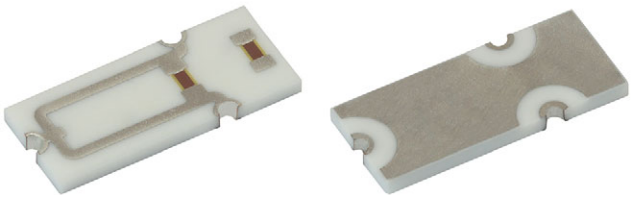
8 GHz to 12.5 GHz (2-Way) Wilkinson Power Divider / Combiner



LINKS TO ADDITIONAL RESOURCES

3D Models | S-Parameters | Simulation Tools

Vishay offers advanced 2-way Wilkinson power dividers engineered for broadband RF applications from **8 GHz to 12.5 GHz (-15 dB)** and **9.4 GHz to 12.5 GHz (-20 dB)**, centered at **10.5 GHz**. The integration of precision thin-film resistive elements with optimized transmission lines minimizes size while maximizing performance. Utilizing Vishay Sfernice's proprietary low-loss, thermally stable thin-film materials, these devices ensure superior isolation, low insertion loss, and excellent frequency stability. Tailored solutions are available to satisfy unique system and design requirements.

FEATURES

- 3-port high frequency splitter
- 8 GHz to 12.5 GHz (44 %) and 9.4 GHz to 11.5 GHz (20 %)
- -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

Pb-free Available

RoHS* Available

HALOGEN FREE Available

GREEN (5-2008) Available

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

STANDARD ELECTRICAL SPECIFICATIONS

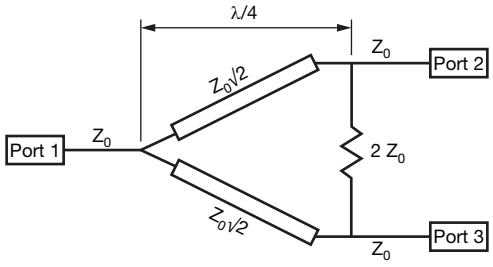
PARAMETER	LEVEL	MIN.	TYP.	MAX.
Return loss (matching)	-20 dB	9.4 GHz	-	11.5 GHz
	-15 dB	8 GHz	-	12.5 GHz
Insertion loss (transmission) (1)	-	-	0.25 dB	-
Isolation loss (outputs)	-20 dB	9 GHz	-	12.5 GHz
	-15 dB	8 GHz	-	13.5 GHz
Amplitude splitting balance	-	-	< 0.25 dB	-
Amplitude isolation balance	-	-	< 0.25 dB	-
Phase isolation balance	-	-	1°	-

