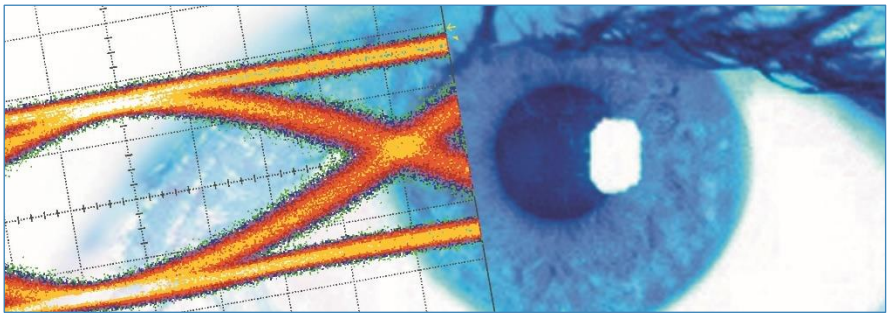


Data Sheet

SHF PDV110 A

110 GHz Power Divider

Description

The SHF PDV110 A is a compact, high-performance resistive power divider with a bandwidth exceeding 110 GHz. Output ports (2 and 3) are amplitude and phase-matched.

Fully customizable 1.0 mm connector configurations as well as between series (1.0 mm ↔ 1.85 mm) configurations are available to meet individual requirements of the customer and to avoid additional adapters in the setup.

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

The SHF PDV110 A can also be used as a power combiner, using port 2 and 3 as input ports.

Features

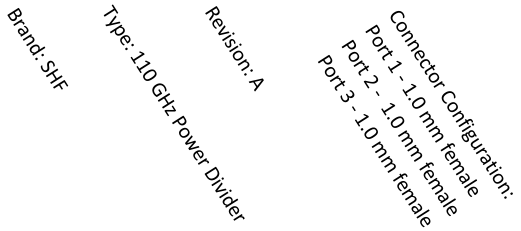
- Small and lightweight
- Low loss and low reflection
- Excellent phase and amplitude matching at output ports
- Bi-directional (can be used as divider or combiner)

Configurations

- WFWFWF: All ports 1.0 mm female
- Other configurations on request

Product Code Example

- SHF PDV110 A | WFWFWF



Specifications[1]

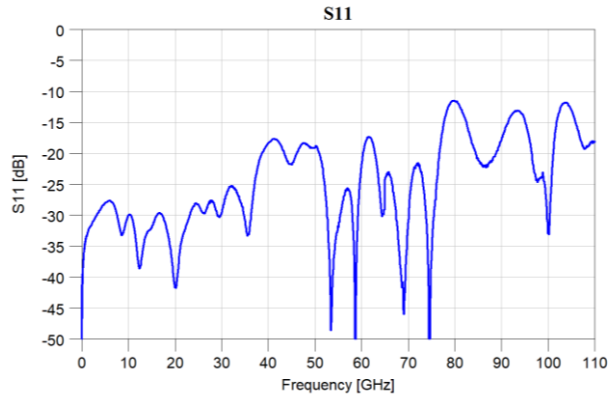
Parameter	Unit	Symbol	Min	Typ	Max	Conditions
Frequency range	f	GHz	DC		110	
Insertion loss	dB	IL			7 7.5 8.25 9	f < 20 GHz 20 GHz < f < 40 GHz 40 GHz < f < 75 GHz 75 GHz < f < 110 GHz
Return loss	dB	RL	20 12 12 9			f < 20 GHz 20 GHz < f < 40 GHz 40 GHz < f < 75 GHz 75 GHz < f < 110 GHz
Power handling	W	$P_{in,max}$			1	
Amplitude Balance	dB				±0.5 ±0.75 ±1.2	Amplitude balance[2] between output ports. f < 30 GHz 30 GHz < f < 75 GHz 75 GHz < f < 110 GHz
Phase Balance	deg				±5 ±10 ±15	Phase balance[3] between output ports. f < 30 GHz 30 GHz < f < 75 GHz 75 GHz < f < 110 GHz
Input impedance	Ω	R_L		50		
Operating temperature	°C	T_{case}	10		50	
Input connector						1.0 mm
Output connectors						1.0 mm
Weight	g			15.3		
Dimensions	mm				42.2 30.1 9	Width Length Height

