

# Wideband Power Divider, Packaged, 2 - 18 GHz



ENGPD00014-SM

Rev. V1

## Features

- Wideband Performance
- Excellent Return Loss: 16 dB
- RF Power Handling: 27 dBm
- Excellent Balance
- Small Size:
  - 5 x 5 x 1.27 mm
  - 0.197 x 0.197 x 0.050 inch
- RoHS\* Compliant

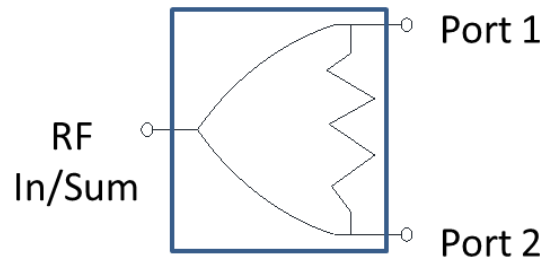
## Applications

- Space Hybrids
- Military Hybrids
- Microwave Radios
- Test & Measurement Systems

## Description

The ENGPD00014-SM is a two-way, in-phase Wilkinson-style power splitter / combiner. The device is optimized for performance from 2 to 18 GHz and has a usable bandwidth from 1 to 20 GHz. The device offers excellent return loss, high isolation, and small size. It has excellent amplitude and phase balance. The power splitter is packaged in a 5 mm QFN suitable for SMT solder attach to a PCB. The power splitter can handle up to a half watt RF input power levels.

## Functional Schematic



## Ordering Information

Part Number	Package
ENGPD00014-SM	

\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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## Electrical Specifications: Freq. = 2 - 18 GHz, T<sub>A</sub> = +25°C

Parameter	Units	Min.	Typ.	Max.
Insertion Loss	dB	0.4	1.0	2.0
Input Return Loss	dB	12	16	—
Output Return Loss	dB	12	16	—
Isolation	dB	12	16	—
Amplitude Balance	dB	—	+0.1 / -0.1	+0.2/-0.2
Phase Balance	Deg	—	+1.0 / -1.0	+3.5 / -3.5
Power Handling	dBm	—	—	27

## Absolute Maximum Ratings<sup>5,6</sup>

Parameter	Absolute Maximum
RF Input Power	28 dBm
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

