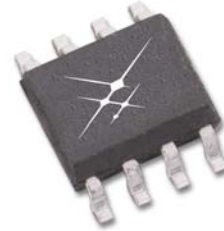


DATA SHEET

# PD4W18-12, PD4W18-12LF: Four-Way 0° Power Splitter Combiner 1.71–1.99 GHz

## Features

- Low cost
- Low profile
- Available in small SOIC-8 package
- Available on tape and reel
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020



## Description

The PD4W18-12 is a monolithic four-way in-phase hybrid junction tuned for the 1.71–1.99 GHz band. It offers low loss, high isolation, good input/output matching and exceptional phase/amplitude balance. It is available in the SOIC-8 leaded surface mount package.

**NEW**

Skyworks offers lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant packaging.

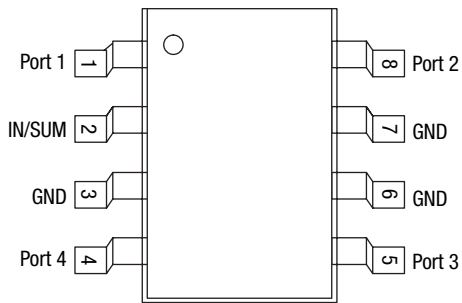


**Electrical Specifications at 25 °C**

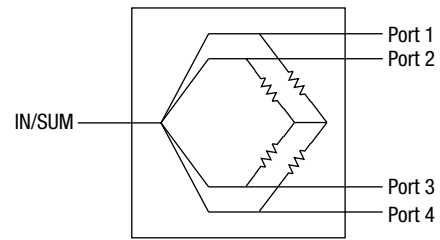
**Z<sub>0</sub> = 50 Ω**

Parameter	Min.	Typ.	Max.	Unit
Frequency	1.71		1.99	GHz
Insertion Loss Less 6 dB split		0.7	1	dB
Isolation	18	25		dB
Input VSWR		1.6:1	1.8:1	
Output VSWR		1.2:1	1.5:1	
Amplitude balance		±0.3	±0.4	dB
Phase balance		±5	±9	Deg.

