

DATA SHEET

PD4W18-12, PD4W18-12LF: Four-Way 0° Power Splitter Combiner 1.65–2.45 GHz

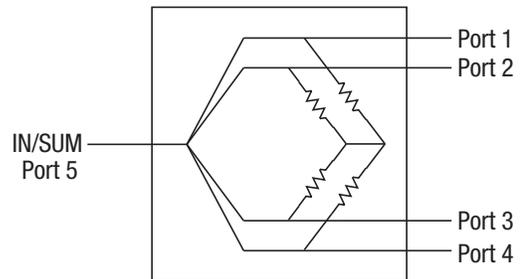
Features

- Broadband: 1.65–2.45 GHz
- Low insertion loss
- Available in small SOIC-8 package or lead (Pb)-free, RoHS-compliant package

Description

The PD4W18-12 is a monolithic four-way in-phase hybrid junction optimized for the 1.71–1.99 GHz band that performs very well from 1.65–2.45 GHz. It offers low loss, high isolation, good input and output impedance matching and exceptional phase and amplitude balance. It is available in the SOIC-8 package and a lead (Pb)-free SOIC-8 package.

Functional Block Diagram



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



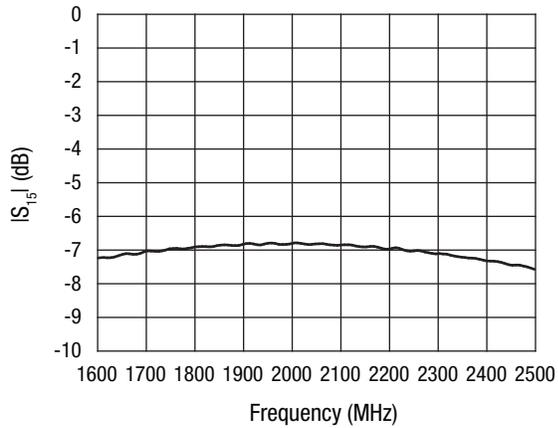
Electrical Specifications at 25 °C

Z₀ = 50 Ω, T = 25 °C, unless otherwise noted

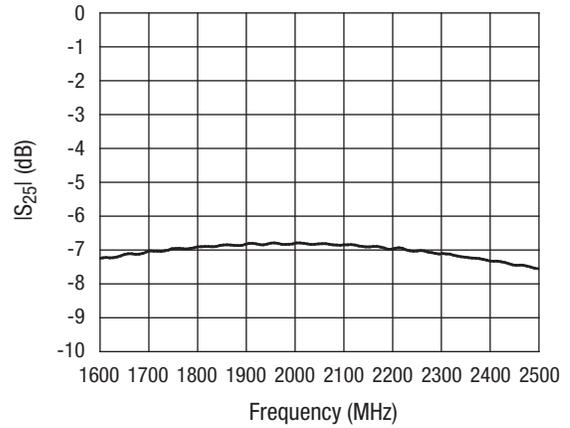
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Operating frequency			1.65		2.45	GHz
Insertion loss	In excess of 6 dB split loss	1.71–2.20 GHz		0.7	1.0	dB
Isolation		1.71–2.20 GHz	18	25		dB
Input VSWR	Port 5	1.71–2.20 GHz		1.6:1	1.8:1	
Output VSWR	Ports 1, 2, 3 and 4	1.71–2.20 GHz		1.2:1	1.5:1	
Amplitude balance		1.71–2.20 GHz		0.3	0.4	dB
Phase balance		1.71–2.20 GHz		5	10	degree

Typical Performance Data

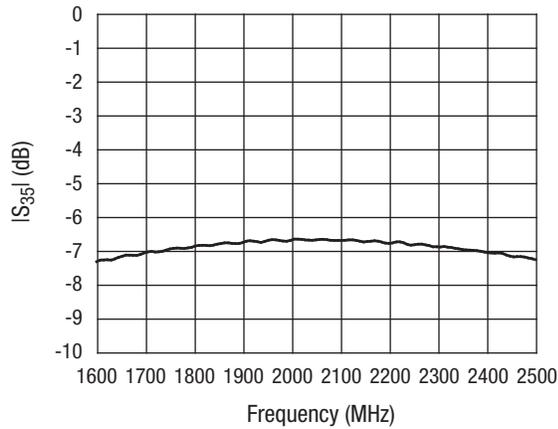
$Z_0 = 50 \Omega$, $T = 25 \text{ }^\circ\text{C}$, unless otherwise noted



