

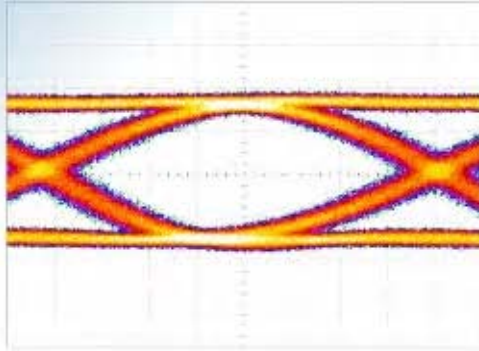


## SHF Communication Technologies AG

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# Datasheet

## SHF BT65

### Broadband Bias Tee



Resonance free transmission performance from 20 kHz to over 65 GHz  
Innovative construction – Patent pending

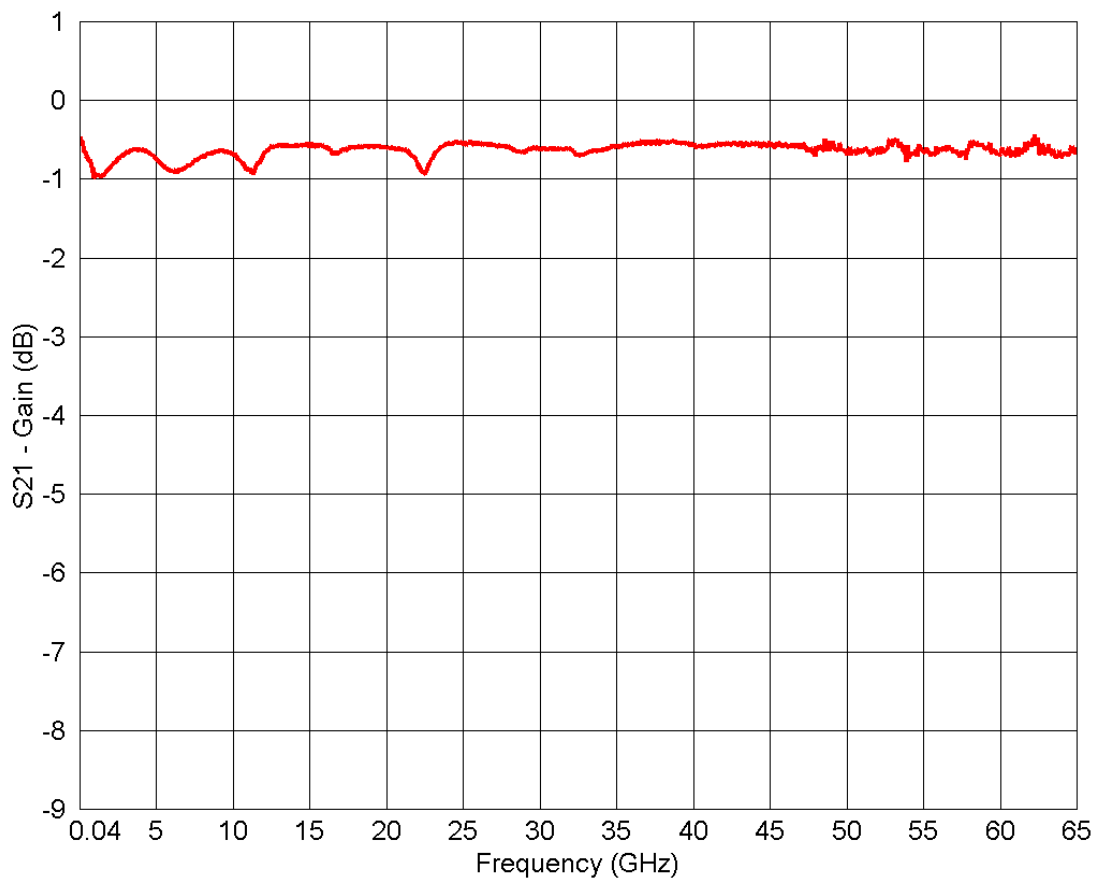




## Specifications – SHF BT65

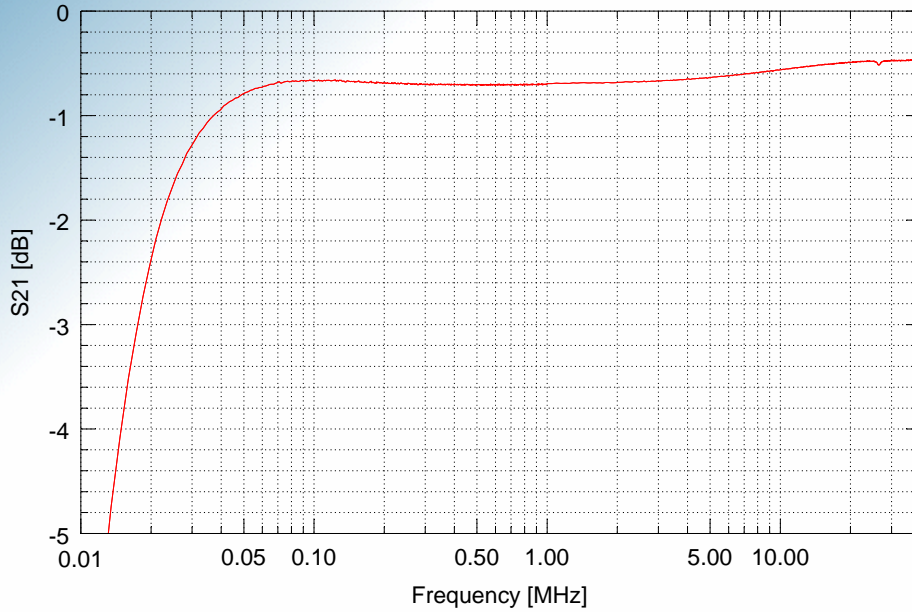
| Parameter                 | Symbol            | Unit | Min | Typ | Max              | Conditions                            |
|---------------------------|-------------------|------|-----|-----|------------------|---------------------------------------|
| High frequency 3 dB point | $f_{\text{HIGH}}$ | GHz  | 65  |     |                  |                                       |
| Low frequency 3 dB point  | $f_{\text{LOW}}$  | kHz  |     |     | 50               | at 0.4 A                              |
| Insertion loss            | $S_{21}$          | dB   |     |     | 1.5              | <60 GHz                               |