Notes

- Specifications guaranteed when operated in a 50 Ω system

(1) Insertion loss = common port to output port insertion loss - 3 dB

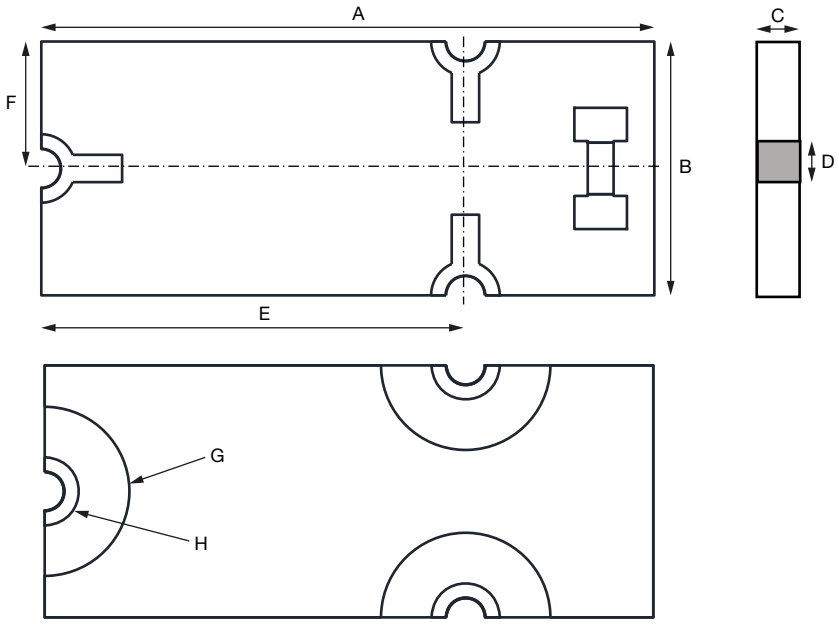
SCHEMATIC



For technical questions, contact: sferthinfilm@vishay.com

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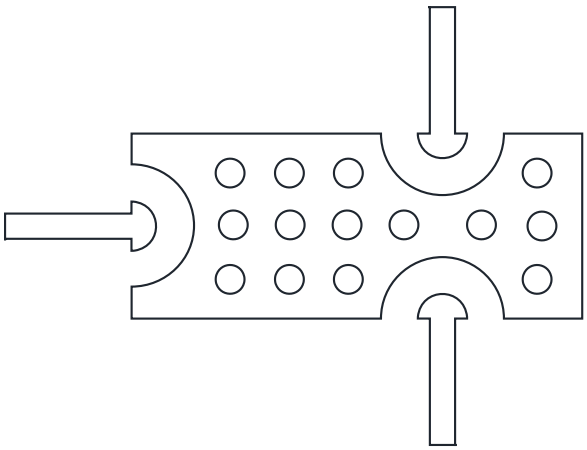
DIMENSIONS



CASE SIZE	DIMENSIONS							
	A	B	C	D	E	F	G	H
2209	5.39 ± 0.10 (0.212 ± 0.004)	2.23 ± 0.10 (0.087 ± 0.004)	0.4 ± 0.127 (0.016 ± 0.005)	0.35 ± 0.20 (0.014 ± 0.008)	3.73 ± 0.10 (0.147 ± 0.004)	1.12 ± 0.10 (0.044 ± 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	SnAg over copper thin film

SUGGESTED LAND PATTERN



Vishay Sfernice designed for 0.25 mm (0.01") thickness Ro3006 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

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PACKAGING

ESD packaging available: waffle-pack

PACKAGING RULES

Waffle Pack

Can be filled up to maximum quantity indicated in the table here above, taking into account the minimum order quantity. When quantity ordered exceeds maximum quantity of a single waffle pack, the waffle packs are stacked up on the top of each other and closed by one single cover.

To get "not stacked up" waffle pack in case of ordered quantity > maximum number of pieces per package: Please consult Vishay Sfernice for specific ordering code.

GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: WLKN-001W099

W	L	K	N	-	0	0	1	W	0	9	9

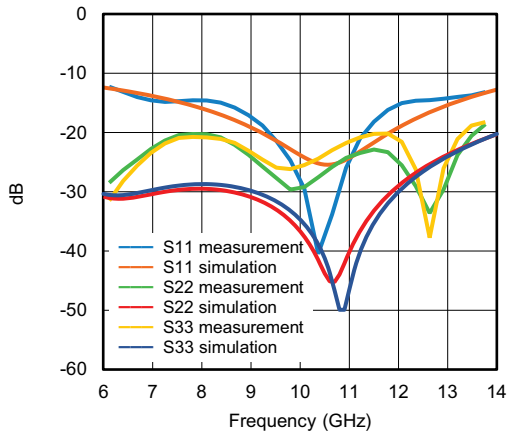
GLOBAL MODEL	REFERENCE	PACKAGING	OPTION
WLKN	**001** = assigned by Vishay	**W** = waffle pack, 78 min., 78 mult.	From 1 to 3 digits Leave blank if no option

