

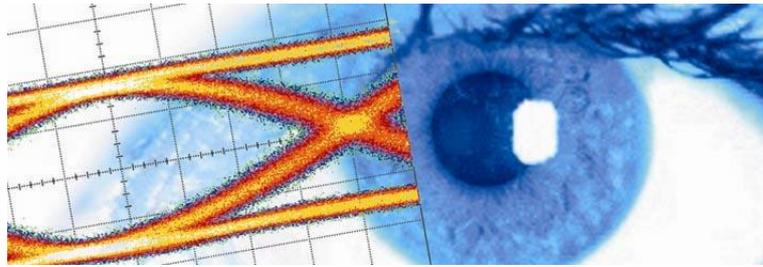


## SHF Communication Technologies AG

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# Datasheet

## SHF DCB110R

### Broadband DC-Block





## Description

The SHF DCB110R is a compact, high performance DC-Block with a small footprint and a bandwidth of more than 110 GHz. It is the RoHS compliant successor of the SHF DCB110.

## Applications

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

## Configurations

- A - 1.00mm male to 1.00mm female
- B - 1.00mm female to 1.00mm female
- C - 1.00mm male to 1.00mm male

## Options

- HV50 - High Voltage (50 V DC)



## Specifications - SHF DCB110R

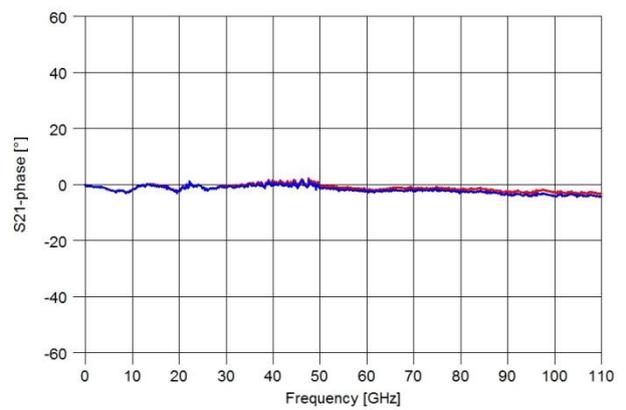
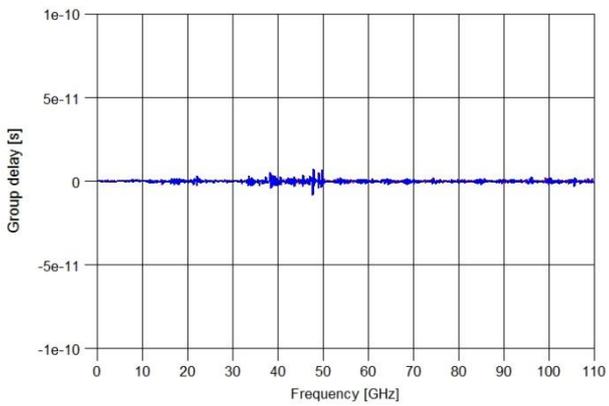
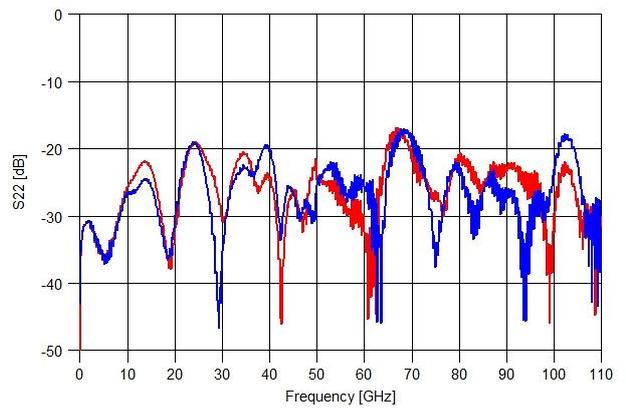
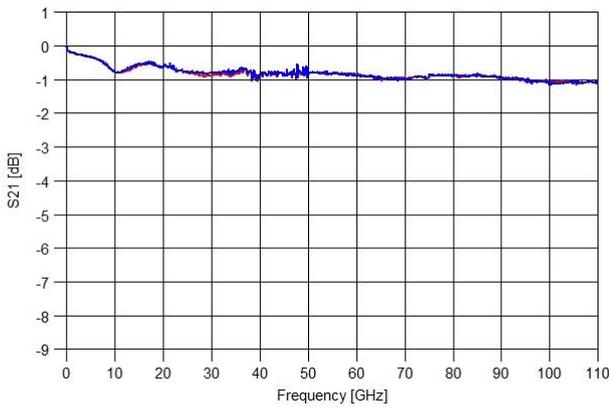
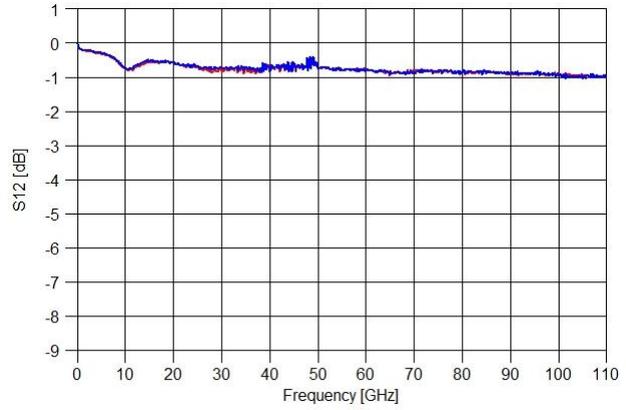
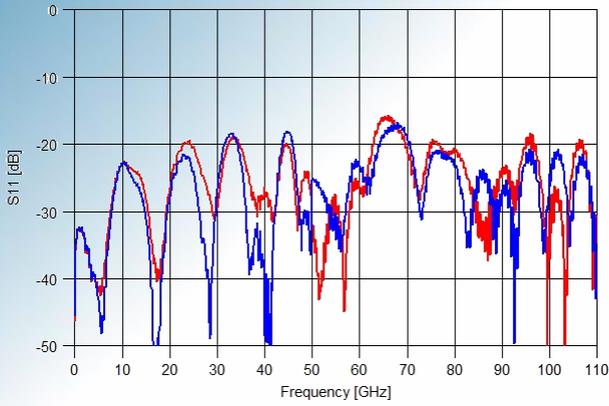
Parameter	Unit	Symbol	Min	Typ	Max	Conditions
<b>Absolute Maximum Ratings</b>						
Maximum RF Input	dBm V	$P_{in\ max}$			30 20	peak to peak voltage
DC Voltage W/o option	V				16	difference between both ports
DC Voltage Opt. HV50	V				50	difference between both ports
Case Temperature	$T_{case}$	°C	10	25	50	

