

Data Sheet

SHF DCB145 B



Broadband DC-Block



Description

The SHF DCB145 B is a compact, high-performance DC-Block with a small footprint and a bandwidth exceeding 145 GHz¹.

Dedicated mounting holes on the back side allow secure installation on a mounting plate for stable system integration.

Individual Inspection

Each DCB145 B will be delivered with an individual inspection report showing the compliance to the data sheet as well as the frequency domain performance. This data (including the touchstone® s2p-file) is accessible on-line. The specific link dedicated to each serial number will be provided with the delivery and is printed as a QR code.

Configurations

The connector configuration of the SHF DCB145 B is fully customizable. Please select between:

.8F.8M → 0.8 mm Female to 0.8 mm Male

.8F.8F → 0.8 mm Female to 0.8 mm Female

.8M.8M → 0.8 mm Male to 0.8 mm Male

Options

MP: Matched Pair of two DC-Blocks²

Product Code Example

- SHF DCB145 B | .8F.8M
Brand: SHF | Type: 145 GHz DC-Block | Revision: B | Port 2 – 0.8 mm male | Port 1 – 0.8 mm female | Connector Configuration:

¹ Due to the intrinsic geometry of the 0.8 mm connectors, energy could couple to high-order modes for frequencies above 145 GHz.

² Please, contact SHF's Sales Department for specifications of matched pairs.



Specifications³

Absolute Maximum Ratings

Parameter	Unit	Symbol	Min	Typ	Max	Comment
Maximum RF Input	dBm	$P_{in\ max}$			27	average power of a continuous ⁴ signal, 50 Ω load and $f \geq 300$ kHz
Maximum DC Voltage	V		-10		10	difference between ports and between ports to ground
Case Temperature	T_{case}	$^{\circ}C$	10	25	50	

Electrical Characteristics (At 25°C case temperature, unless otherwise specified)

Parameter	Unit	Symbol	Min	Typ	Max	Comment
High Frequency 3 dB Point	GHz	f_{HIGH}	145			
Low Frequency 3 dB Point	kHz	f_{LOW}			40 180	with 0 V_{DC} applied with 10 V_{DC} applied
Insertion loss	dB	IL			1 2 3	40 kHz < $f \leq 20$ GHz 20 GHz < $f \leq 100$ GHz 100 GHz < $f \leq 145$ GHz
Return Loss	dB	RL	15 10 7			40 kHz < $f \leq 20$ GHz 20 GHz < $f \leq 100$ GHz 100 GHz < $f \leq 145$ GHz

Mechanical Characteristics

Parameter	Unit	Symbol	Min	Typ	Max	Conditions
Connector	Ω			50		0.8 mm ⁵
Dimensions	mm					see outline drawing on page 5
Weight	g			6		

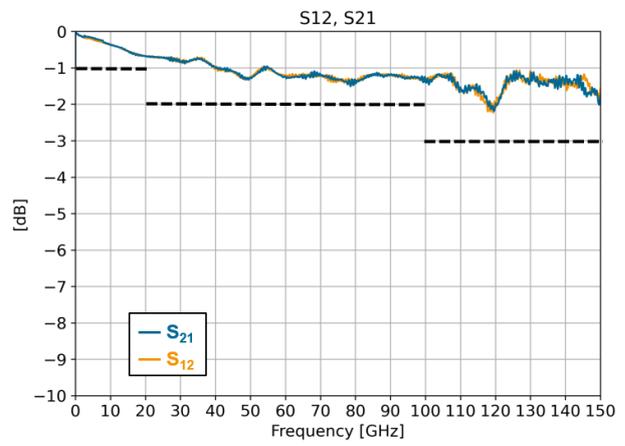
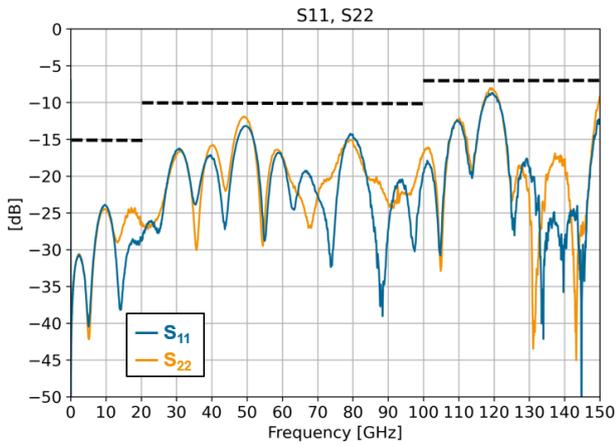
³ These specifications are valid for the SHF DCB145 B / .8F.8M configuration. Please, contact SHF's Sales Department for specifications of different configurations.

⁴ 27 dBm (0.5 W) corresponds to ~14.1 V peak-to-peak for continuous sinusoidal signals. A pulsed excitation with an average power of 0.5 W, and thus having significantly higher peaks, is possible.

⁵ Gender configurations according selected option.



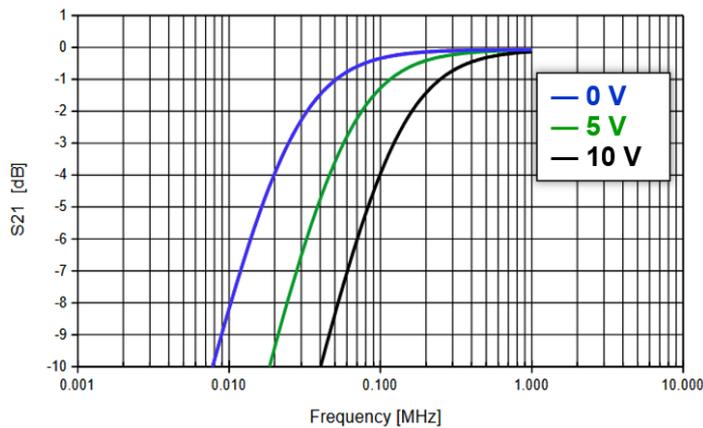
Typical S-Parameters



- **Sold lines: Measurements**
- **Black dashed lines: Specifications**

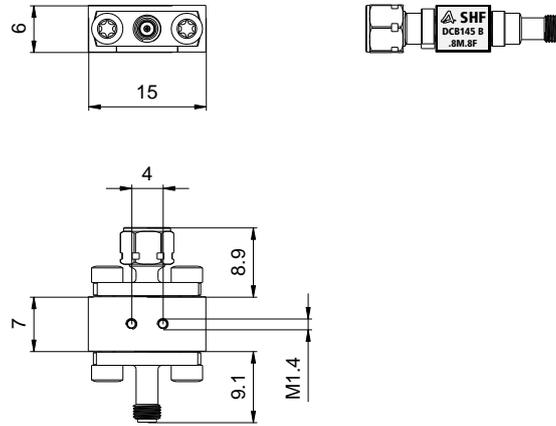
Typical Low-Frequency Response

Low Frequency Response of the DCB145 B with different applied voltage values.





Mechanical Drawing



All dimensions in mm



SHF Communication Technologies AG

Wilhelm-von-Siemens-Str. 23 D | 12277 Berlin | Germany

+49 30 772 051 0

sales@shf-communication.com

www.shf-communication.com