.94E-05 |
| 24 | 10.02 | 3.54 | 0.25 | -12 | 0.16 | 5.62E-02 | 6.31E-05 |
| 23 | 8.93 | 3.16 | 0.20 | -13 | 0.14 | 5.01E-02 | 5.01E-05 |
| 22 | 7.96 | 2.82 | 0.16 | -14 | 0.13 | 4.46E-02 | 3.98E-05 |
| 21 | 7.10 | 2.51 | 0.13 | -15 | 0.11 | 3.98E-02 | 3.16E-05 |
| 20 | 6.32 | 2.24 | 0.10 | -16 | 0.10 | 3.54E-02 | 2.51E-05 |
| 19 | 5.64 | 1.99 | 7.94E-02 | -17 | 8.93E-02 | 3.16E-02 | 2.00E-05 |
| 18 | 5.02 | 1.78 | 6.31E-02 | -18 | 7.96E-02 | 2.82E-02 | 1.58E-05 |
| 17 | 4.48 | 1.58 | 5.01E-02 | -19 | 7.10E-02 | 2.51E-02 | 1.26E-05 |
| 16 | 3.99 | 1.41 | 3.98E-02 | -20 | 6.32E-02 | 2.24E-02 | 1.00E-05 |
| 15 | 3.56 | 1.26 | 3.16E-02 | -21 | 5.64E-02 | 1.99E-02 | 7.94E-06 |

