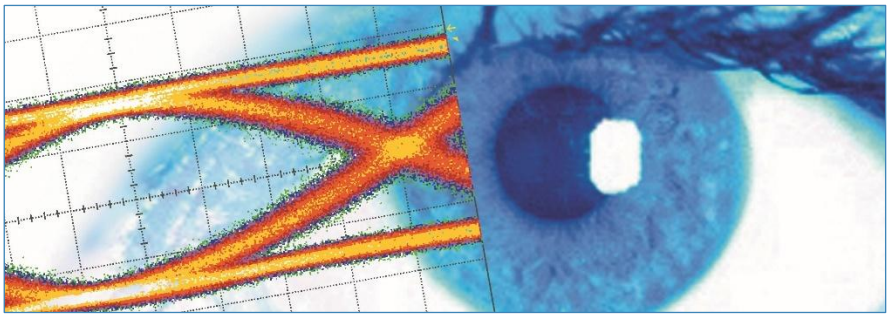
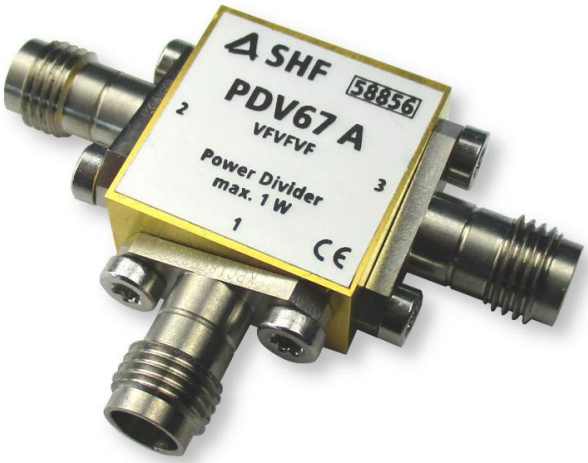


Data Sheet

SHF PDV67 A



67 GHz Power Divider

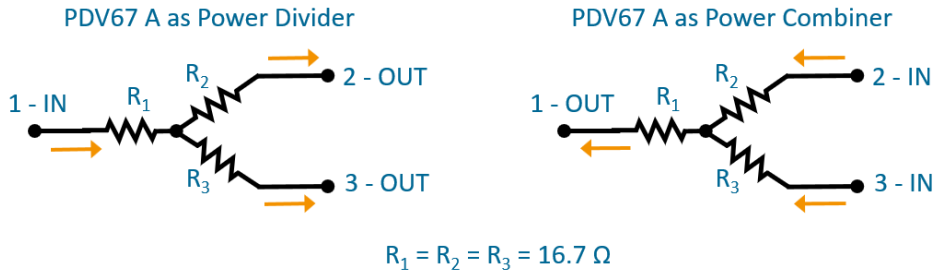
Description

The SHF PDV67 A is a compact, high-performance resistive power divider with a bandwidth exceeding 67 GHz[1]. Output ports (2 and 3) are amplitude and phase matched.

Fully customizable 1.85 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 PDV67 A can also be used as a power combiner, using port 2 and 3 as input ports.



Circuit schematic of the PDV67 A.

Features

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

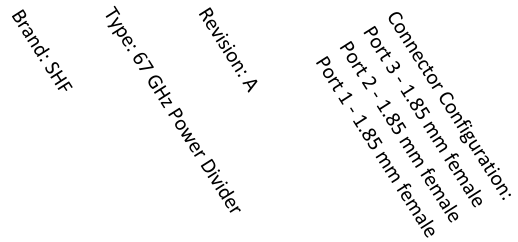
Configurations

- VFVFVF: All ports 1.85 mm female
- Other configurations on request

[1] Due to the intrinsic geometry of V connectors, energy could couple to high-order modes for frequencies above 67 GHz.

Product Code Example

- SHF PDV67 A | VFVFVF



Specifications[2]

Absolute Maximum Ratings

Parameter	Unit	Symbol	Min	Typ	Max	Conditions
Power handling	W	$P_{in,\ max}$			1	$P_{in,max}$ represents the overall maximum power that can flow through the PDV67 A. When used as a combiner, each input should not be fed more than $P_{in,max}/2$ = 0.5 W.

Mechanical Characteristics

Parameter	Unit	Symbol	Min	Typ	Max	Conditions
Operating temperature	°C	T_{case}	10		50	
Connectors						1.85 mm
Dimensions	mm				42.6 30.3 9	Width Length Height
Weight	g			17.5		

[2] These specifications are valid for the VFVFVF configuration.

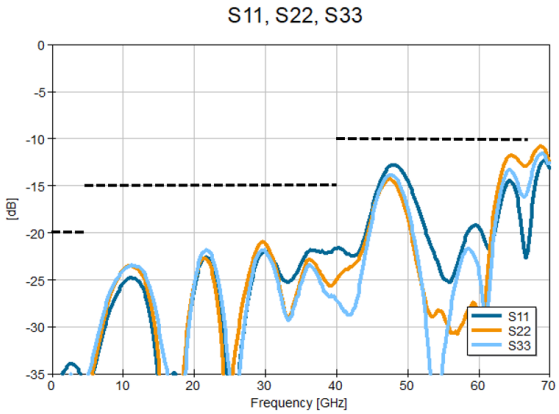
Electrical Characteristics (At 35°C case temperature, unless otherwise specified)

