sales@wdmquest.com
www.wdmquest.com

# 1506 Bias-T

BT2004

## High Power Bias Tee

The bias tee offers the ability to apply or detect a DC voltage on a high frequency signal. Using a custom-made, resonance-free conical inductor to achieve extremely broadband performance. By minimizing the overall inductor size and using proprietary packaging techniques, the BT2004 is a superior option in terms of performance, reliability and ease-of-use when compared to cumbersome user-designed bias tees employing off-the-shelf conical inductors.

### FEATURES

- Broadband: 200 kHz to 40 GHz
- Low Insertion Loss
- High Power
- Non-Resonant
- Compact Size

### USE IN

- Wideband Amplifier
- Fiber Optic Communication
- Laser Driven
- Optical Modulator Drive
- GPS Active Antenna
- Other Test Measurements

| | | |
|---|---|---|
| Insertion Loss | 300 kHz to 40 GHz | 1.5 dB typ.; 2.5 dB max. |
| | 200 kHz to 300 kHz | 2 dB typ. |
| DC Port Isolation | 200 kHz to 1 GHz | 50 dB typ. |
| | 1 GHz to 40 GHz | 30 dB typ. |
| Return Loss | 200 kHz to 40 GHz | 12 dB typ. |
| RF Power | 200 kHz to 40 GHz | 10 W max. |
| DC Current | | 1 A max. |
| DC Voltage | | 50 v max. |
| DC Resistance | | 1 Ω typ. |
| Inductance | | 330 uH typ. |
| Capacitance | | 100 nF typ. |
| Weight | | 23.5 g |
| Rise Time/Fall Time | | 10 ps typ. |

**Order notes to our customers:** **The default parameters are as follows. For special needs, please contact sales.**

**1) Connector FC/APC, 900 um, 1 m by default for all devices except for high power devices.**

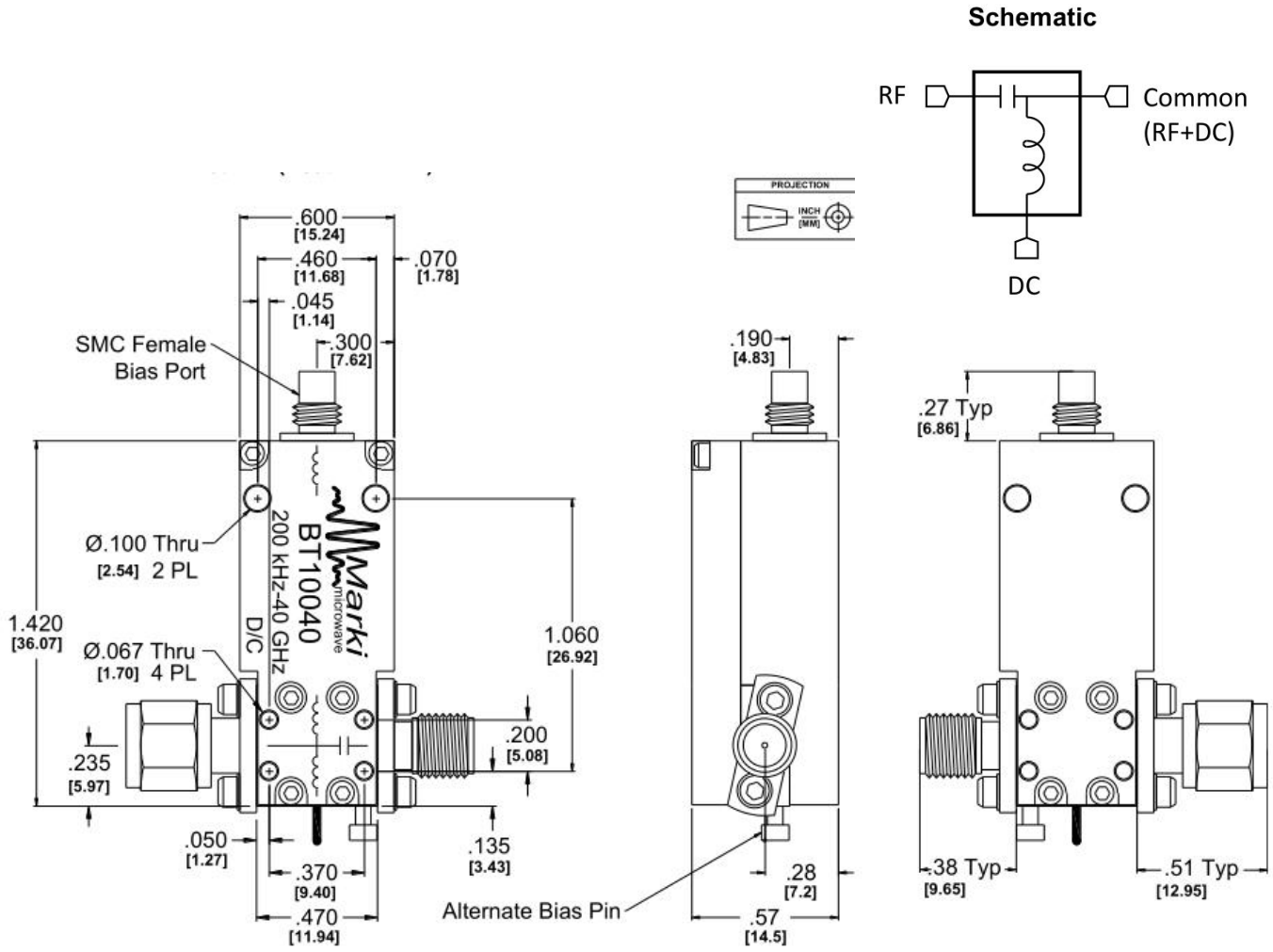
**2) Slow axis working, fast axis blocked, connector key is aligned to slow axis by default for PM devices.**