## Handling Procedures

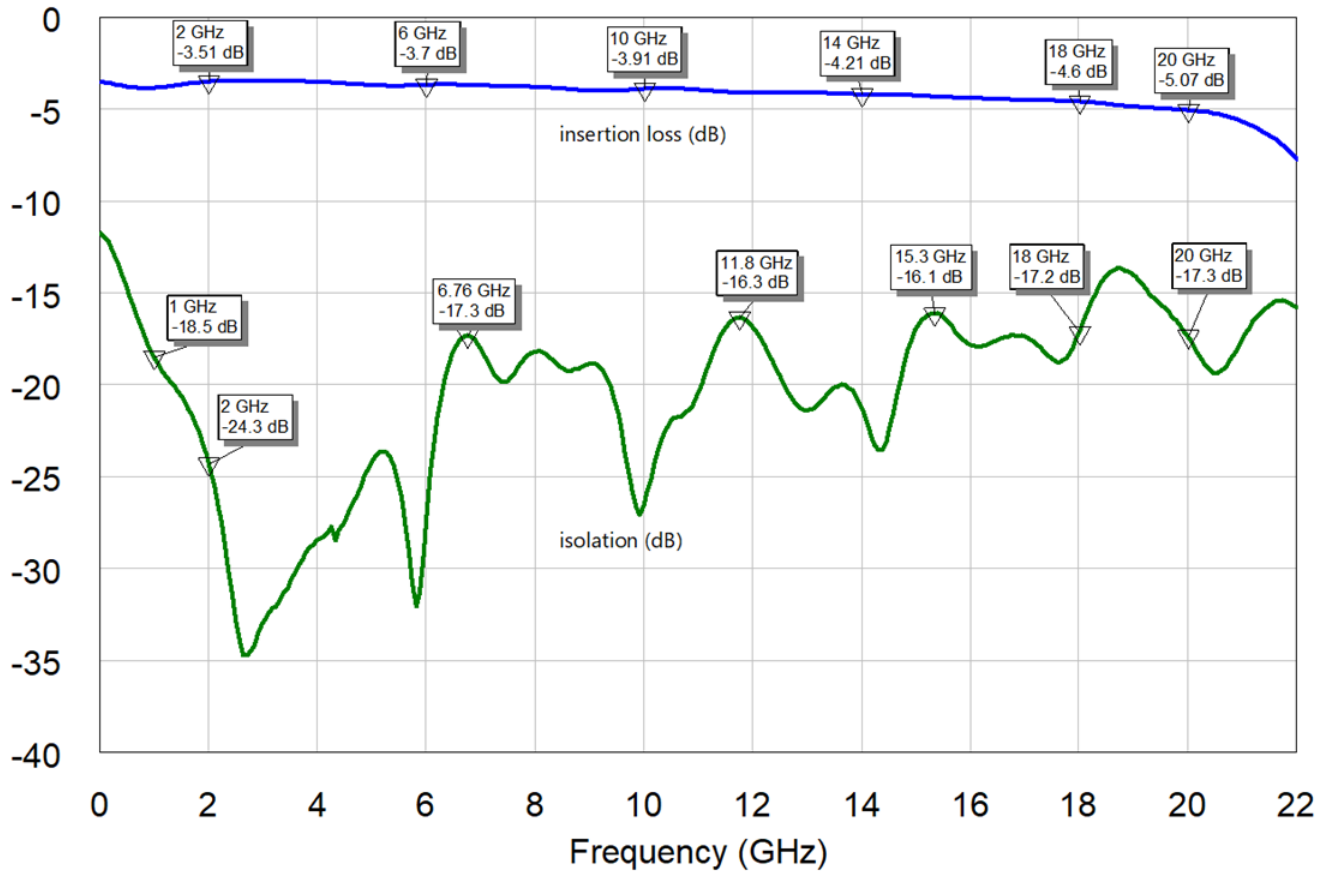
Please observe the following precautions to avoid damage:

### Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

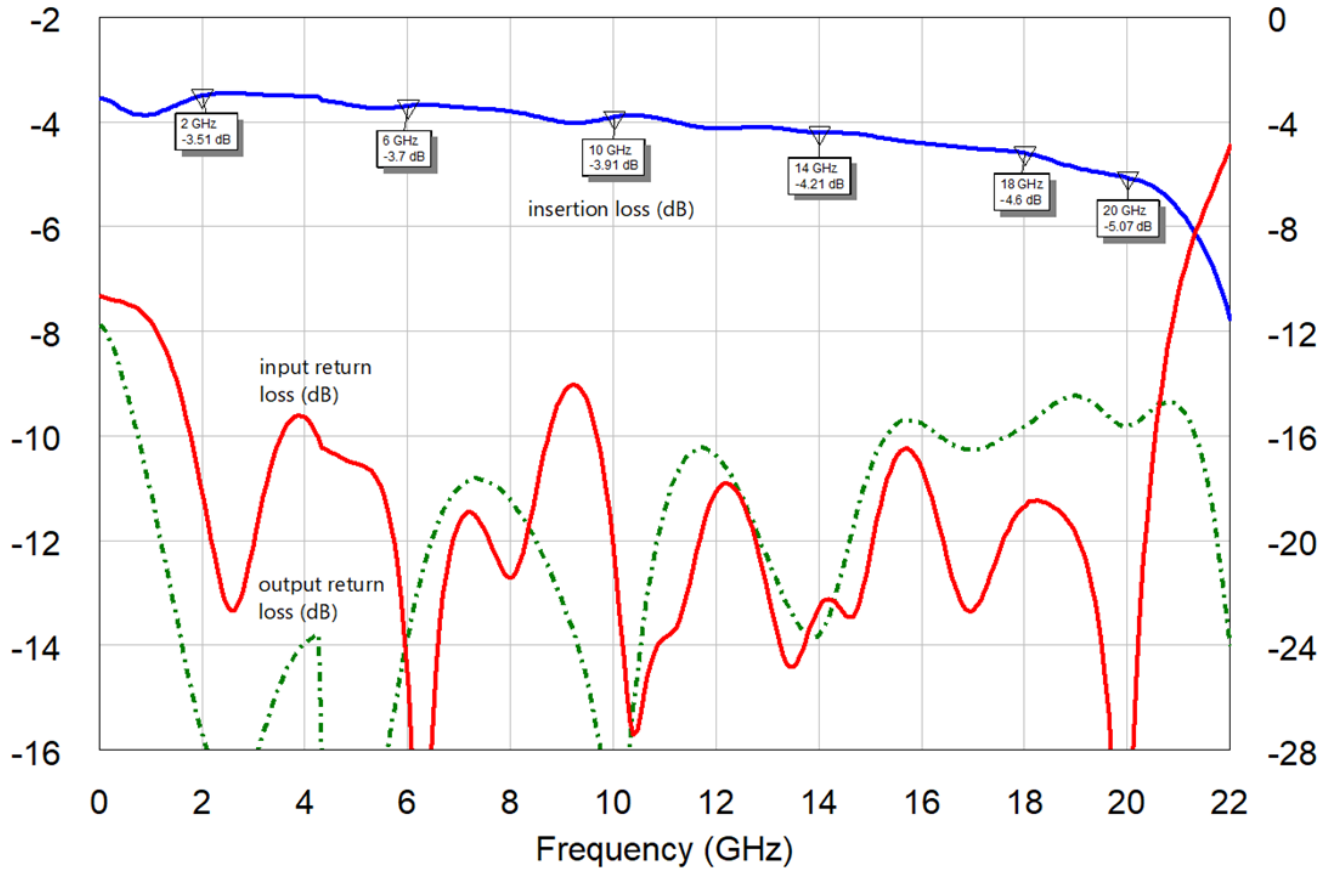
Typical Performance Curves

RF Insertion Loss & Isolation Between Output Ports



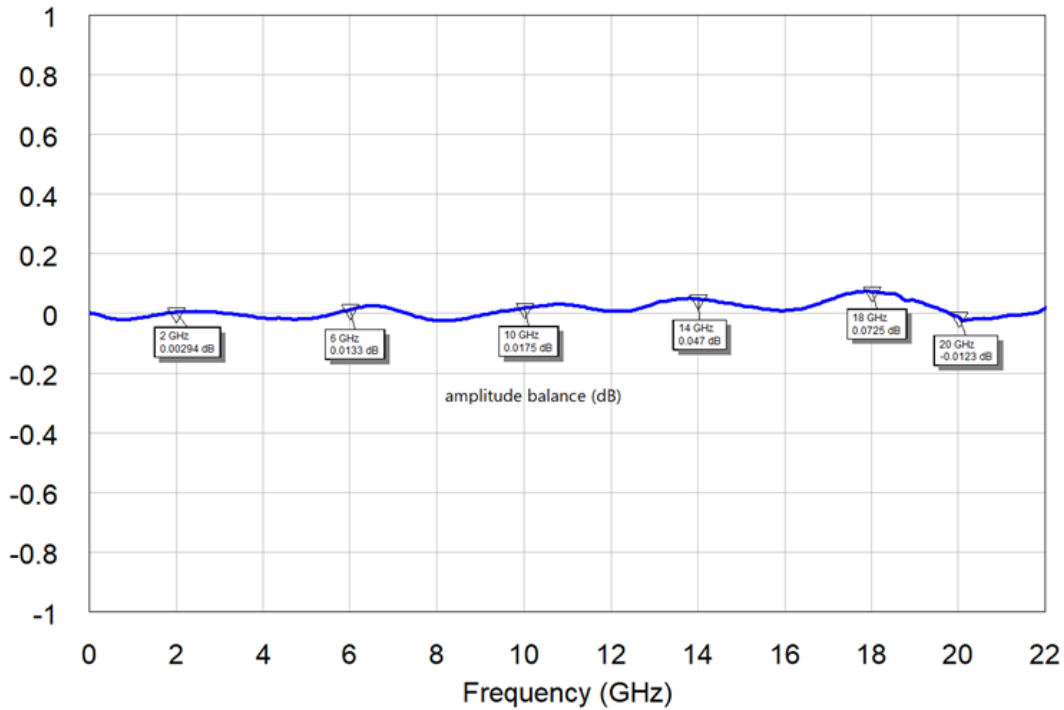
Typical Performance Curves

RF Insertion Loss & In and Out Return Loss

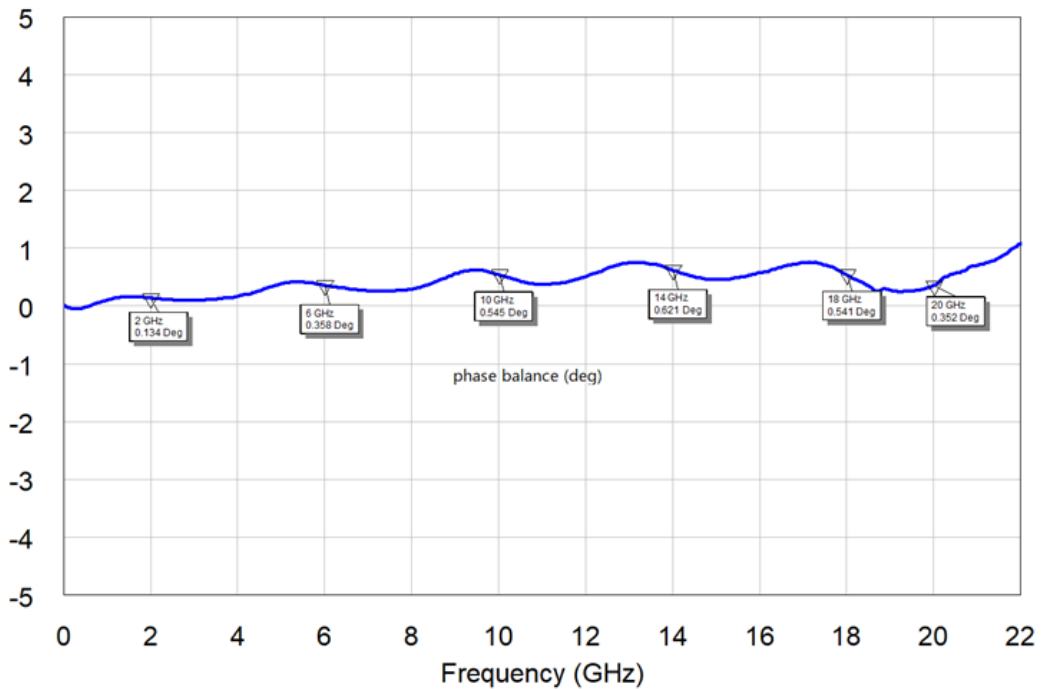