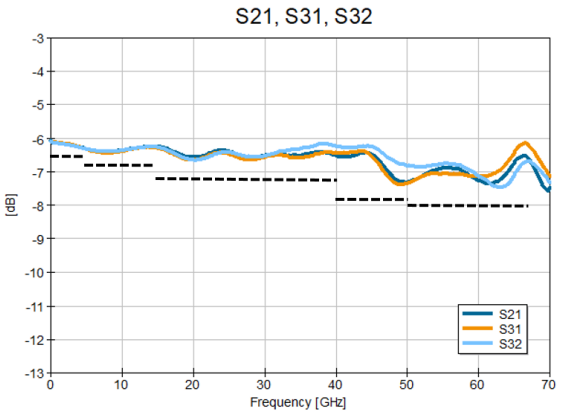
Parameter	Unit	Symbol	Min	Typ	Max	Conditions
Maximum Operating Frequency	GHz	f_{max}	67			
Minimum Operating Frequency		f_{min}			DC	
Input impedance	Ω	R_L		50		
Insertion loss	dB	IL			6.5 6.8 7.2 7.8 8	f < 5 GHz 5 GHz < f < 15 GHz 15 GHz < f < 40 GHz 40 GHz < f < 50 GHz 50 GHz < f < 67 GHz
Return loss	dB	RL	20 15 10			f < 5 GHz 5 GHz < f < 40 GHz 40 GHz < f < 67 GHz
Amplitude balance	dB				±0.3 ±0.5 ±0.6	Amplitude balance[3] between output ports. f < 15 GHz 15 GHz < f < 40 GHz 40 GHz < f < 67 GHz
Phase balance	deg				±3 ±6 ±7 ±8	Phase balance[4] between output ports. f < 15 GHz 15 GHz < f < 40 GHz 40 GHz < f < 50 GHz 50 GHz < f < 67 GHz

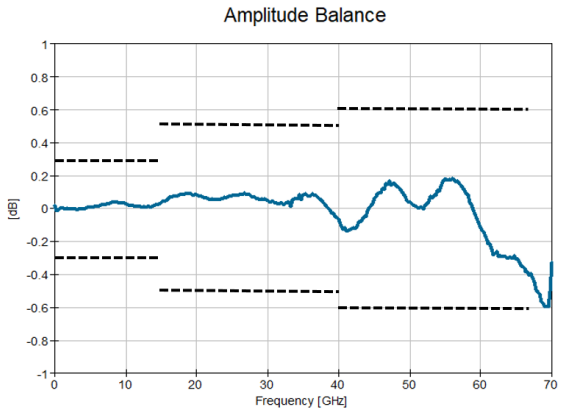
[3] The amplitude balance is defined as the amplitude difference in dB of the output signals at port 2 and 3. It is calculated as: $|S_{31}|_{dB}$ - $|S_{21}|_{dB}$.

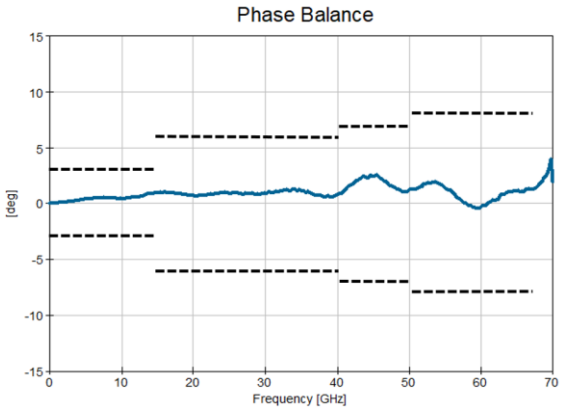
[4] The phase balance is defined as the phase difference in degrees of the output signals at port 2 and 3. It is calculated as: $\varphi_{31} - \varphi_{21}$, where φ_{31} and φ_{21} indicate the unwrapped phase of S_{31} and S_{21}, respectively.

Typical S-Parameters and Balance Properties



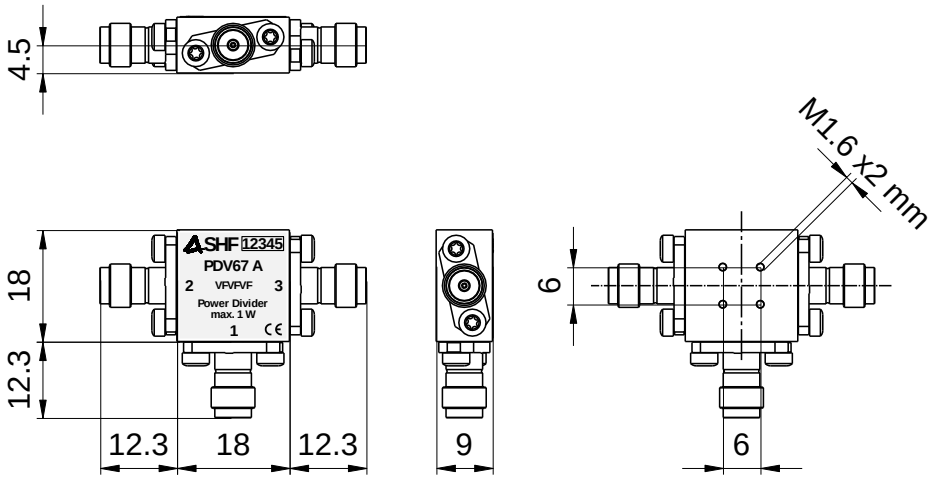






- **Sold lines: Measurements**
- **Black dashed lines: Specifications**

Mechanical Drawing



All dimensions in mm

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