sales@wdmquest.com
www.wdmquest.com

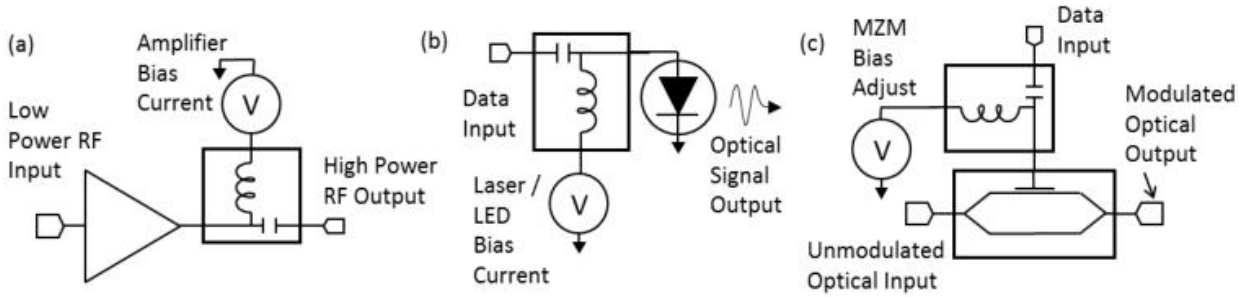
# 1506 Bias-T

## BT2004

MECHANICAL DRAWING




**Application Examples**




**Order notes to our customers:** The default parameters are as follows. For special needs, please contact sales.

1) Connector FC/APC, 900 um, 1 m by default for all devices except for high power devices.

2) Slow axis working, fast axis blocked, connector key is aligned to slow axis by default for PM devices.

# 1506 Bias-T

## BT2004

### TYPICAL PERFORMANCE

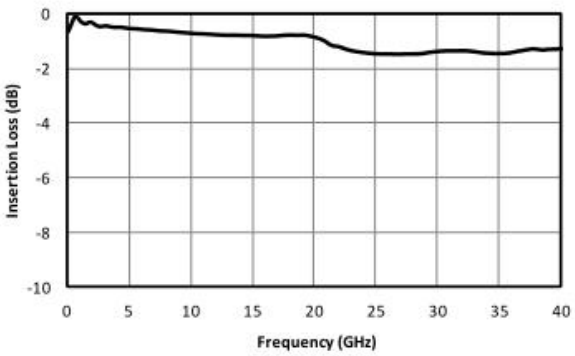



Fig. 2. RF insertion loss.

