HIGH POWER BIAS TEE BT1-0026

The BT1-0026 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 BT1-0026 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. The extremely low cutoff and resonance free operation makes the BT1-0026 suitable for biasing amplifiers, lasers, and modulators driven with high frequency data patterns.

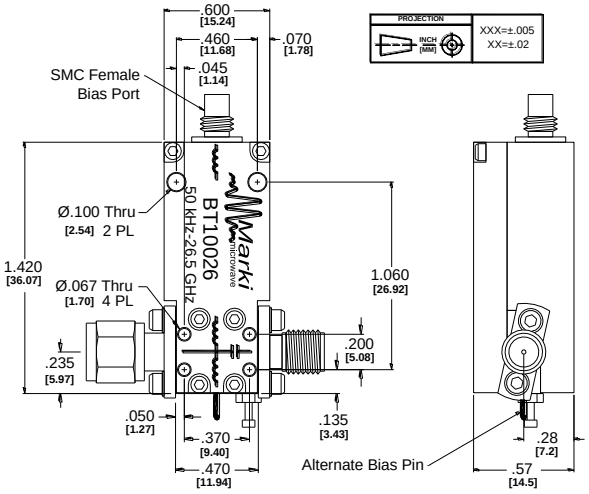
Features

- Broadband: 50 kHz to 26.5 GHz
- Low Insertion Loss
- High Power
- Non-Resonant
- Compact Size

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

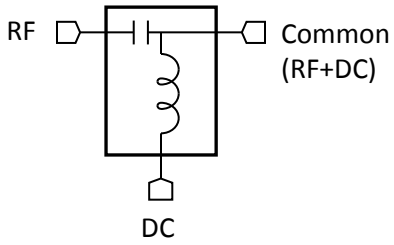
Parameter	Frequency Range	Min	Typ	Max
Insertion Loss (dB)	200 kHz-26.5 GHz		1	2
	50-200 kHz		2	
DC Port Isolation (dB)	50 kHz -1 GHz		50	
	1-26.5 GHz		30	
Return Loss (dB)	50 kHz-26.5 GHz		14	
RF Power (W)				10
DC Current (A)				1
DC Voltage (V)				50
DC Resistance (Ω)			1	
Risetime /Falltime (ps)[1]			10	

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



215 Vineyard Court, Morgan Hill, CA 95037 | Ph: 408.778.4200 | Fax 408.778.4300 | info@markimicrowave.com

Schematic



Application Examples

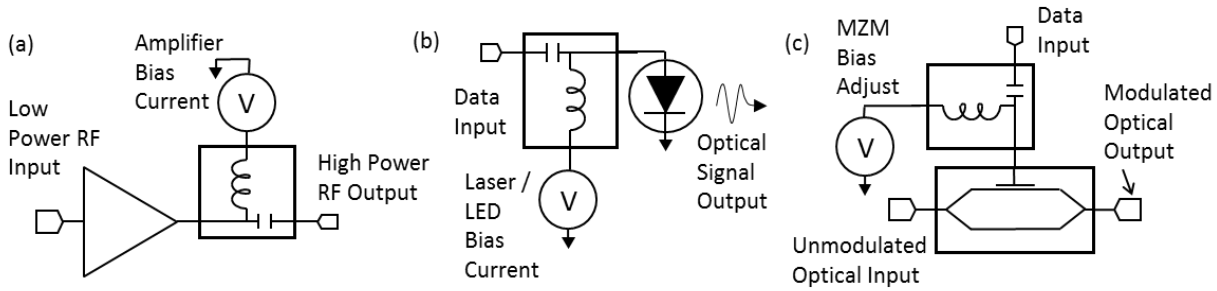


Fig. 1. Example Schematics of a) Broadband Microwave Amplifier Biasing, b) Laser/LED Biasing for Data Communication and c) Mach-Zender Modulator Biasing for Data Communication

Typical Performance

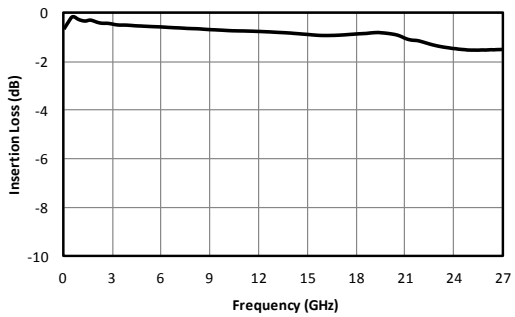


Fig. 2. RF insertion loss.

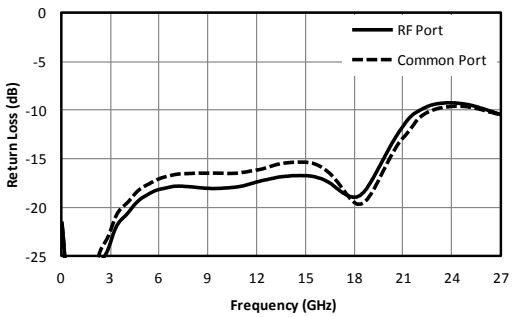


Fig. 3. Return loss.

215 Vineyard Court, Morgan Hill, CA 95037 | Ph: 408.778.4200 | Fax 408.778.4300 | info@markimicrowave.com

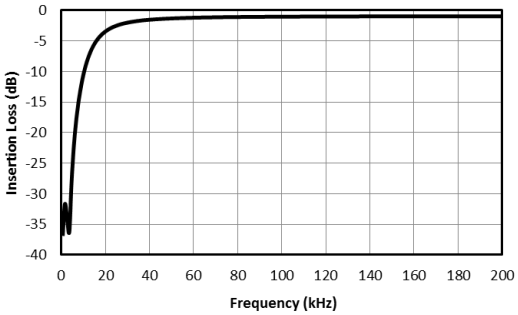


Fig. 4. Low frequency RF response.