| Input return loss         | $S_{11}$          | dB   |     | -10 | -17<br>-15<br>-9 | >40 MHz <15 GHz<br><30 GHz<br><65 GHz |
| Isolation                 |                   | dB   |     |     | -40              |                                       |
| Maximum input power       | $P_{\text{max}}$  | dBm  |     |     | 30               |                                       |
| Rise time/Fall time       | $t_r/t_f$         | ps   |     |     | 5                | 10...90%                              |
| Bias voltage              | $V_{\text{bias}}$ | V    |     |     | 16               | 0.4 A                                 |
| Input connector           |                   |      |     |     |                  | V (1.85 mm)                           |
| Output connector          |                   |      |     |     |                  | V (1.85 mm)                           |
| Dimensions                |                   | mm   |     |     |                  | 40x13x12.6                            |

### Insertion loss

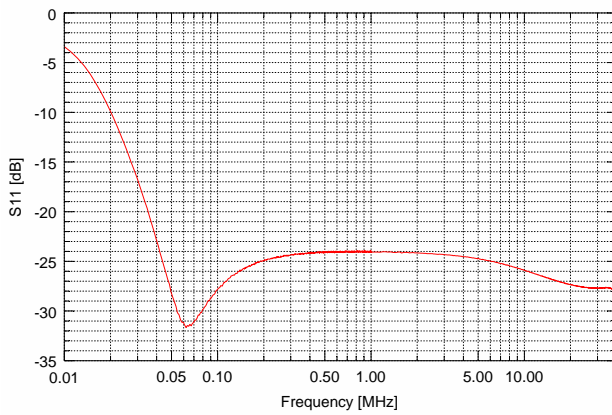
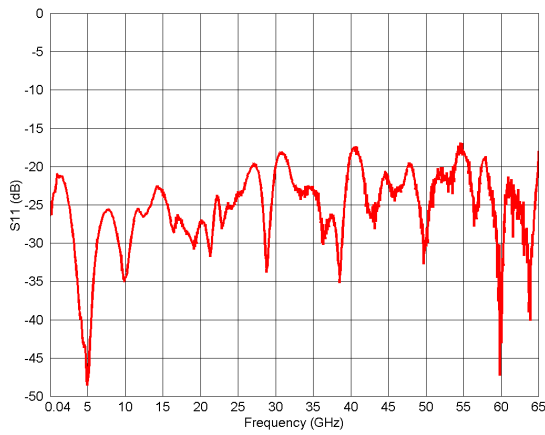




