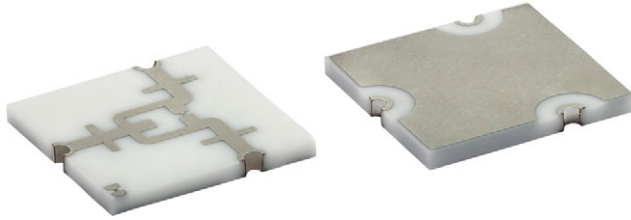


## 15 GHz to 20 GHz (2-Way) Wilkinson Power Divider / Combiner



### FEATURES

- 3-port high frequency splitter
- < -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](http://www.vishay.com/doc?99912)



**RoHS\***  
Available

**HALOGEN  
FREE**  
Available

**GREEN  
(5-2008)**  
Available

### LINKS TO ADDITIONAL RESOURCES



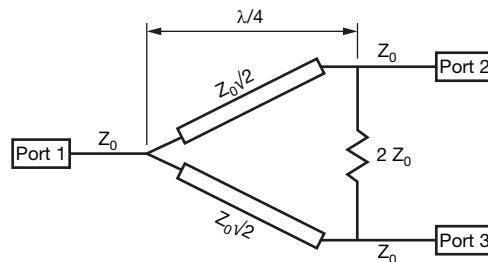
Vishay offers high performance 2-way Wilkinson power dividers ranging from 15 GHz to 20 GHz centered at 18 GHz. This device achieves a small package size due to the combination of an integrated resistor with lines. Additionally, minimum performance variation is achieved by taking advantage of low loss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

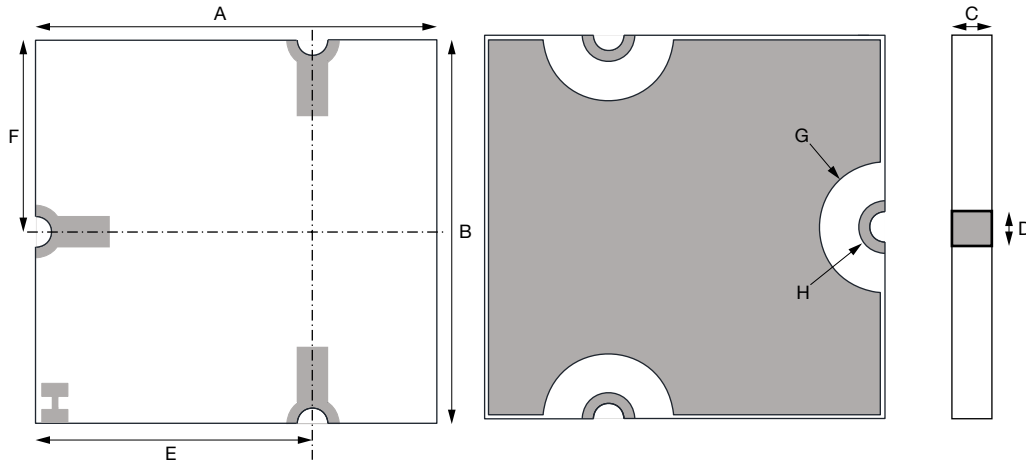
STANDARD ELECTRICAL SPECIFICATIONS				
PARAMETER	LEVEL	MIN.	TYP.	MAX.
Return loss	10 dB to 15 dB	15 GHz	-	19 GHz
Insertion loss (transmission) <sup>(1)</sup>	-	-	< 0.5 dB	19 GHz
Isolation loss (outputs)	-15 dB	15 GHz	-	23 GHz
	-20 dB	17 GHz	-	20 GHz
Amplitude splitting balance	-	-	< 0.25 dB	19 GHz
Amplitude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