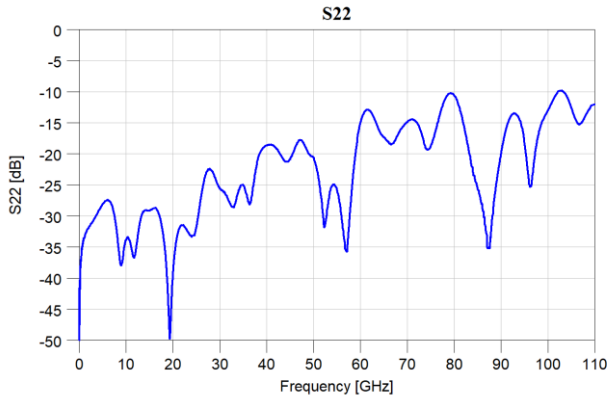
[1] These specifications are valid for the WFWFWF configuration.

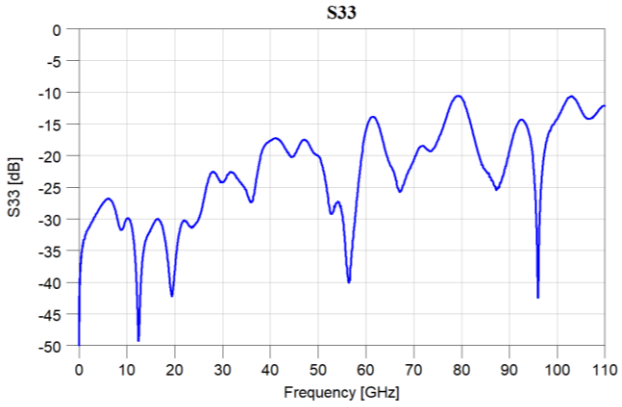
[2] The amplitude balance is defined as the amplitude difference in dB of the output signals at port 2 and 3. It is calculated as: $|S_{31}|_{dB} - |S_{21}|_{dB}$.

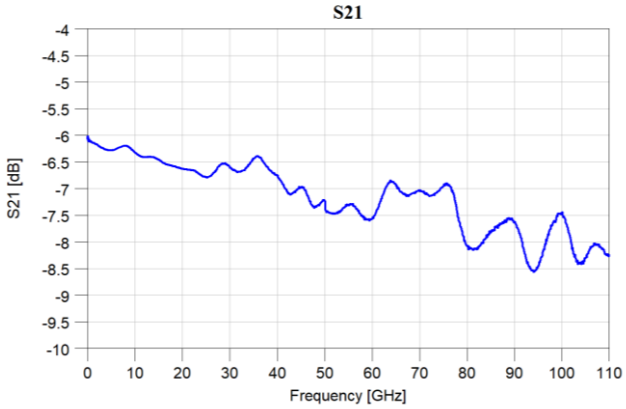
[3] The phase balance is defined as the phase difference in degrees of the output signals at port 2 and 3. It is calculated as: $\vartheta_{31} - \vartheta_{21}$, where ϑ_{31} and ϑ_{21} indicate the unwrapped phase of S_{31} and S_{21}, respectively.

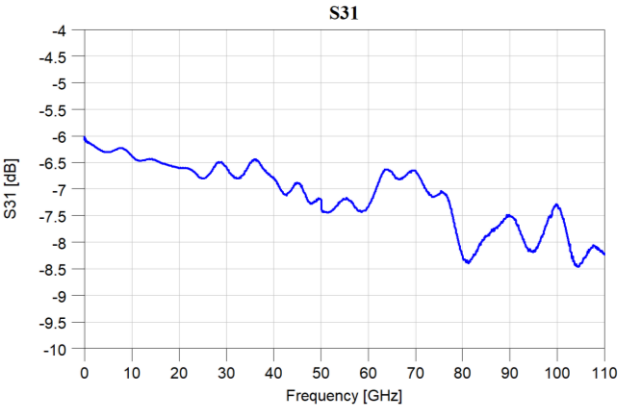
Typical S-Parameters and Balance Properties

