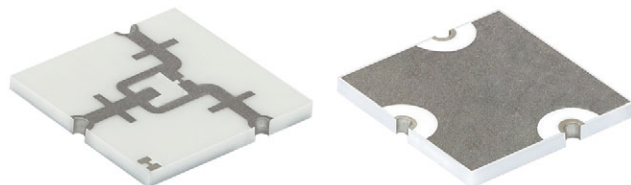


15 GHz to 20 GHz (2-Way) Wilkinson Power Divider / Combiner



LINKS TO ADDITIONAL RESOURCES



3D Models



S-Parameters



Simulation Tools

Vishay offers high performance 2-way Wilkinson power dividers ranging from 15 GHz to 20 GHz centered at 18 GHz. This device achieves a small package size due to the combination of an integrated resistor with lines. Additionally, minimum performance variation is achieved by taking advantage of low loss temperature stable thin film materials. **Customization available.**

FEATURES

- 3-port high frequency splitter
- 15 GHz to 20 GHz (2-way)
- -15 dB or -20 dB specifications
- < -20 dB center frequency output to output isolation
- HFSS encrypted model
- Thin film technology
- Surface-mount package
- Small size
- Operating temperature range: -55 °C to +155 °C
- Characteristic impedance: 50 Ω
- **Customization available**
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details


RoHS*
Available

**HALOGEN
FREE**
Available

**GREEN
(5-2008)**
Available

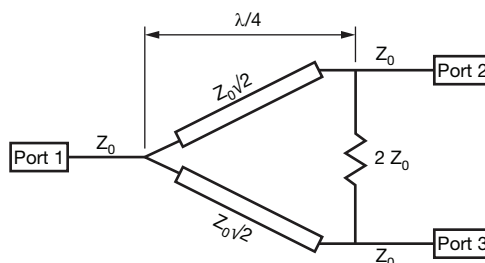
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	LEVEL	MIN.	TYP.	MAX.
Return loss	10 dB to 15 dB	15 GHz	-	19 GHz
Insertion loss (transmission) ⁽¹⁾	-	-	< 0.5 dB	19 GHz
Isolation loss (outputs)	-15 dB	15 GHz	-	23 GHz
	-20 dB	17 GHz	-	20 GHz
Amplitude splitting balance	-	-	< 0.25 dB	19 GHz
Amplitude isolation balance	-	-	< 0.2 dB	-
Phase isolation balance	-	-	0.3°	-

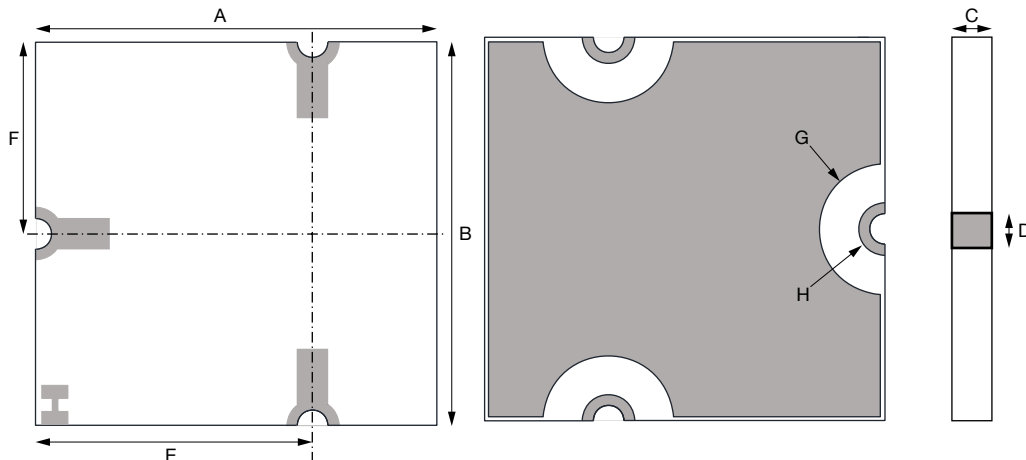
Notes

- Specifications guaranteed when operated in a 50 Ω system
- (1) Insertion loss = common port to output port insertion loss - 3 dB

SCHEMATIC



DIMENSIONS

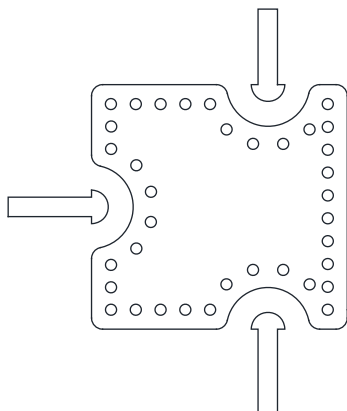


CASE SIZE	DIMENSIONS							
	A	B	C	D	E	F	G	H
1817	4.60 ± 0.10 (0.181 ± 0.004)	4.40 ± 0.10 (0.173 ± 0.004)	0.4 ± 0.127 (0.016 ± 0.005)	0.35 ± 0.20 (0.014 ± 0.008)	3.17 ± 0.10 (0.125 ± 0.004)	2.2 ± 0.10 (0.08 ± 0.004)	R0.75 ± 0.025 (0.03 ± 0.0001)	R0.3 ± 0.025 (0.012 ± 0.0001)

MECHANICAL SPECIFICATIONS

Substrate	Alumina
Technology	Thin film
Film	Nickel chromium
Termination	Sn over copper thin film

SUGGESTED LAND PATTERN



Vishay Sfernice designed for 0.38 mm (0.015") thick alumina substrate with MS topology. Wilkinson power dividers were designed to work with other report substrates as PCB materials when source impedances are matched to 50 Ω regarding the operating frequency range.

Check for adequate grounding beneath the part.