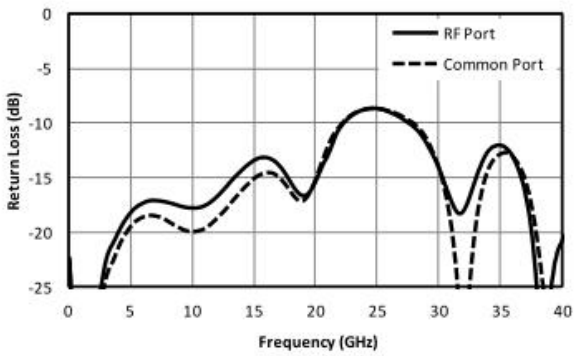



Fig. 3. Return loss.

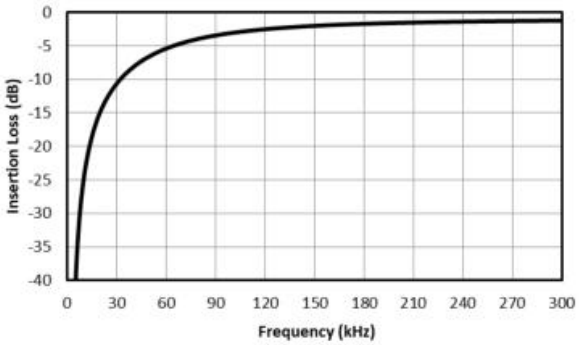



Fig. 4. Low frequency RF response.

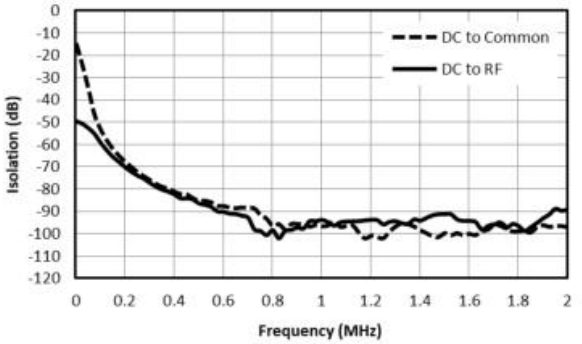



Fig. 5. Low frequency isolation.

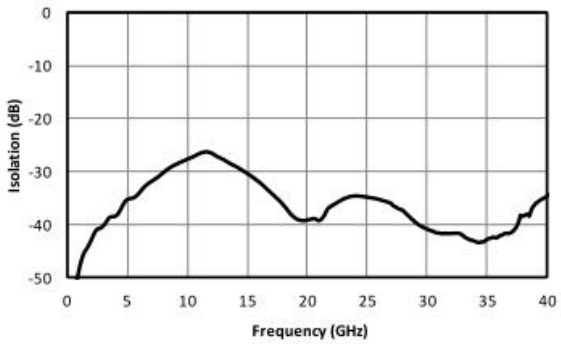



Fig. 6. DC-RF isolation.