**Pin Out**

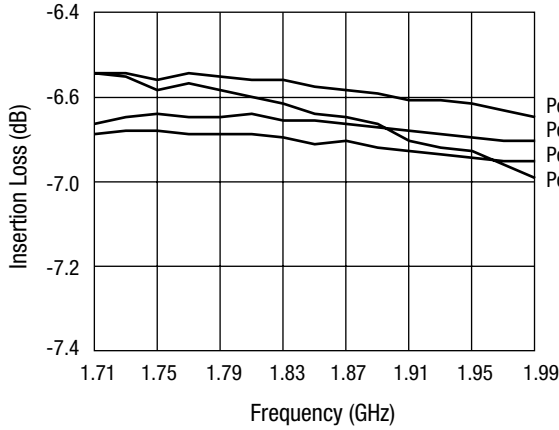


**Block Diagram**

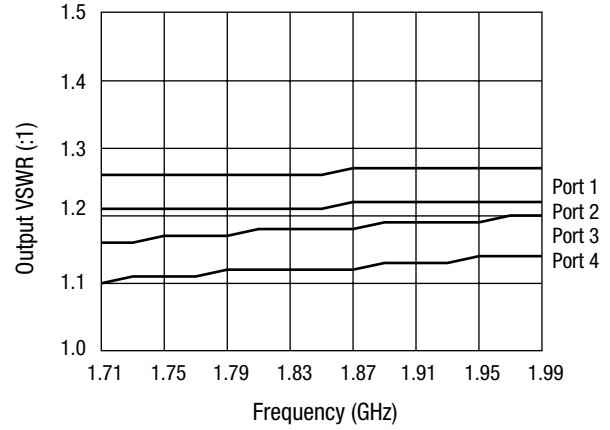


**Typical Performance Data**

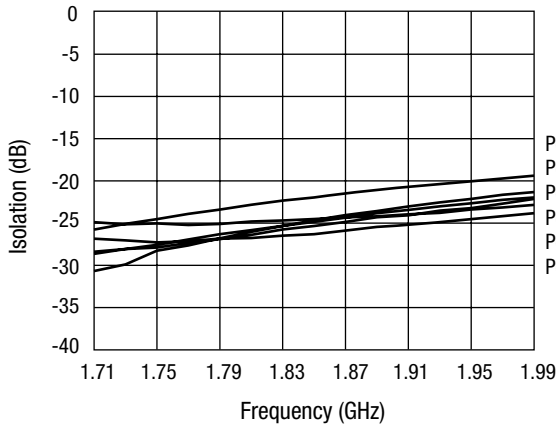
**$Z_0 = 50 \Omega$**



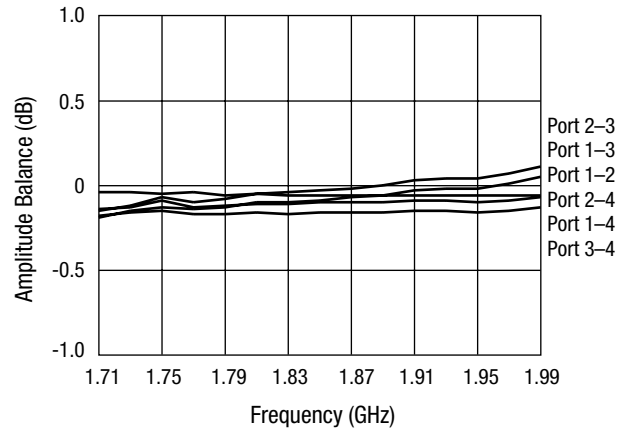
**Insertion Loss vs. Frequency**



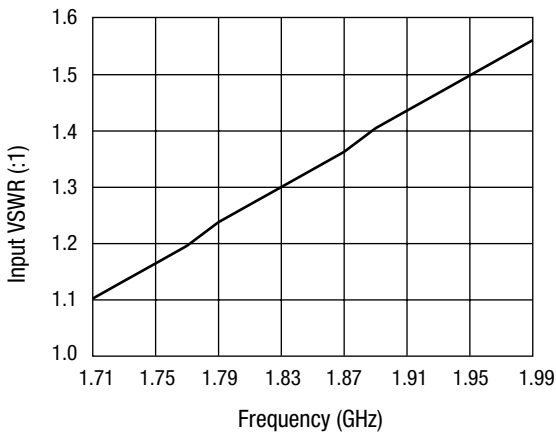
**Output VSWR vs. Frequency**



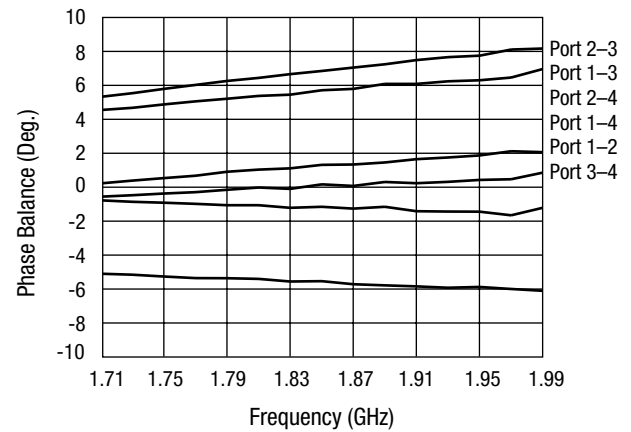
**Isolation vs. Frequency**



**Amplitude Balance vs. Frequency**



**Input VSWR vs. Frequency**



**Phase Balance vs. Frequency**

### Absolute Maximum Ratings

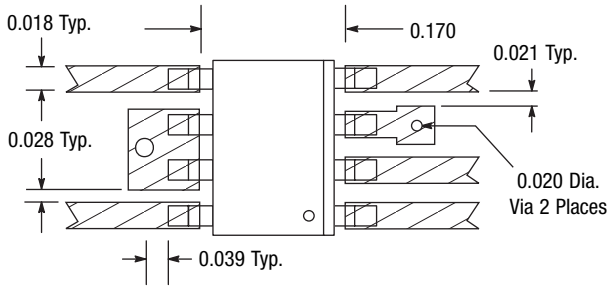
Characteristic	Value
Input power <sup>(1)</sup>	1.5 W CW
Input power <sup>(2)</sup>	375 mW CW
Operating temperature	-40 °C to +85 °C
Storage temperature	-65 °C to +150 °C

1. When used as a power divider with a 2.0:1 Max. VSWR on all ports.  
 2. When used as a power combiner with 2.0:1 Max. VSWR on all ports.

Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

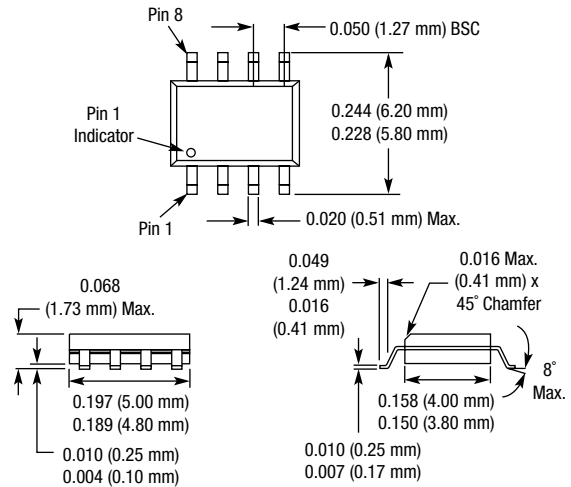
**CAUTION:** Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

### Board Layout



Material is 10 mil FR4

### SOIC-8



### Recommended Solder Reflow Profiles

Refer to the [“Recommended Solder Reflow Profile”](#) Application Note.

### Tape and Reel Information

Refer to the [“Discrete Devices and IC Switch/Attenuators Tape and Reel Package Orientation”](#) Application Note.

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