

## LEAD-FREE / RoHS-COMPLIANT

### BIAS TEE

### BT-0025

The BT-0025 is constructed 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 BT-0025 is a superior option in terms of performance, reliability and ease-of-use when compared to cumbersome self-made bias tees employing off-the-shelf conical inductors. The extremely low cutoff and resonance free operation makes the BT-0025 suitable for biasing amplifiers, lasers, and modulators driven with high frequency data patterns.



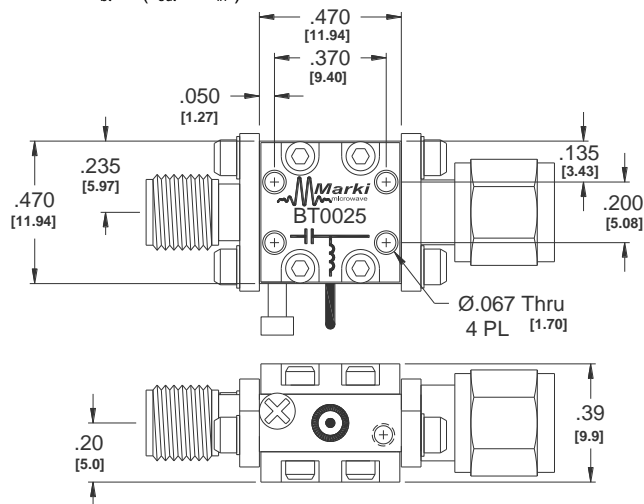
#### Features

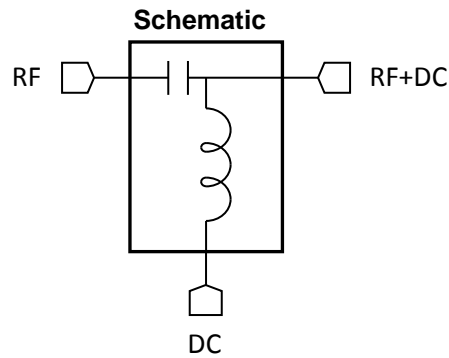
- Broadband: 40 kHz to 25 GHz
- Low Insertion Loss
- Non-Resonant
- Compact Size

**Electrical Specifications** - Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

Parameter	Frequency Range	Min	Typ	Max	
Insertion Loss (dB)	40 kHz-25 GHz		0.8	1.8	
DC Port Isolation (dB)			35		
Return Loss (dB)			16		
RF Power (W)					1
DC Current (mA)					500
DC Voltage (V)					30
DC Resistance (Ω)				6	
Inductance (uH)				1000	
Capacitance (uF)				1.1	
Weight (g)				10	
Risetime/Falltime (ps) <sup>1</sup>				11	

<sup>1</sup>Specified as 90%/10%. Calculated from  $\tau_{bt}^2 = (\tau_{out}^2 - \tau_{in}^2)$





**Application Examples**

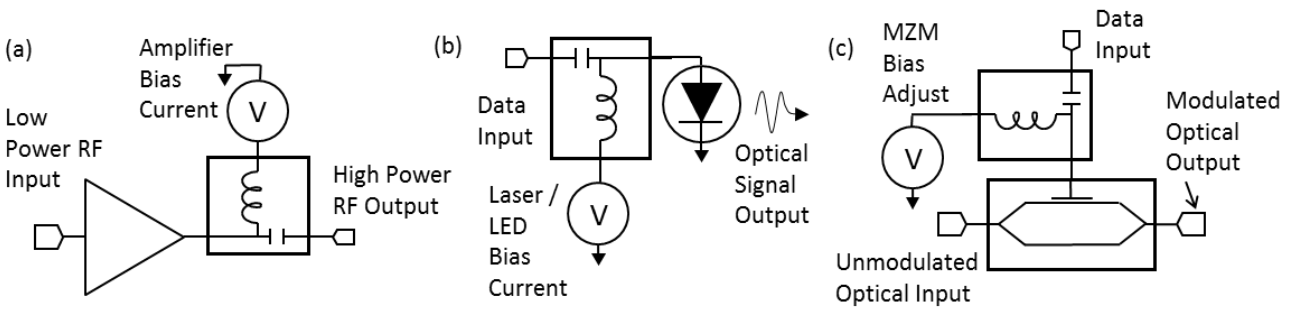


Fig. 1. Example Schematics of a) Broadband Microwave Amplifier Biasing, b) Laser/LED Biasing for Data Communication and c) Mach-Zender Modulator Biasing for Data Communication