#### Notes

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

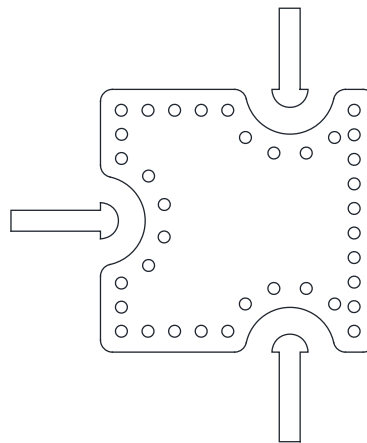
### SCHEMATIC



**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

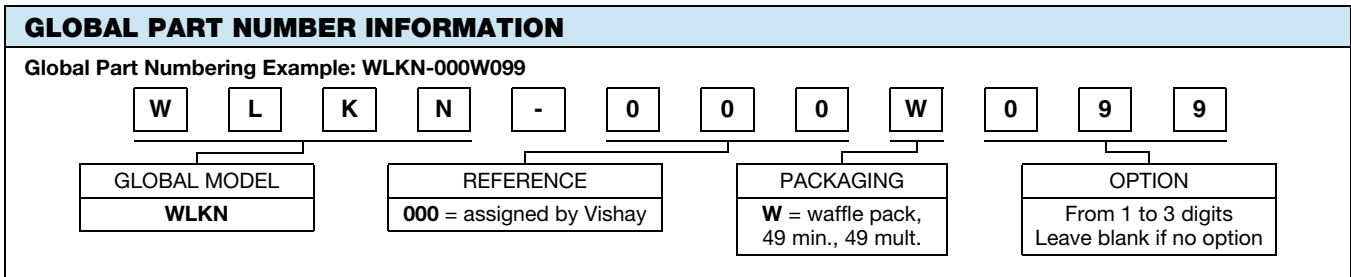
**SUGGESTED LAND PATTERN**


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.

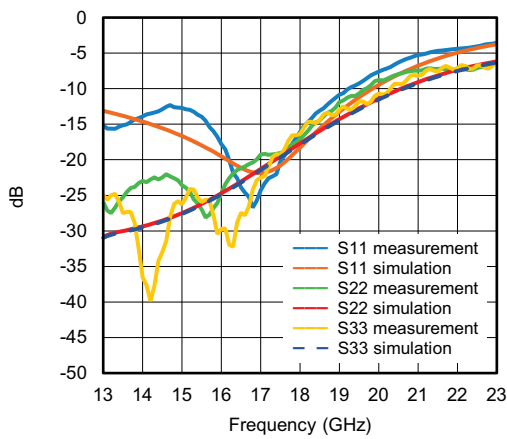
**Notes**

- 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](http://www.vishay.com/doc?52029), section "3. Guidelines for Surface Mounting Components (SMD)", profile number 3 applies

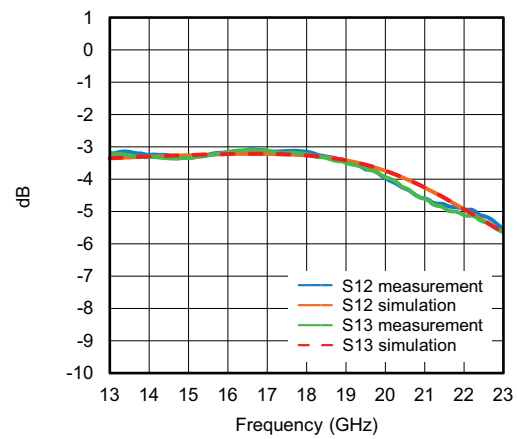


**TYPICAL HIGH FREQUENCY PERFORMANCE**

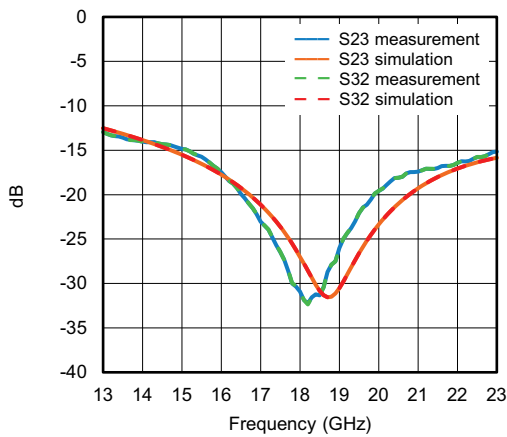
**REFLEXION COEFFICIENTS**



**INSERTION LOSS**



**ISOLATION**





## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.