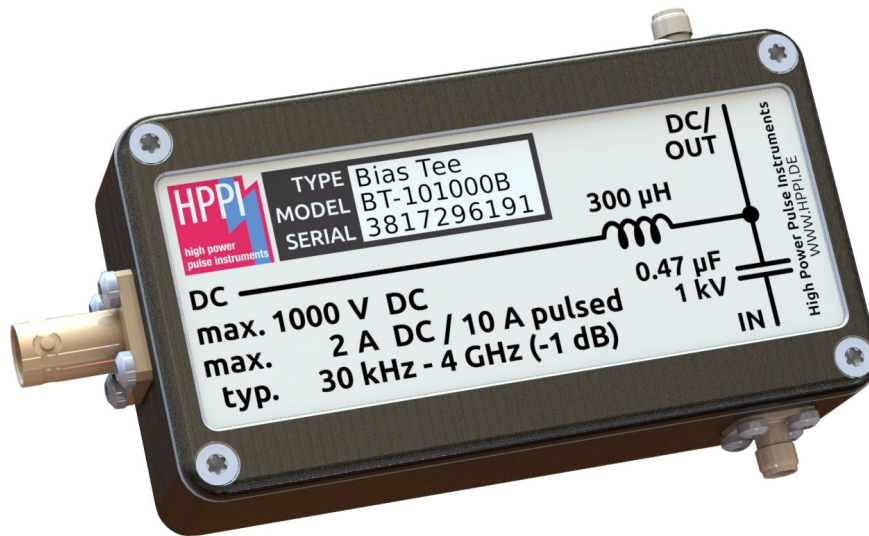


1 kV, 10 A, 30 kHz – 4 GHz High Voltage Bias Tee BT-101000B

Advanced TLP/HMM/HBM Solutions



1 Features

- High voltage 30 kHz to 4 GHz (–1 dB S21) bias tee
- 1 kV DC bias voltage
- DC input bias current: max. 2 A DC and max. 10 A pulsed at 100 ms pulse width and 1 % duty cycle
- Typ. 0.4 Ω DC resistance (port 3 to port 2)
- SMA 50 Ω pulse input and 50 Ω DC/pulse output
- BNC DC input
- Suitable for high-current TLP, VF-TLP and HMM
- Size: 130.6 mm x 77.6 mm x 31 mm
- **Lab safety requirement:** interlock operation above an operation voltage of 40V needed to avoid life-endangerment risks.

2 Description

The BT-101000B is used for DC biased TLP, VF-TLP, HMM or general RF measurements of high voltage and power devices in the time domain or frequency domain. The DC voltage or current is applied to the DC input (port 3). The TLP output (pulse force) is connected to the pulse input (port 1). The DUT or DUT pulse force line is connected to the DC/pulse output (port 2). The BT-101000B features a lower cut-off frequency of 30 kHz at high bandwidth of 4 GHz. Fig. 1 shows the simplified schematic diagram.

2.1 Electrical Characteristics

Fig. 2 shows the step response¹ from port 1 to port 2 at 100 ps input pulse rise time. The time delay of the output signal is about 0.4 ns.

¹calculated based on measured S-parameters in the range from 300 kHz to 9 GHz and excitation input pulse rise-time of 100 ps.