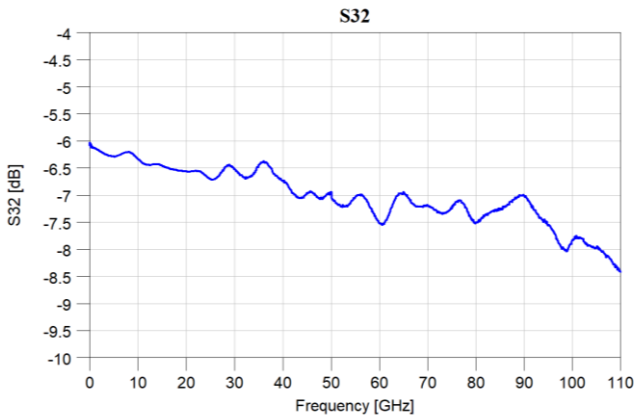


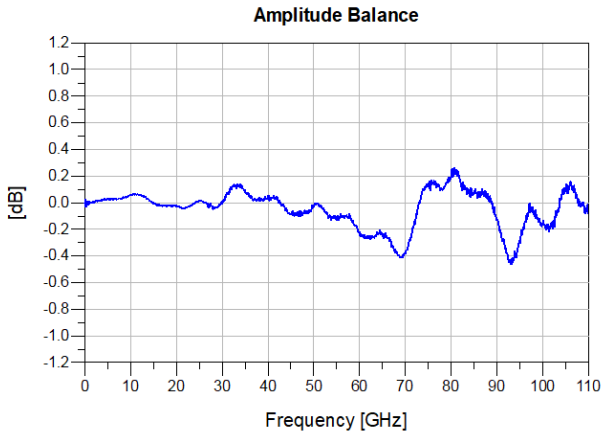


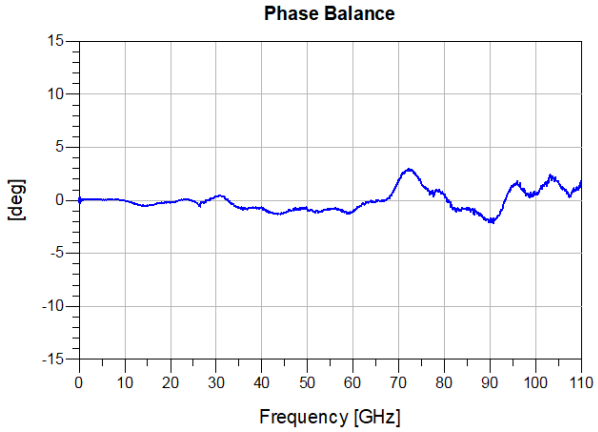




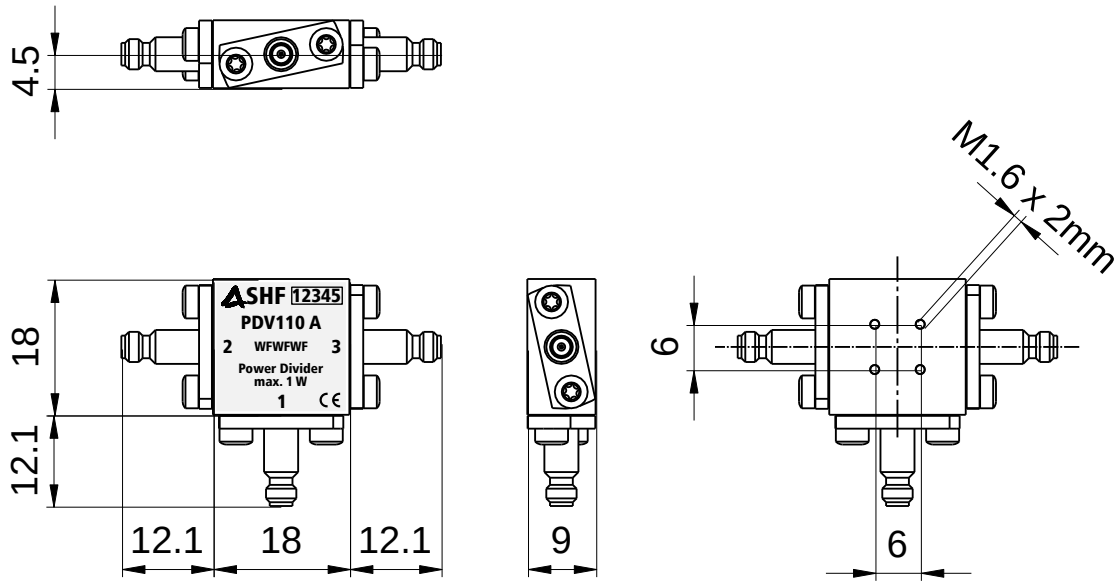





Amplitude Balance
[dB]
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.2
0
10
20
30
40
50
60
70
80
90
100
110
Frequency [GHz]


Phase Balance
[deg]
15
10
5
0
-5
-10
-15
0
10
20
30
40
50
60
70
80
90
100
110
Frequency [GHz]

Mechanical Drawing



All dimensions in mm

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