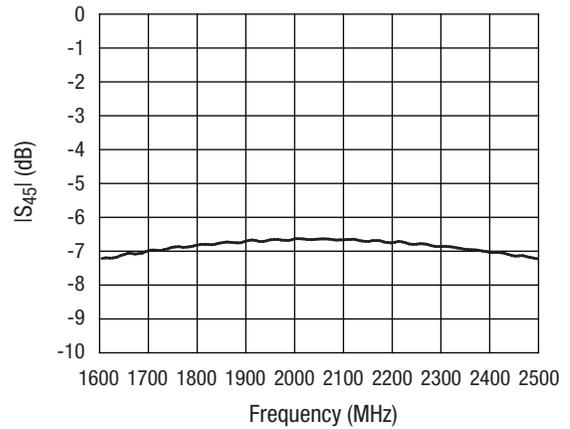
Insertion Loss—Port 1 to In/Sum Port



Insertion Loss—Port 2 to In/Sum Port



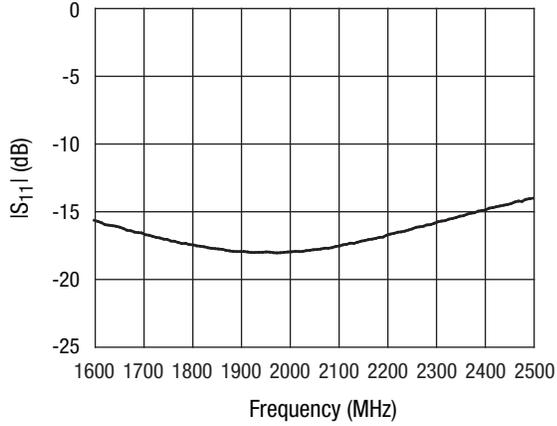
Insertion Loss—Port 3 to In/Sum Port



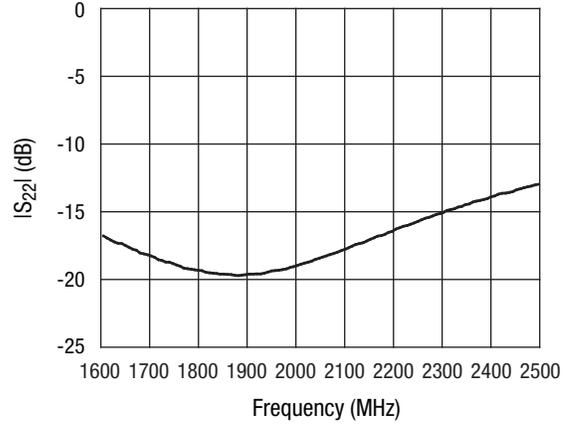
Insertion Loss—Port 4 to In/Sum Port

Typical Performance Data

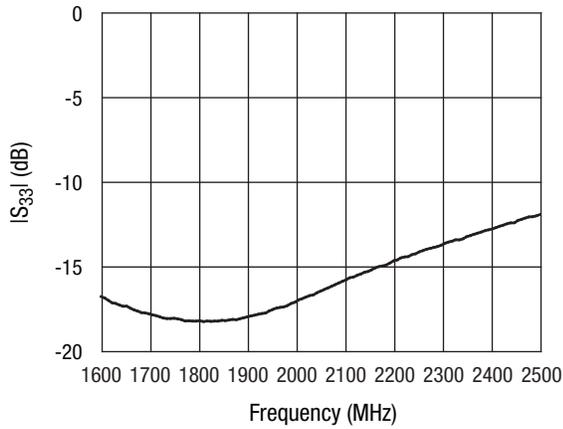
$Z_0 = 50 \Omega$, $T = 25 \text{ }^\circ\text{C}$, unless otherwise noted