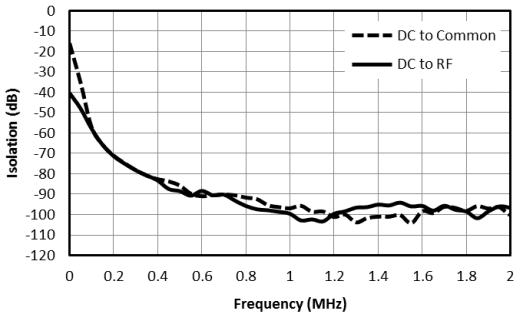


Fig. 5. Low frequency isolation.

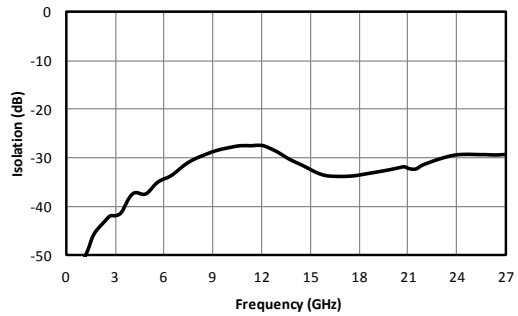


Fig. 6. DC-RF isolation.

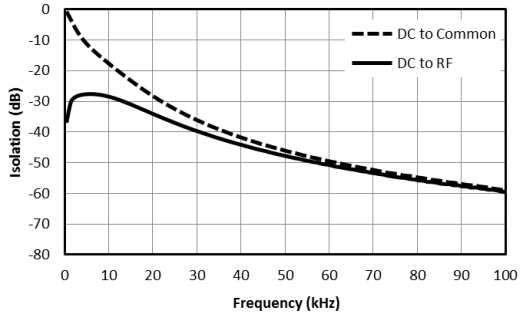


Fig. 7. Near DC isolation

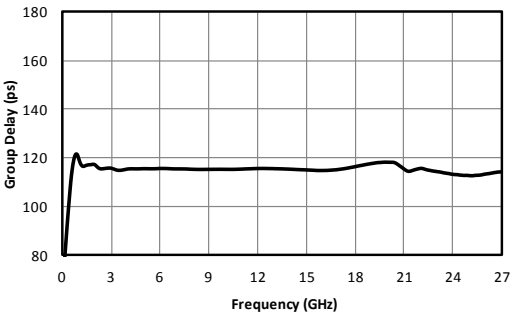


Fig. 8. Group delay.

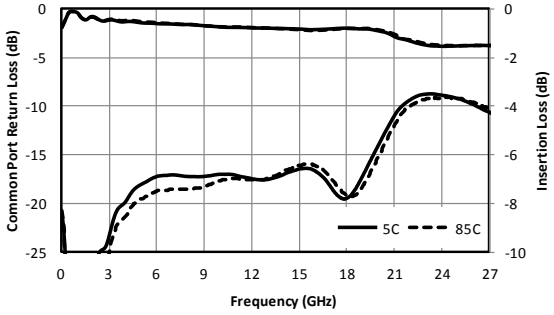
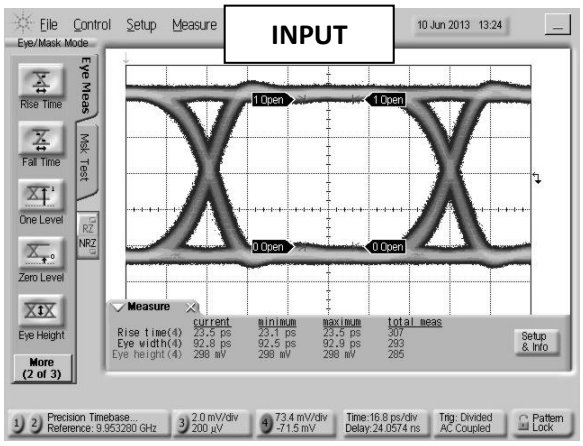


Fig. 9. Performance over temperature



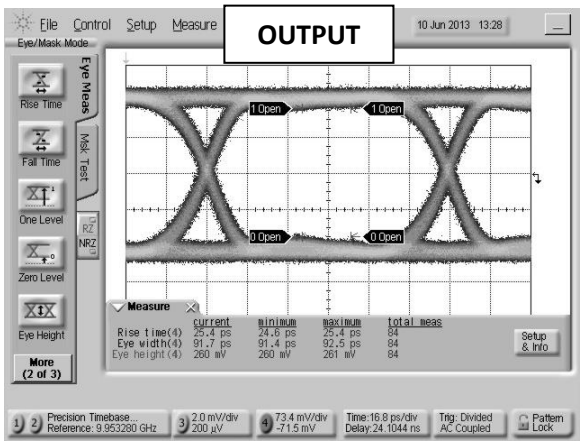


Fig. 7. Oscilloscope measurements of the BT1-0026 with a 10Gb/s PR

BS 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.

Model Number	Description
BT1-0026	50 kHz to 26.5 GHz High Power Bias Tee with SMA connectors[1]

[1]Consult factory for other connector options.

Revision History

Revision code	Revision Date	Comment
-	June 2013	Datasheet initial Release
A	February 2019	Corrected Low Frequency plots