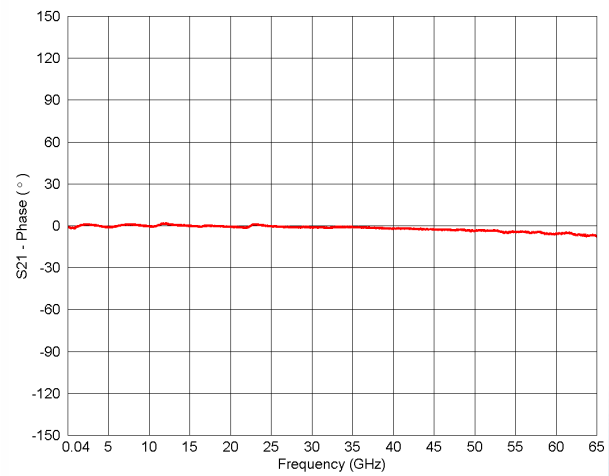
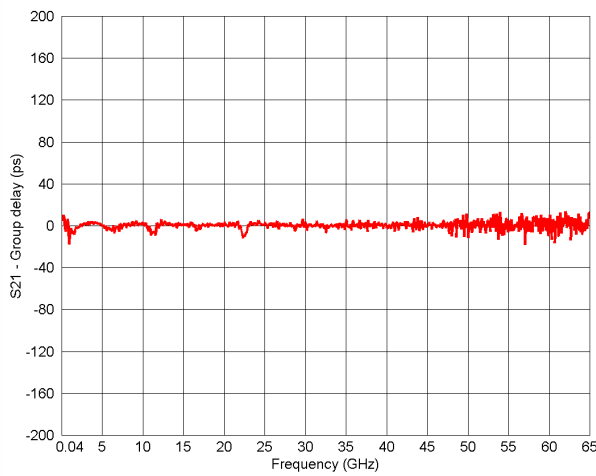
## Low frequency insertion loss



## Input return loss



## Group delay and phase response



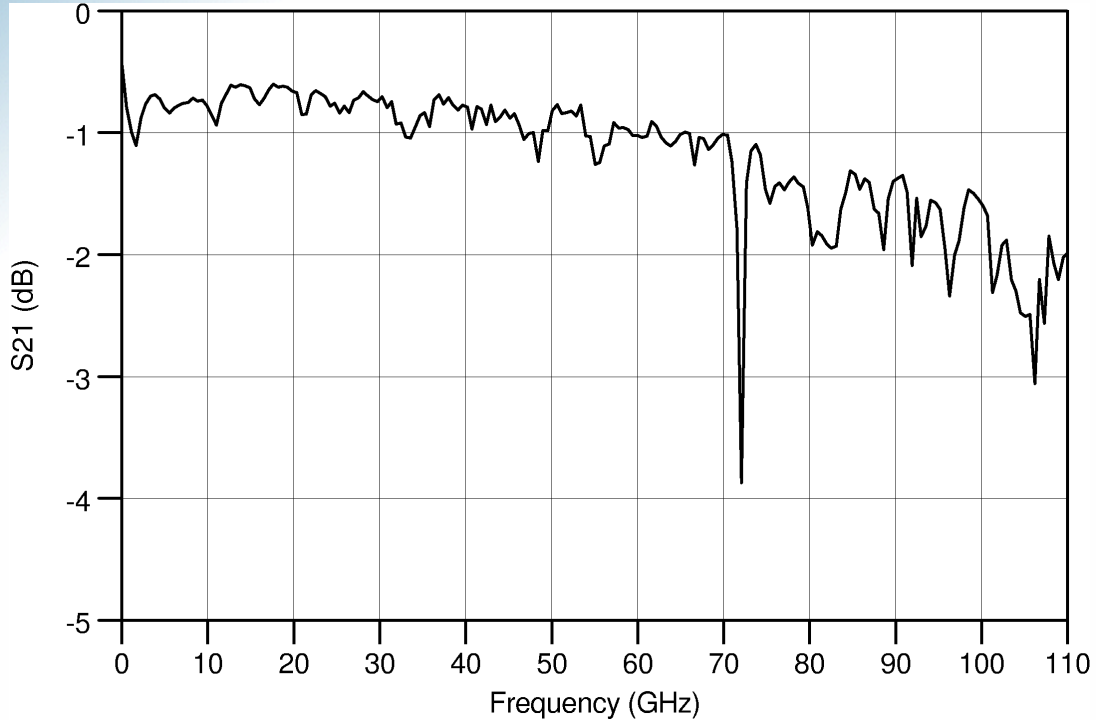
Aperture of group delay measurement: 100MHz