**Typical Performance**

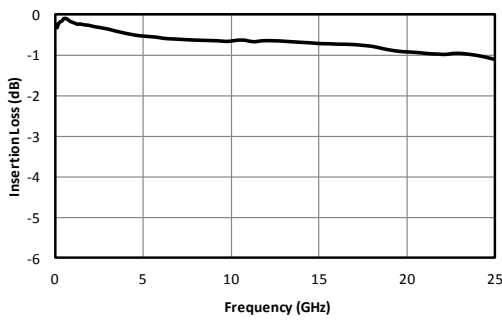


Fig. 2. RF insertion loss.

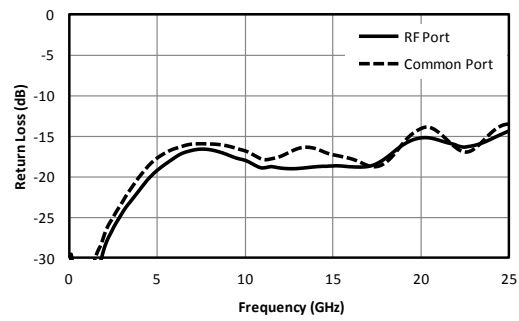


Fig. 3. Return loss.

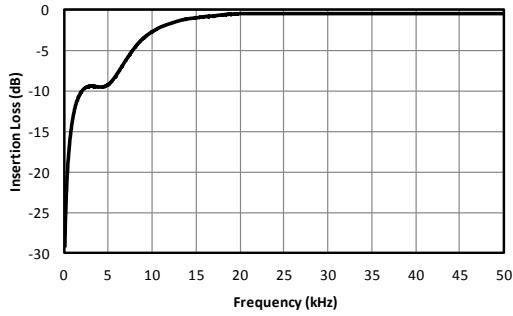


Fig. 4. Low frequency RF response.

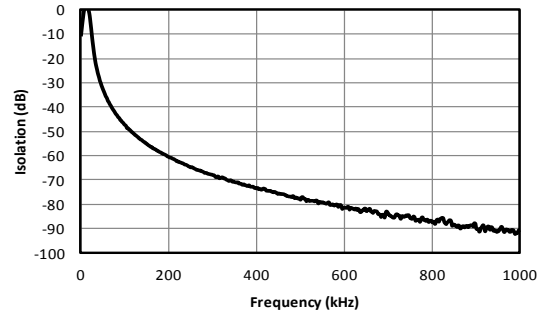


Fig. 5. Low frequency isolation.

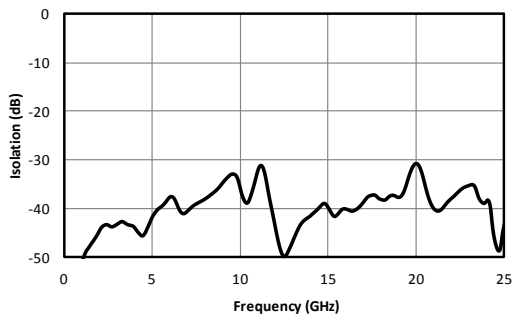


Fig. 6. DC-RF isolation.

