

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



### FEATURES

- 15 GHz to 20 GHz (2-way) power divider / combiner
- < -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  $\Omega$
- **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



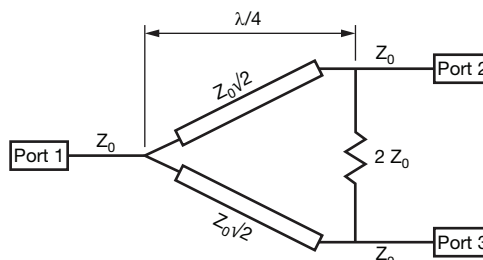
Vishay offers high performance 2-way Wilkinson power dividers ranging from 15 GHz to 20 GHz centered at 18 GHz. This device achieves a small package size due to the combination of an integrated resistor with lines. Additionally, minimum performance variation is achieved by taking advantage of low loss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

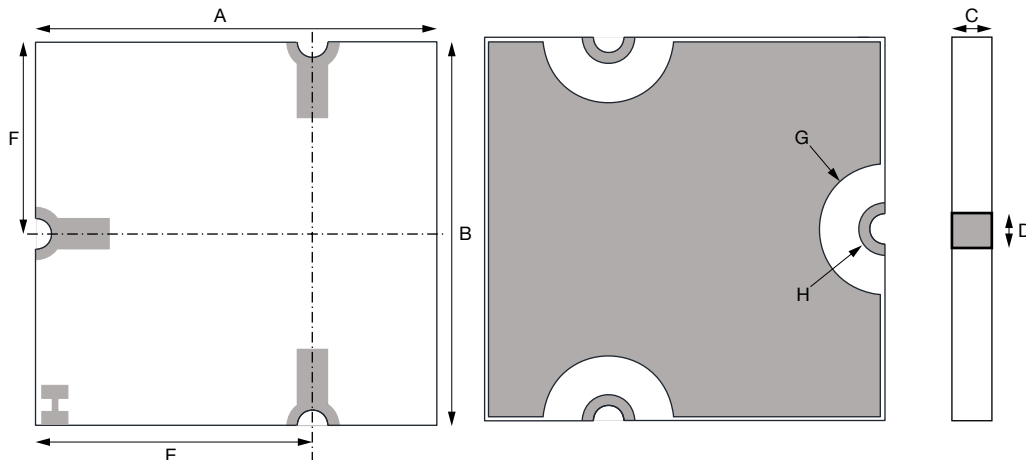
### Notes

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

### SCHEMATIC



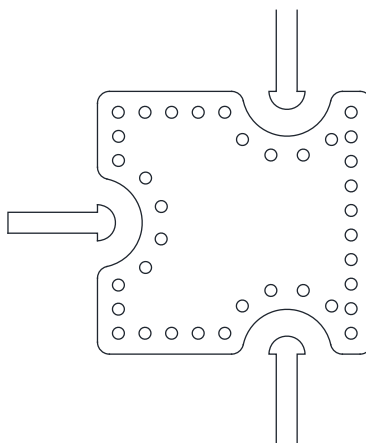
## DIMENSIONS



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



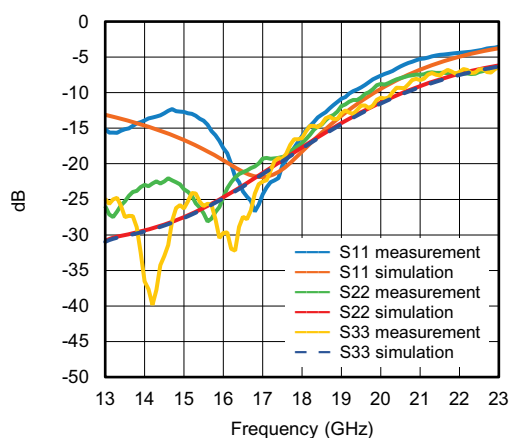
## GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: WLKN-000W099

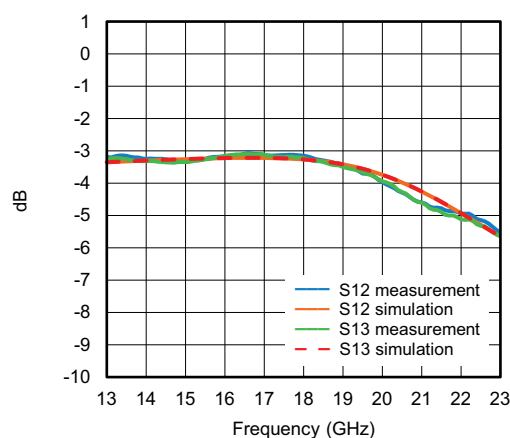
W	L	K	N	-	0	0	0	W	0	9	9
GLOBAL MODEL				REFERENCE			PACKAGING		OPTION		
WLKN				000 = assigned by Vishay			W = waffle pack, 49 min., 49 mult.		From 1 to 3 digits Leave blank if no option		

## TYPICAL HIGH FREQUENCY PERFORMANCE

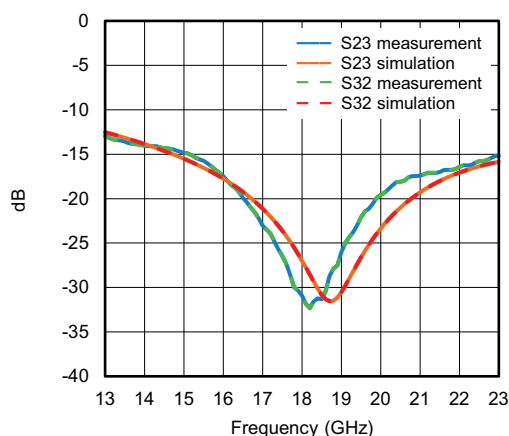
### REFLEXION COEFFICIENTS



### INSERTION LOSS



### ISOLATION





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