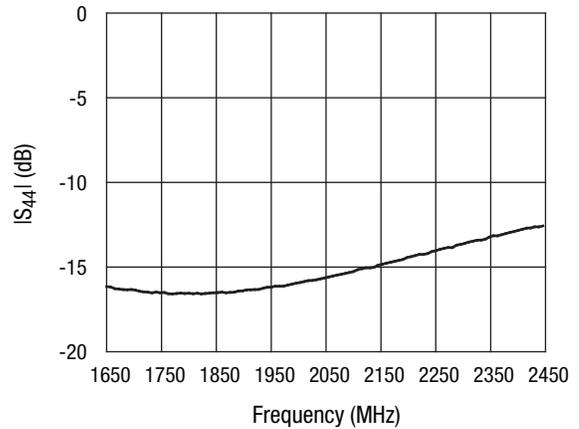
Input Return Loss—Port 1



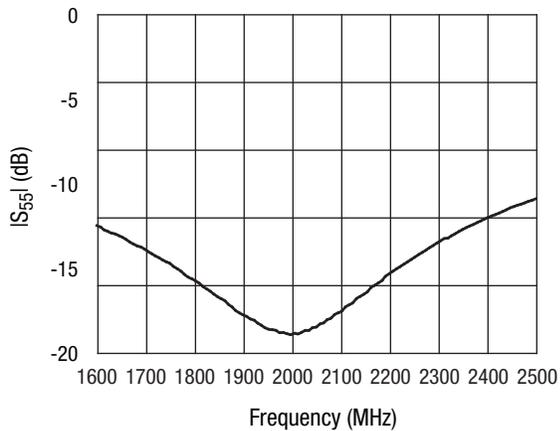
Input Return Loss—Port 2



Input Return Loss—Port 3



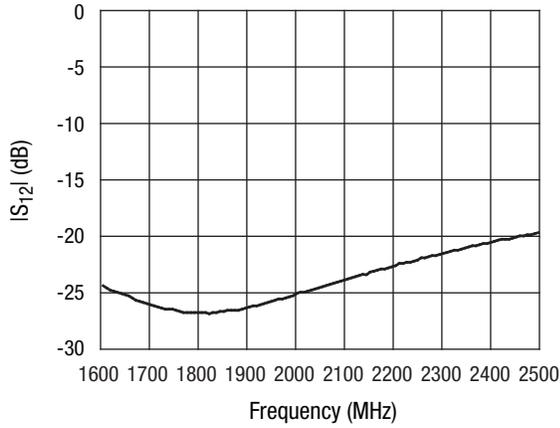
Input Return Loss—Port 4



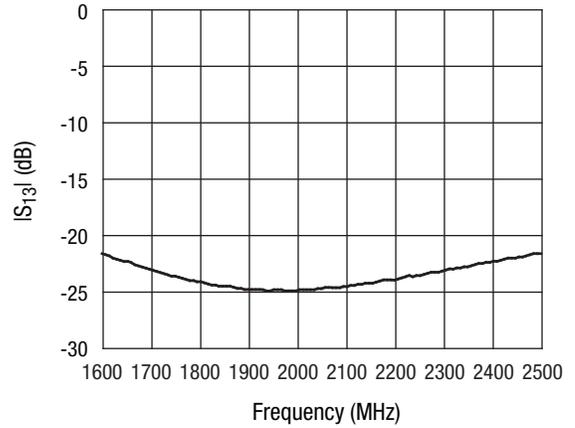
Input Return Loss—In/Sum Port

Typical Performance Data

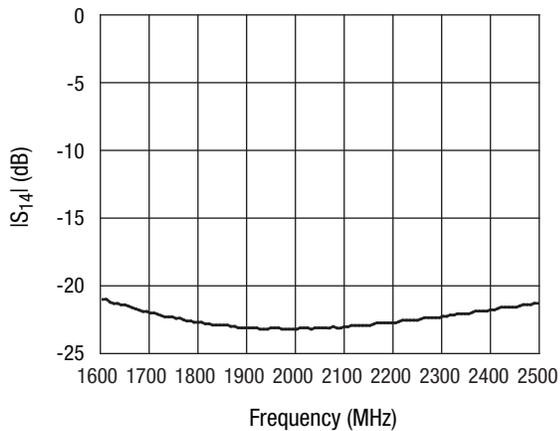
$Z_0 = 50 \Omega$, $T = 25 \text{ }^\circ\text{C}$, unless otherwise noted