Notes

- Suggested land pattern: according to IPC-7351
- Dimension and tolerance of land pattern shall be defined by PCB designer; PCB can be designed according to IPC-7351A "Generic Requirements for Surface Mount Design and Land Pattern Standard"
- Please refer to Vishay Sfernice Application Note "Guidelines for Vishay Sfernice Resistive and Inductive Components" for soldering recommendation (www.vishay.com/doc?52029, section "3. Guidelines for Surface Mounting Components (SMD)", profile number 3 applies

GLOBAL PART NUMBER INFORMATION

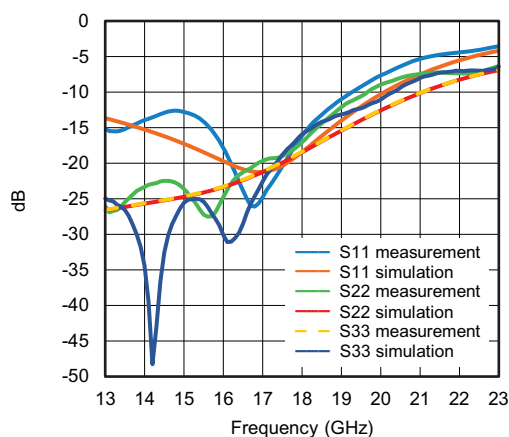
Global Part Numbering Example: WLKN-000W099

W	L	K	N	-	0	0	0	W	0	9	9
GLOBAL MODEL				REFERENCE			PACKAGING		OPTION		
WLKN				000 = assigned by Vishay			W = waffle pack, 49 min., 49 mult.		From 1 to 3 digits Leave blank if no option		

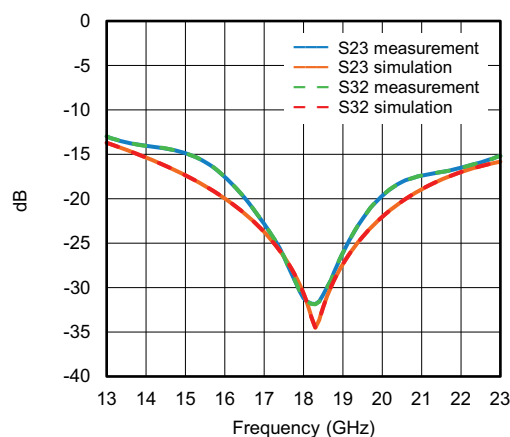


TYPICAL HIGH FREQUENCY PERFORMANCE

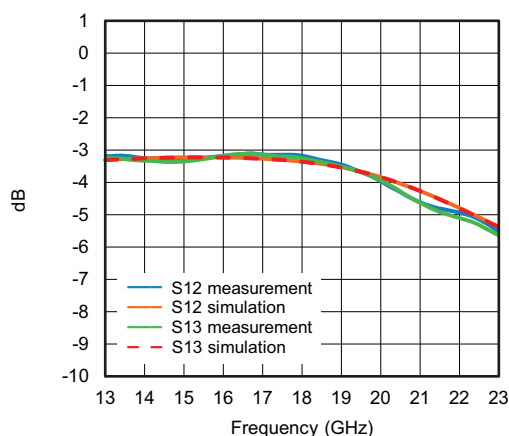
REFLEXION COEFFICIENTS



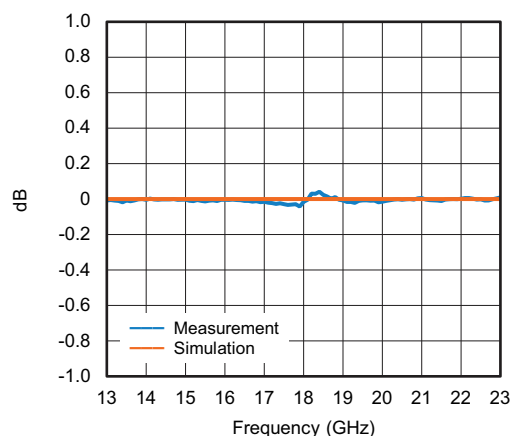
ISOLATION



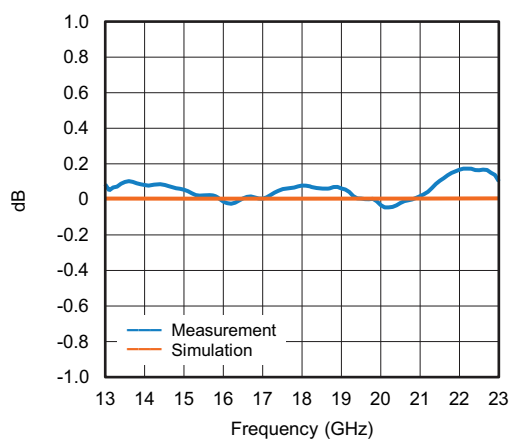
INSERTION LOSS



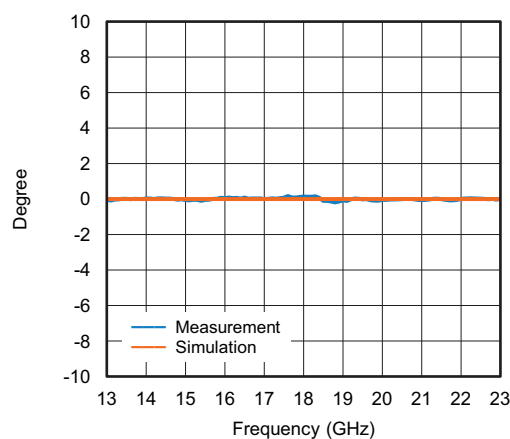
AMPLITUDE ISOLATION BALANCE



AMPLITUDE SPLITTING BALANCE



PHASE ISOLATION BALANCE





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