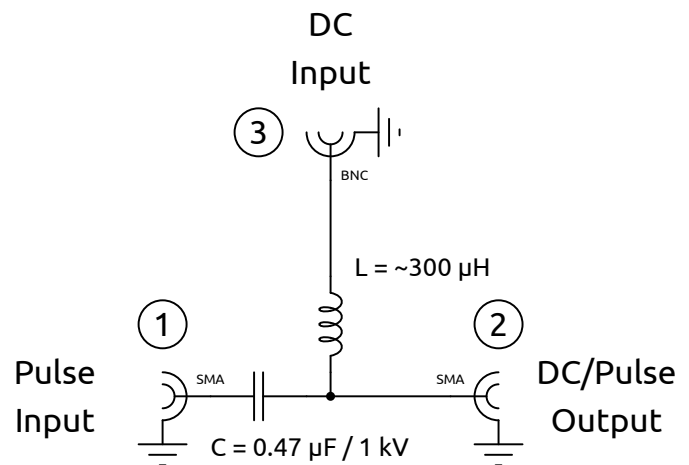


Figure 1: Simplified schematic diagram

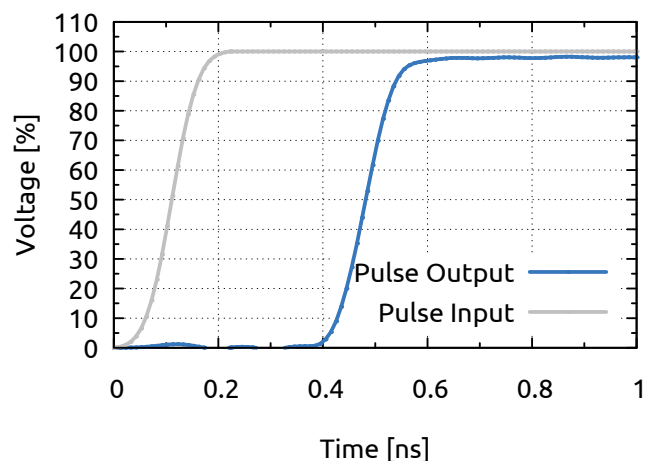


Figure 2: Step response of the bias tee at the pulse output (port 2) with input pulse rise time of 100 ps at the pulse input (port 1).

Fig. 3 shows the typical insertion loss from port 1 to port 2.

1 kV, 10 A, 30 kHz – 4 GHz High Voltage Bias Tee BT-101000B

Advanced TLP/HMM/HBM Solutions

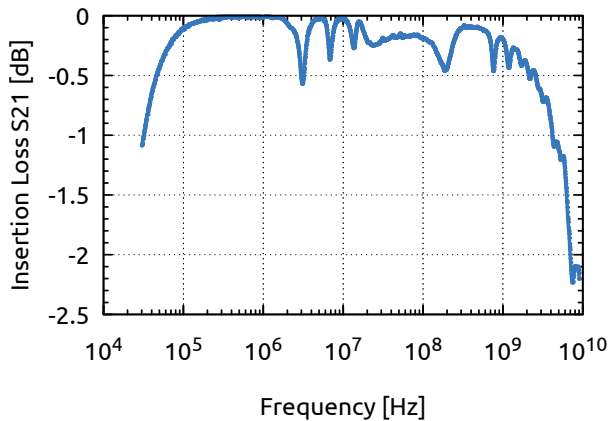


Figure 3: Measured insertion loss S21: pulse input to DC/pulse output in [dB]. Measurement condition: DC input port 3 terminated with 50 Ω.

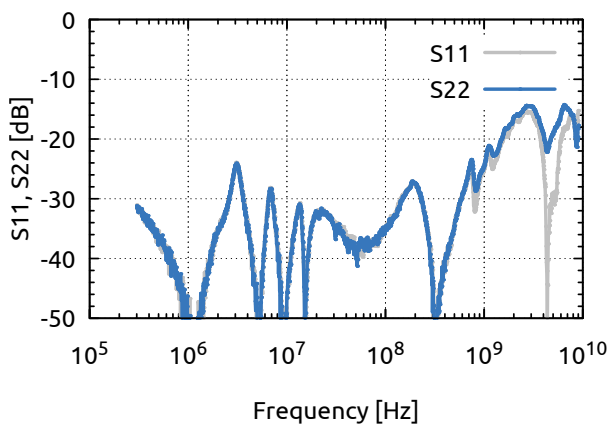


Figure 4: Measured reflection coefficients S11, S22: pulse input, DC/pulse output in [dB]. Measurement condition: DC input port 3 terminated with 50 Ω.