## Option EM

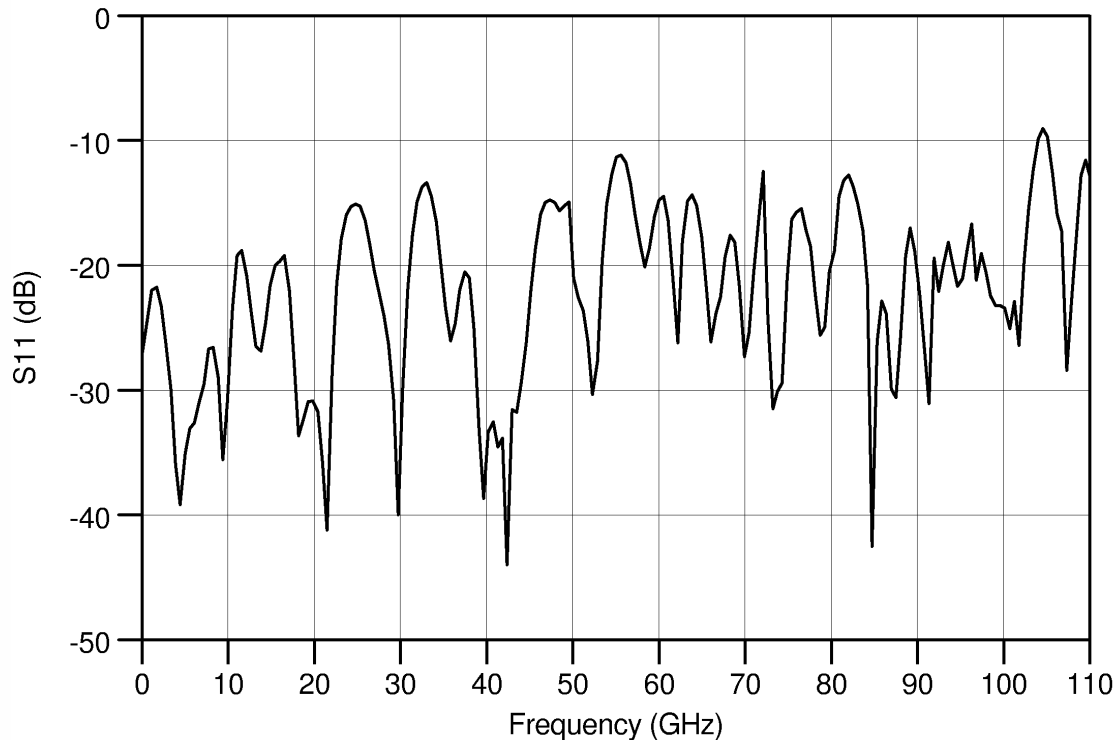
The performance of the bias tee can be measured up to 110GHz. The data is supplied on a floppy disk in .s2p format. Measured with Agilent 8510XF and 1mm → V adaptors on input and output of bias tee. The data presented contain the contributions due to the adaptors.

### Insertion loss



The spike at ~71GHz is due to moding of the V connectors.