Parameter	Unit	Symbol	Min	Typ	Max	Conditions
<b>Electrical Characteristics</b> (At 25°C case temperature, unless otherwise specified)						
High Frequency 3 dB Point	GHz	$f_{HIGH}$	110			
Low Frequency 3 dB Point W/o option	kHz	$f_{LOW}$		30 130	40 150	with 1 V <sub>DC</sub> applied with 16 V <sub>DC</sub> applied
Low Frequency 3 dB Point Opt. HV50	MHz	$f_{LOW}$		0.2 1.0	0.25 1.1	with 1 V <sub>DC</sub> applied with 50 V <sub>DC</sub> applied
Insertion loss	dB	$S_{21}$		1	1.5	< 110 GHz
Input Reflection	dB	$S_{11}$		-20 -15	-18 -10	< 20 GHz < 110 GHz
Rise Time/Fall Time	ps	$t_r/t_f$			3	20%...80%
Group Delay Ripple	ps				±50	40 MHz...110 GHz, 100 MHz aperture
<b>Mechanical Characteristics</b>						
Connector						1.00mm
Dimensions	mm					17x7x8



# Typical S-Parameters and Group Delay

W/o option: blue ; Option HV50: red

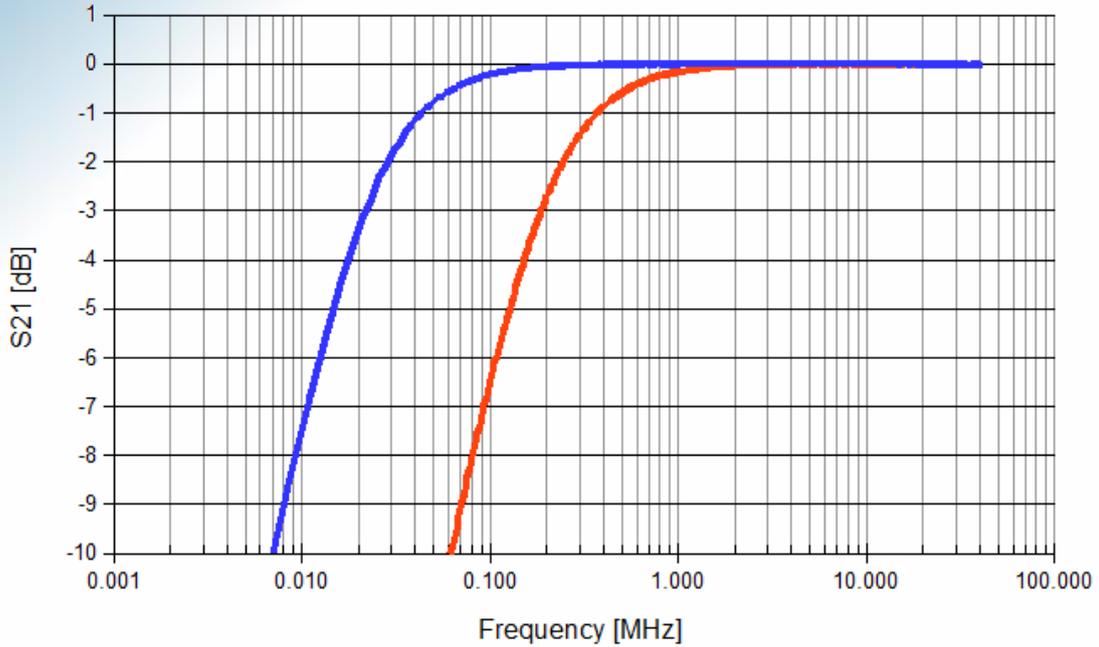


Aperture of group delay measurement: 100 MHz



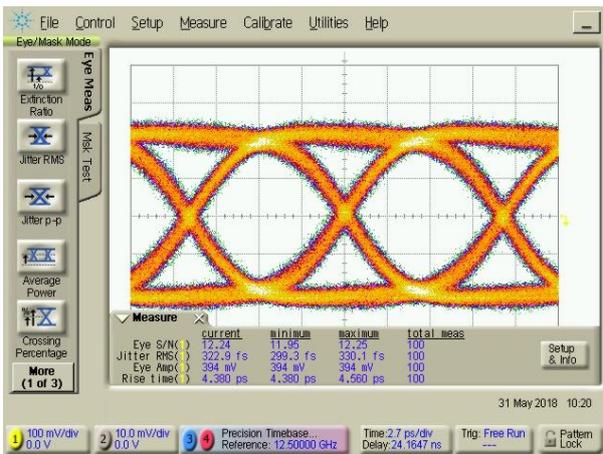
# Typical Low Frequency Response

W/o option: blue ; Option HV50: red

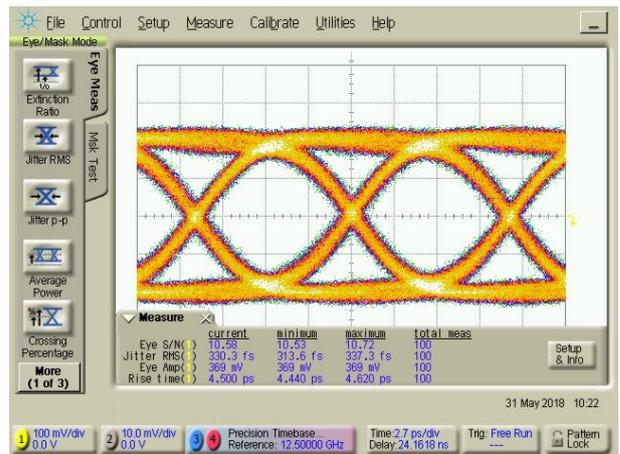


# Typical Binary Waveforms

Measurements at 100 Gbps had been performed using a SHF 603 A Mux and an Agilent 86100C DCA with Precision Time Base Module (86107A) and 70 GHz Sampling Head (86118A).