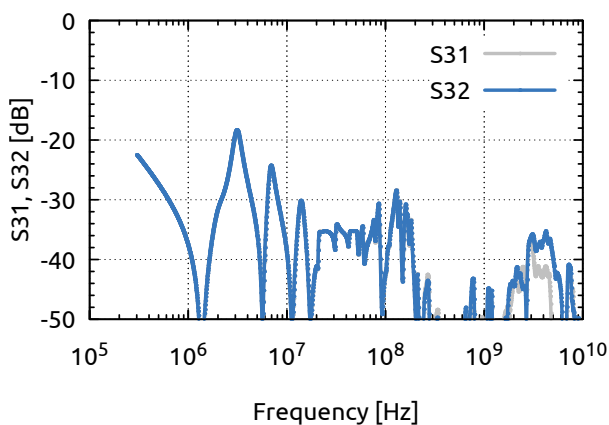


Figure 5: Measured isolation S31, S32: pulse input, DC/pulse output to DC input in [dB]. Measurement condition: DC input port 3 terminated with 50 Ω.

2.2 Laboratory Safety Requirement

Interlock operation above an operation voltage of 40V needed to avoid life-endangerment risks.

3 Physical Dimensions

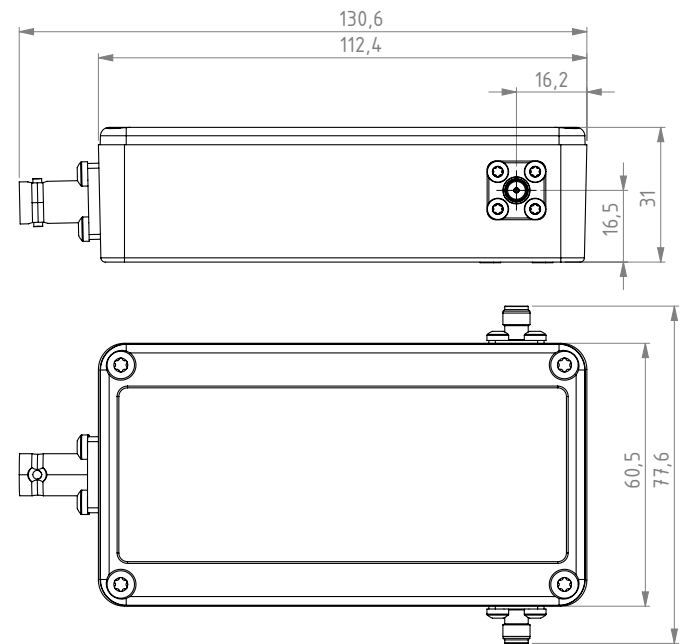


Figure 6: Physical dimensions of the BT-101000B in [mm]

4 Ordering Information

Pos.	Description	Part No.
01	1 kV, 10 A, 30 kHz – 4 GHz High Voltage Bias Tee	BT-101000B

General

The product data contained in this data-sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. Our products are solely intended to be commercially used internally and should not be sold to consumers. This data-sheet is describing the specifications of our products for which a warranty is being granted by HPPI GmbH. Any such warranty is granted exclusively pursuant to the terms and conditions of the respective supply agreement. There will be no guarantee of any kind for the product and its specifications. For further information on technology, specific applications of our product, delivery terms, conditions and prices please contact HPPI:

High Power Pulse Instruments GmbH
 Stadlerstrasse 6A
 D-85540 Haar, Germany
 Phone : +49 (0)89 8780698 - 440
 Fax : +49 (0)89 8780698 - 444
 E-Mail : info@hppi.de

Due to technical requirements our products and/or their application may be harmful. For information please read carefully the manual or contact HPPI. Safety notes in the manual will inform you about possible risks that result from any foreseeable application of our products. Changes of this data-sheet are reserved.