### Input return loss





## Eye diagrams at 2.5 Gbps

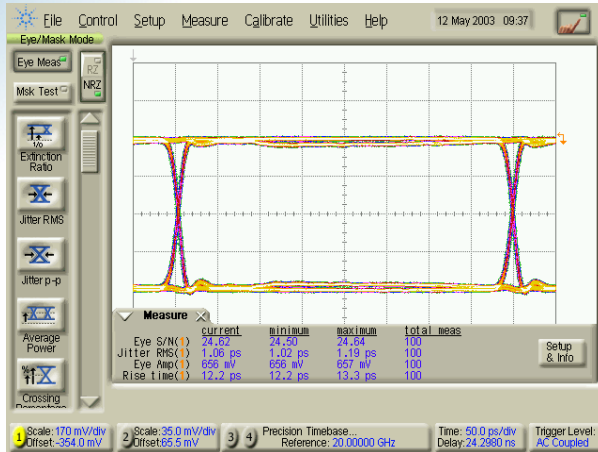
**Input signal** generated by SHF BPG 44 Opt. LJ NRZ, PRBS  $2^{23} - 1$ , measured with Digital Communications Analyzer Agilent 86100B / 83484A

50 cm Sucoflex 102EA + 3 dB V-Gold attenuator between the generator and the sampling head input

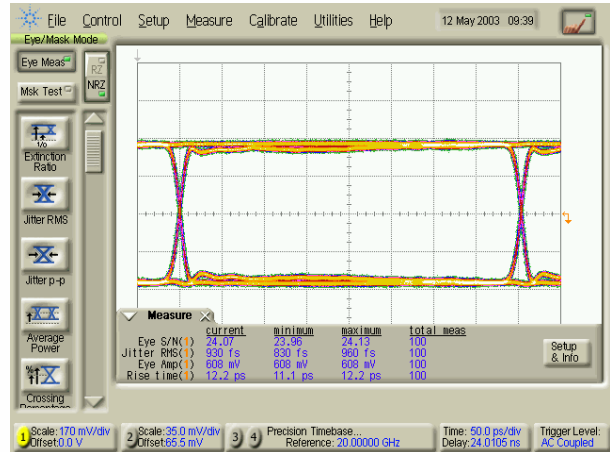
**Output signal** measured with Digital Communications Analyzer Agilent 86100B / 83484A