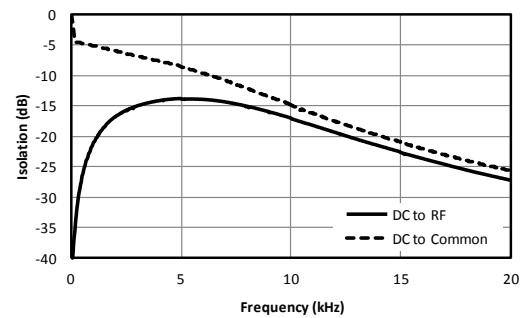


Fig. 7. Near DC isolation

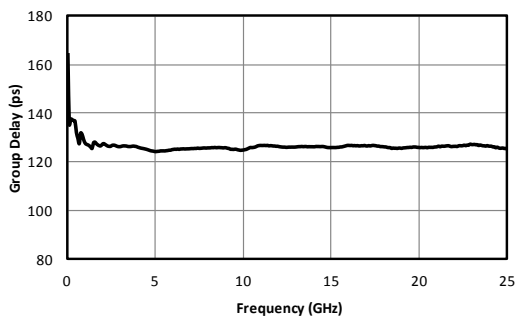


Fig. 8. Group delay.

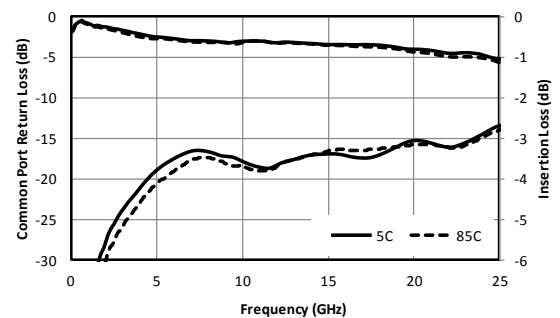


Fig. 9. Performance over temperature

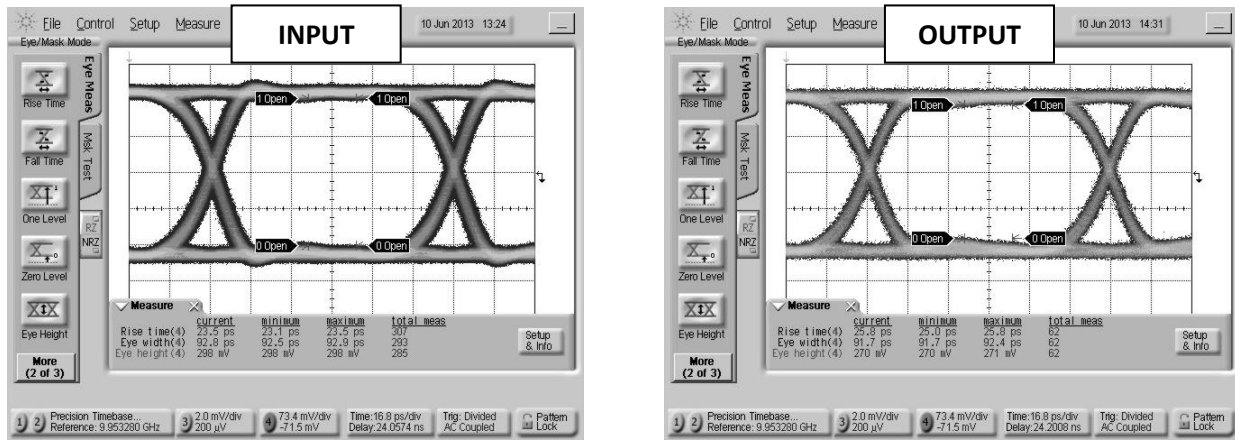


Fig. 7. Oscilloscope measurements of the BT-0025 with a 10Gb/s PRBS pattern. Eye diagrams are taken with a 2<sup>31</sup>-1 PRBS input demonstrating minimal eye distortion/closure afforded by the extremely low frequency operation of the bias tee.

Model Number	Description
BT-0025	40 kHz to 25 GHz Bias Tee with SMA connectors <sup>1</sup> , <b>LEAD-FREE/RoHS COMPLIANT</b>

<sup>1</sup>Consult factory for other connector options.

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**Revision History**

Revision code	Revision Date	Comment
A	September 2019	RoHS Compliant Assembly