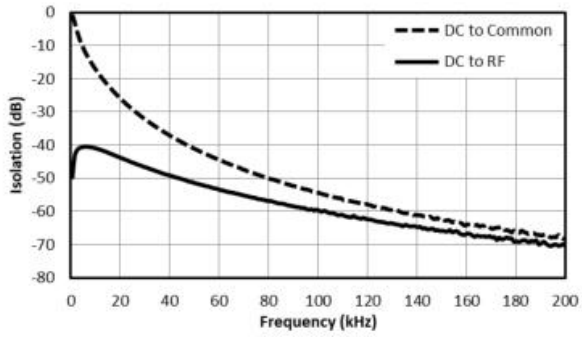



Fig. 7. Near DC isolation

**Order notes to our customers:** **The default parameters are as follows. For special needs, please contact sales.**

**1) Connector FC/APC, 900 um, 1 m by default for all devices except for high power devices.**

**2) Slow axis working, fast axis blocked, connector key is aligned to slow axis by default for PM devices.**

# 1506 Bias-T

BT2004

## TYPICAL PERFORMANCE

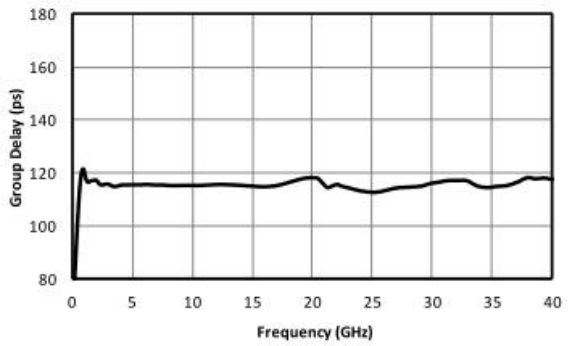



Fig. 8. Group delay.

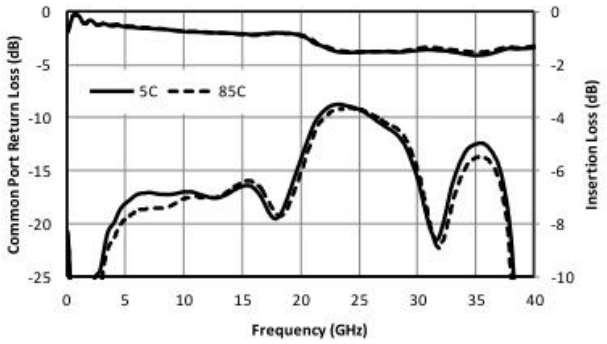



Fig. 9. Performance over temperature

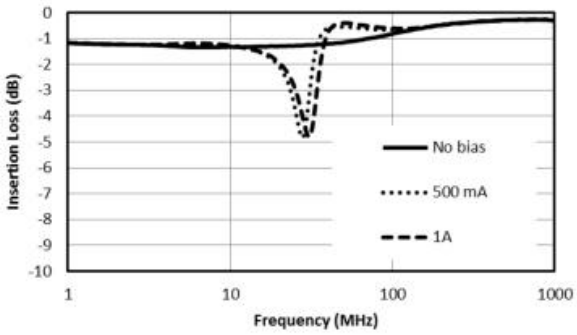



Fig. 10. Insertion Loss vs Bias Current.

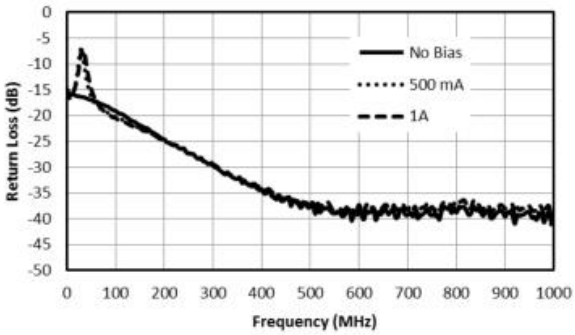



Fig. 11. Common Return Loss vs Bias Current.

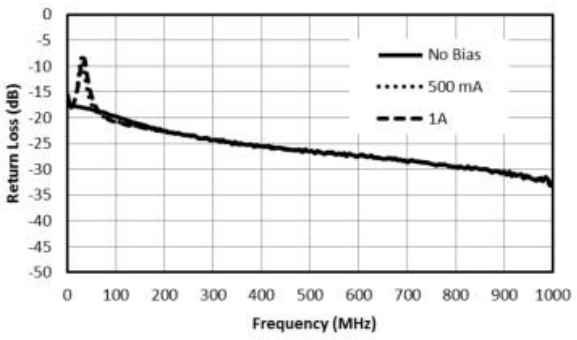



Fig. 12. RF Return Loss vs Bias Current.