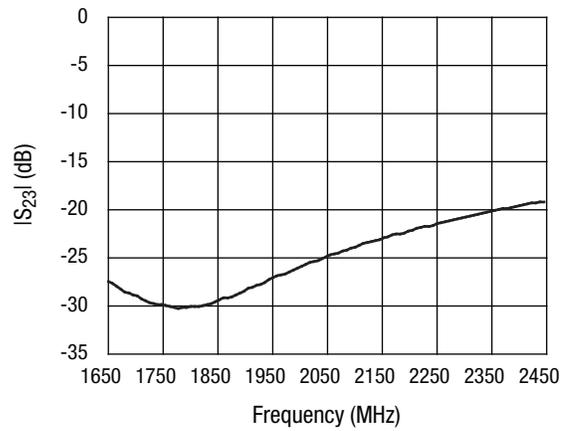
Isolation—Port 1 to Port 2



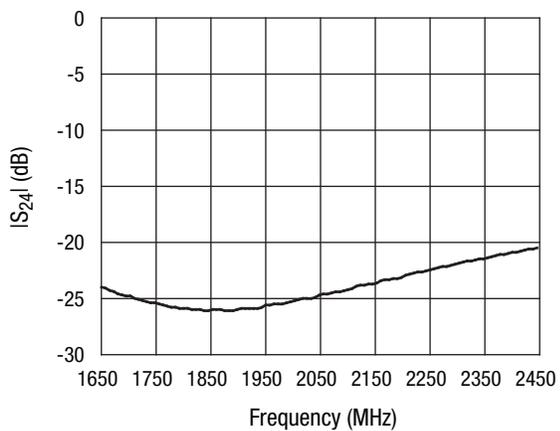
Isolation—Port 1 to Port 3



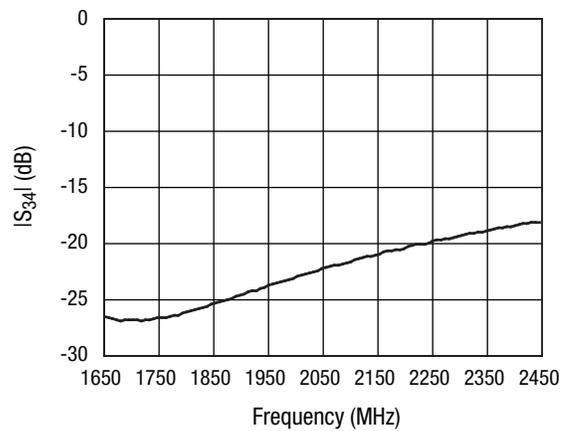
Isolation—Port 1 to Port 4



Isolation—Port 2 to Port 3



Isolation—Port 2 to Port 4



Isolation—Port 3 to Port 4

Absolute Maximum Ratings

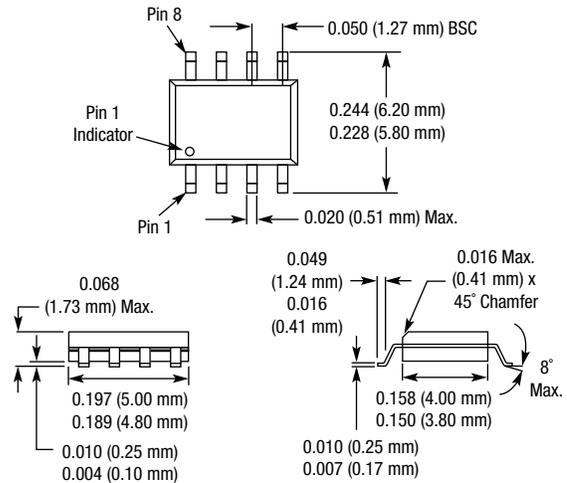
Characteristic	Value
RF input power ⁽¹⁾	1.5 W
RF input power ⁽²⁾	375 mW
Operating temperature	-40 °C to +85 °C
Storage temperature	-65 °C to +150 °C

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.

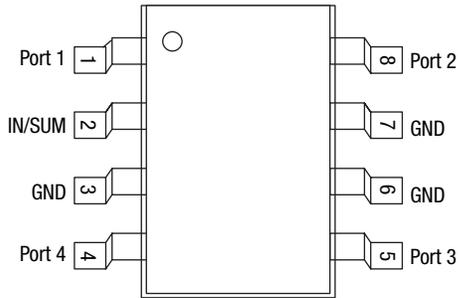
SOIC-8



Recommended Solder Reflow Profiles

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

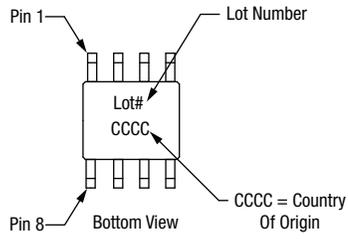
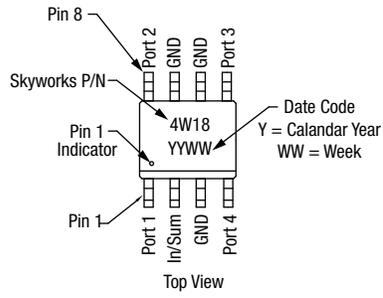
Pin Out (Top View)



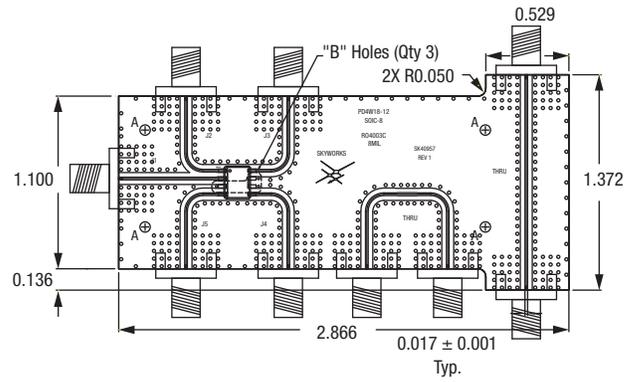
Tape and Reel Information

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

Part Marking



Evaluation Board



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