50 cm Sucoflex 102EA between the generator and the bias tee

3 dB V-Gold attenuator before the sampling head input



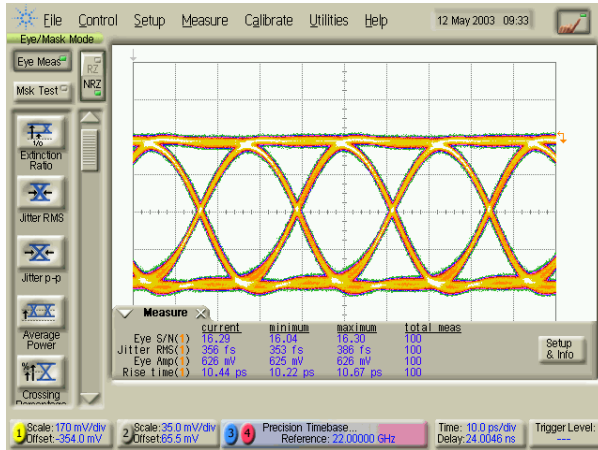
Input signal



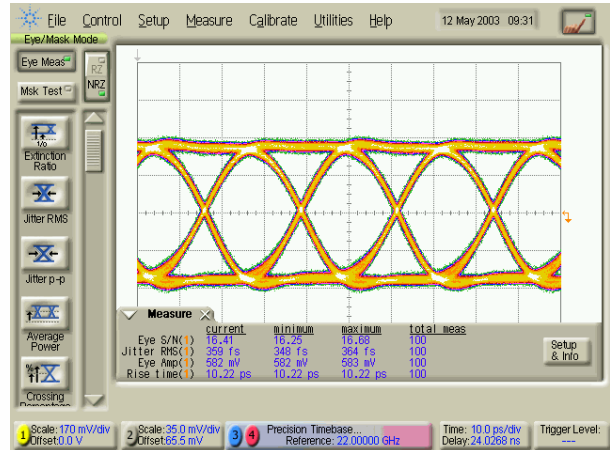
Output signal

## Eye diagrams at 44 Gbps

Measurement conditions as above



Input signal



Output signal



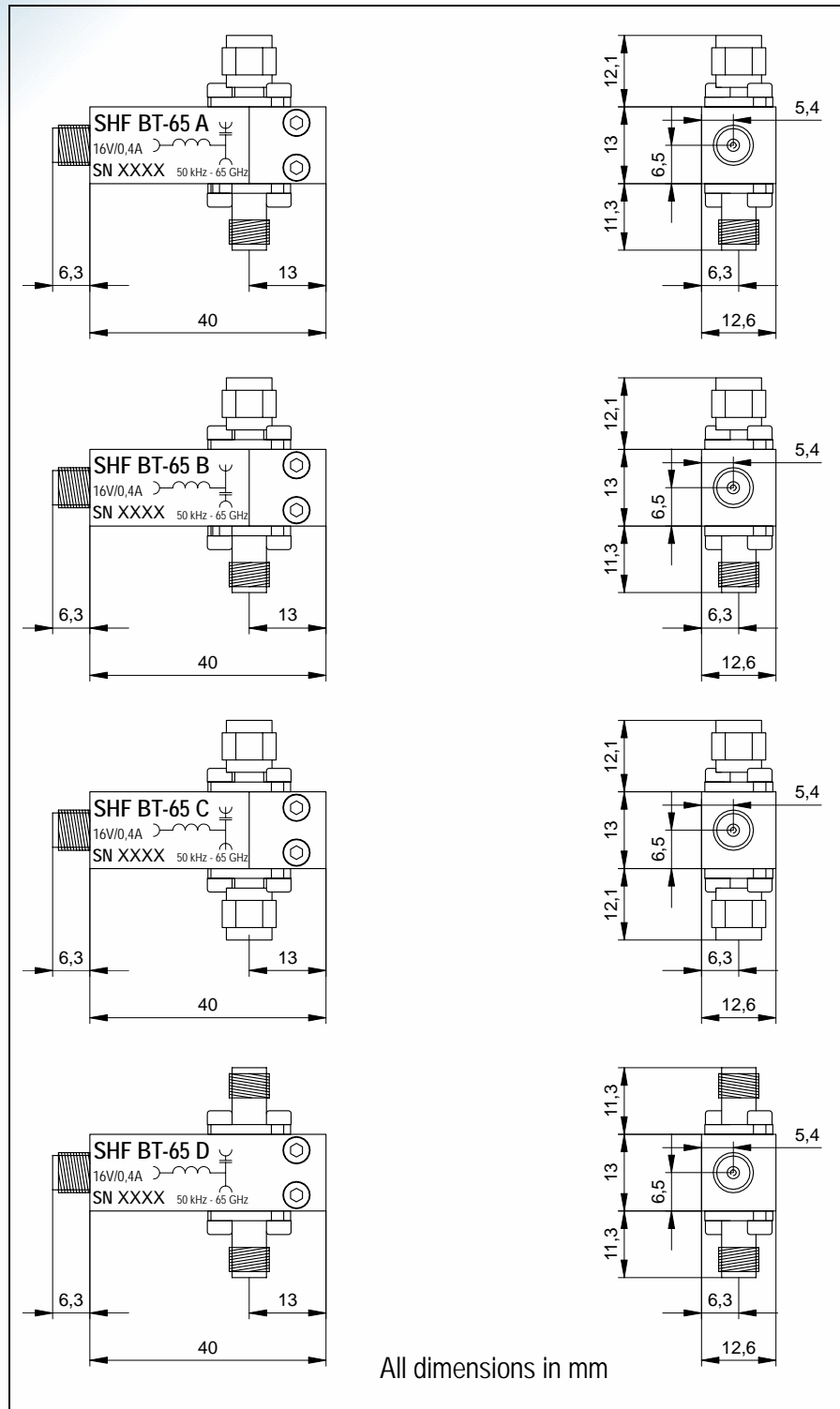
## Outline diagram

### Applications

Optical Communications  
Research and Development  
High-Speed Pulse Experiments  
Data Transmission

**The following combinations of connectors are available.**

Please specify with your order.



All dimensions in mm