**Order notes to our customers:** The default parameters are as follows. For special needs, please contact sales.

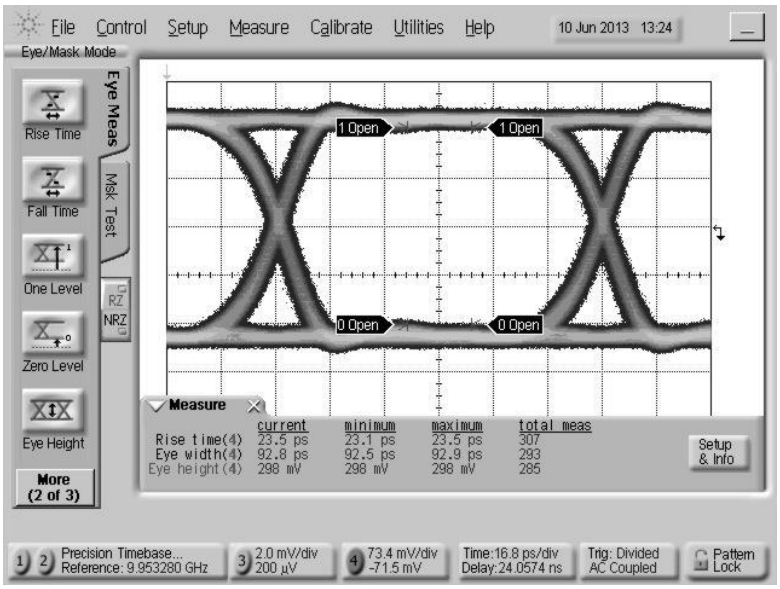
1) Connector FC/APC, 900 um, 1 m by default for all devices except for high power devices.

2) Slow axis working, fast axis blocked, connector key is aligned to slow axis by default for PM devices.

# 1506 Bias-T

## BT2004

TYPICAL PERFORMANCE



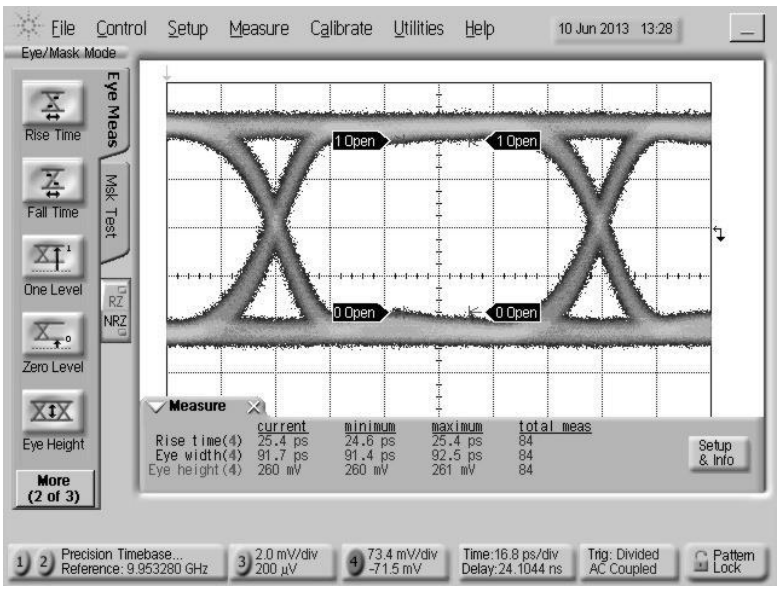




Fig. 13. Oscilloscope measurements of the BT1-0040 with a 10Gb/s PRBS pattern. Eye diagrams are taken with a $2^{31}$-1 PRBS input demonstrating minimal eye distortion/closure afforded by the extremely low frequency operation of the bias tee.

**Order notes to our customers:** **The default parameters are as follows. For special needs, please contact sales.**

**1) Connector FC/APC, 900 um, 1 m by default for all devices except for high power devices.**

**2) Slow axis working, fast axis blocked, connector key is aligned to slow axis by default for PM devices.**