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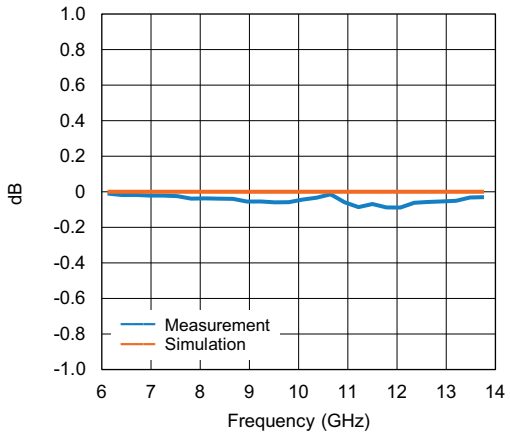
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TYPICAL HIGH FREQUENCY PERFORMANCE

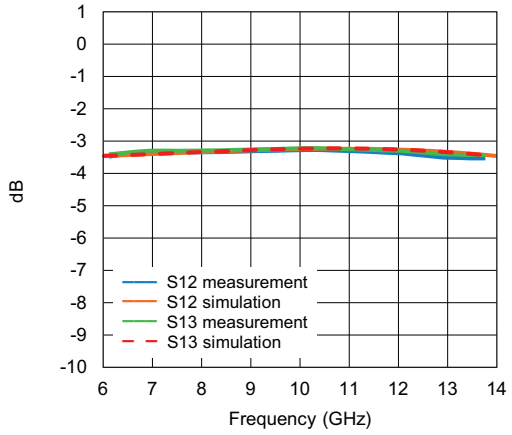
REFLEXION COEFFICIENTS



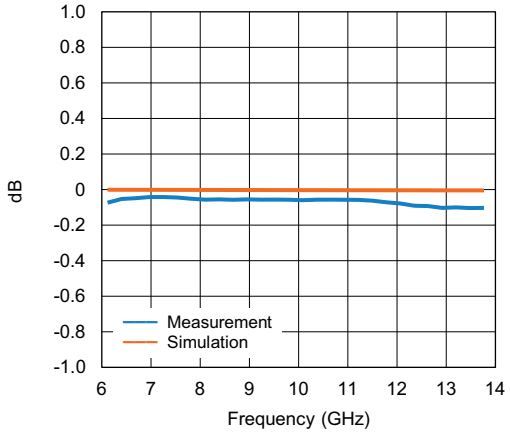
AMPLITUDE ISOLATION BALANCE



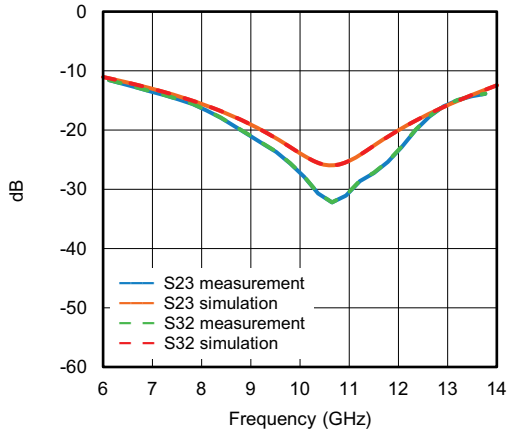
INSERTION LOSS



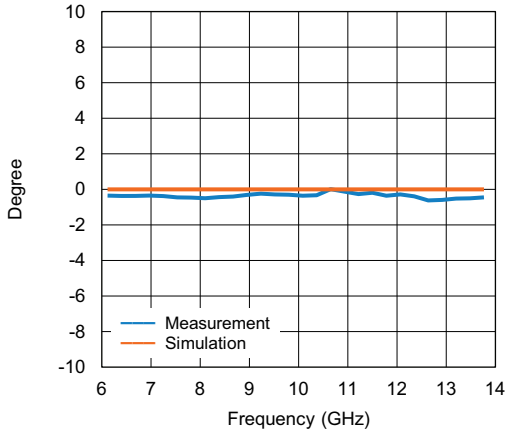
AMPLITUDE SPLITTING BALANCE



ISOLATION



PHASE ISOLATION BALANCE



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