Typical Performance Curves

Amplitude Balance Between Output Ports



Phase Balance Between Output Ports



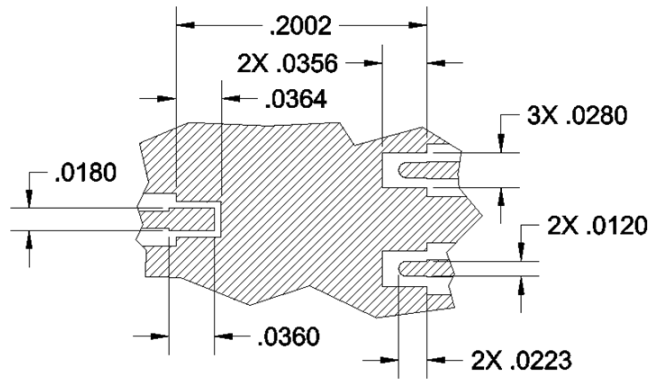
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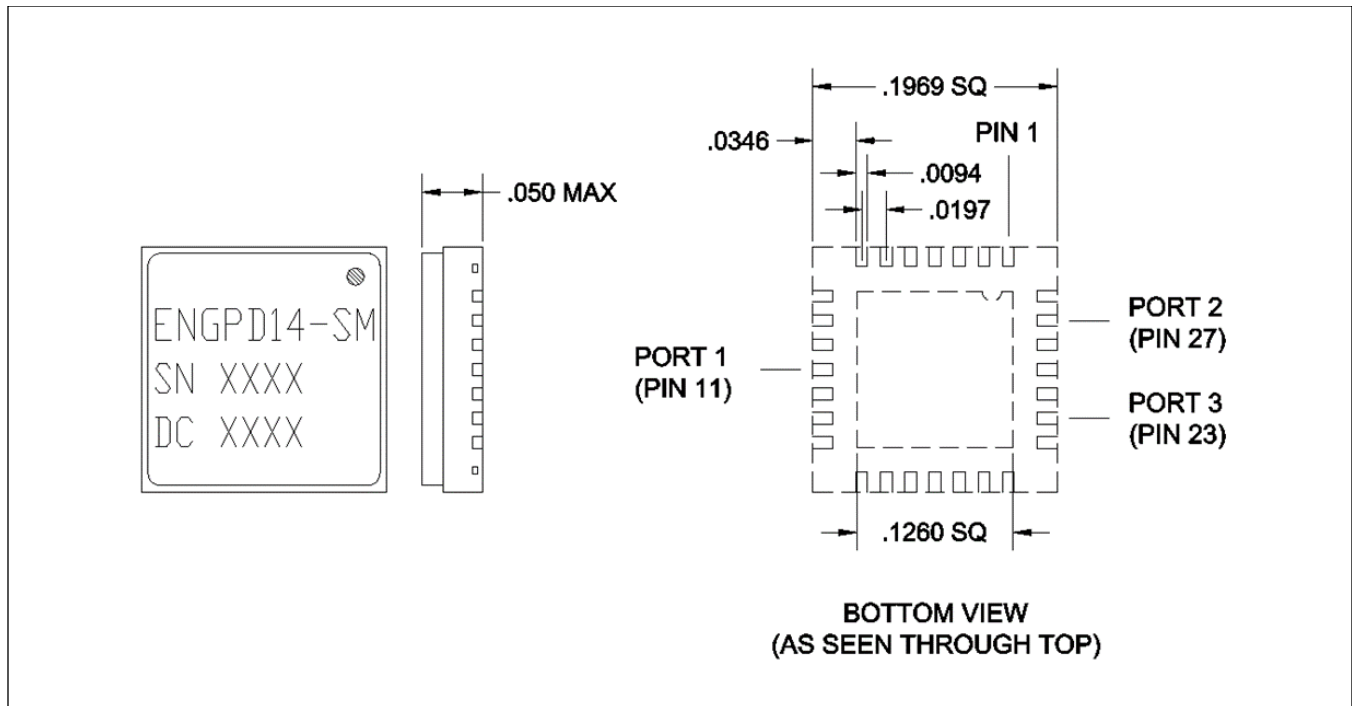
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**Recommended Copper Layer 1 with 0.006" DK 3 Dielectric**



## Outline Drawing



All dimensions are given in inches.  
View of package footprint as seen from top through part.  
Lead finish is nickel gold.  
Connect all unused pads and center paddle to ground plane.

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