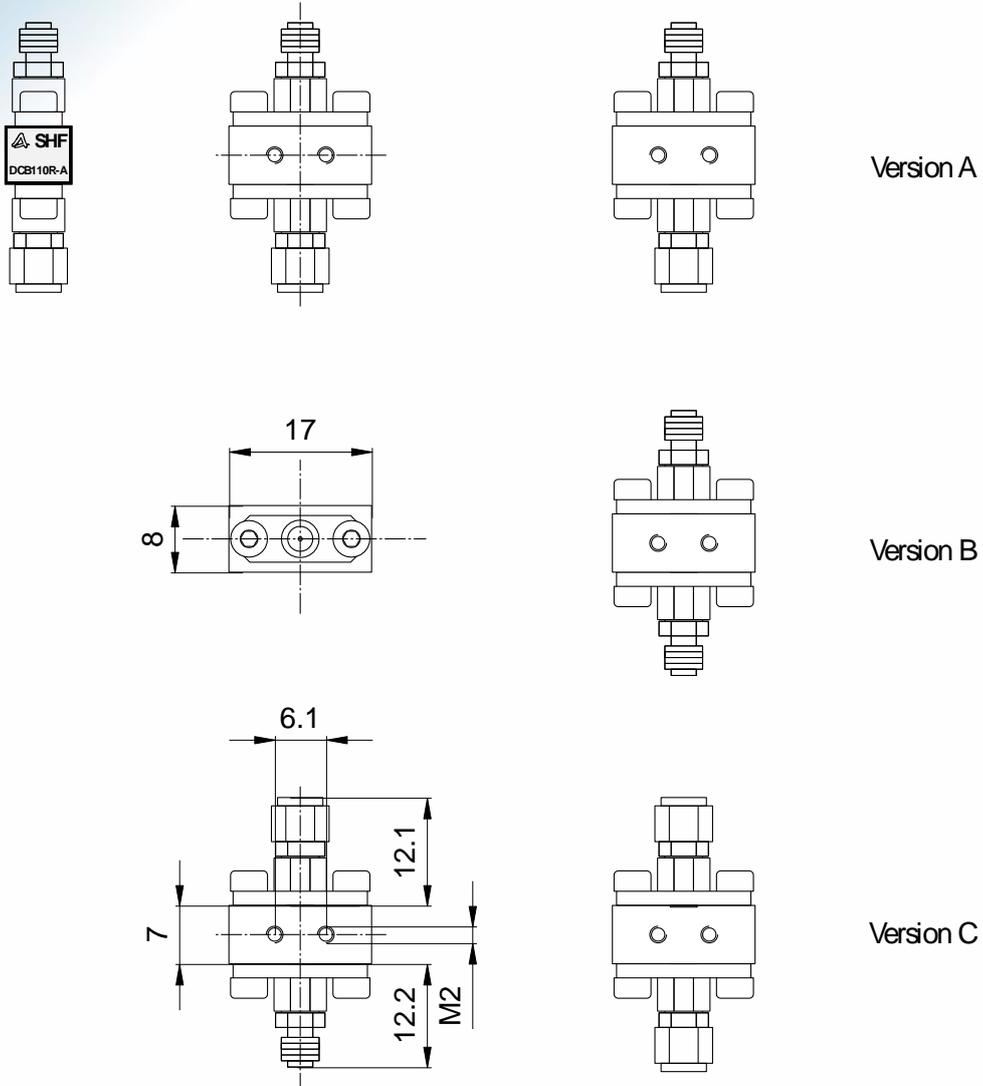
Input Signal @ 100 Gbps



Output Signal @ 100 Gbps



# Mechanical Drawing



All dimensions in mm