Wideband Power Divider, Packaged
0.8 - 4 GHz

ENGPD00322A-SM
Rev. V1

Features

- Wideband Performance
- Excellent Return Loss: 20 dB
- RF Power Handling: 15 W CW & 200 W Pulsed
- Excellent Balance
- Small Size:
  9 x 9 x 1.5 mm
  0.354 x 0.354 x 0.060 inch
- RoHS* Compliant

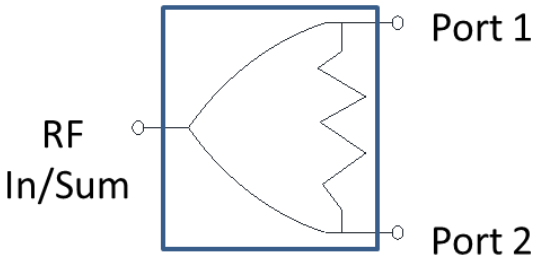
Applications

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

Description

The ENGPD00322A-SM is a two-way, in-phase Wilkinson-style power splitter / combiner. The device is optimized for performance from 0.8 to 4 GHz. The chip device offers excellent return loss, high isolation, and small size. The power divider is packaged into a plastic QFN form factor for easy solder assembly. Distributed resistors with low temperature coefficients are set up to handle 200 W pulsed RF input power levels into significant mismatch.

Functional Schematic



Ordering Information

Part Number	Package
ENGPD00322A-SM	

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

Electrical Specifications: Freq. = 0.8 - 4.0 GHz, T_A = +25°C

Parameter	Conditions	Units	Min.	Typ.	Max.
Insertion Loss	0.8 - 3.0 GHz 3.0 - 4.0 GHz	dB	—	1.00 1.35	1.3 1.6
Input Return Loss	—	dB	14	18	—
Output Return Loss	—	dB	14	20	—
Isolation	0.8 GHz	dB	14	20	—
Amplitude Balance	—	dB	—	-1	-1
Phase Balance	—	Deg	—	-1	-1
Power Handling	CW Pulsed Width = 2 µs, Duty Cycle = 5%, 1 - 4 GHz	W	—	—	15 200

Absolute Maximum Ratings[1,2]

Parameter	Absolute Maximum
RF Input Power	53 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

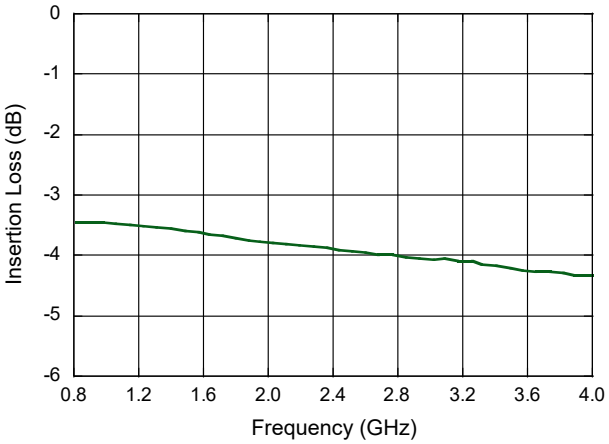
Please observe the following precautions to avoid damage:

Static Sensitivity

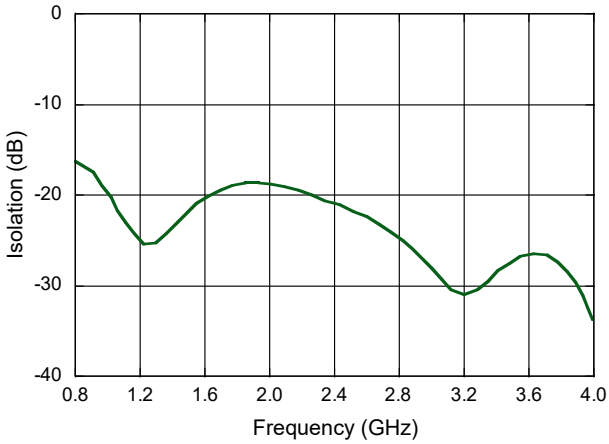
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Typical Performance Curves

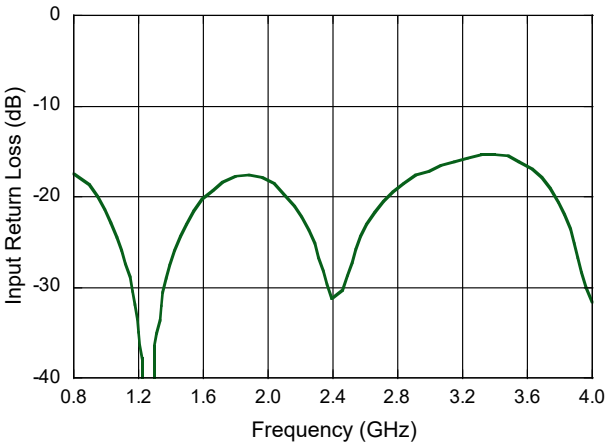
Insertion Loss



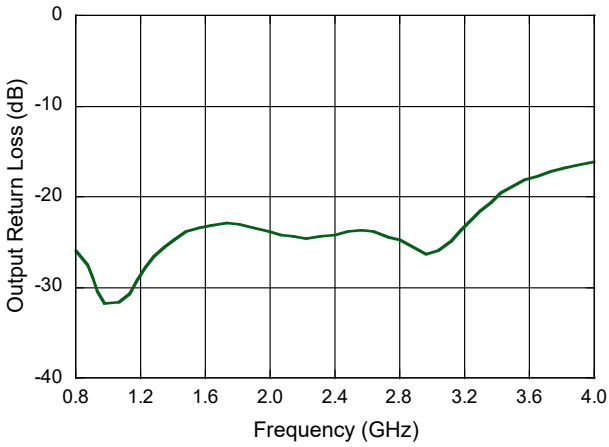
Isolation Between Output Ports



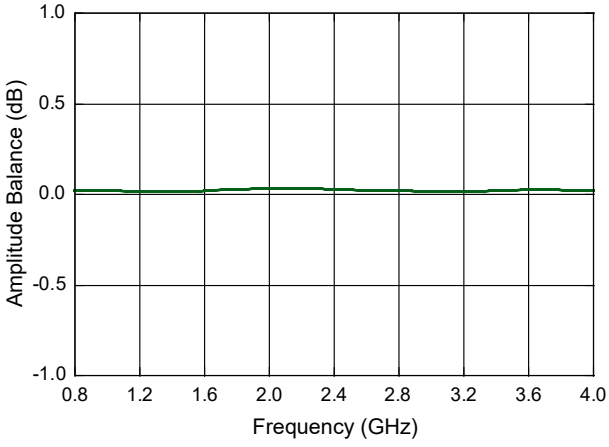
Input Return Loss



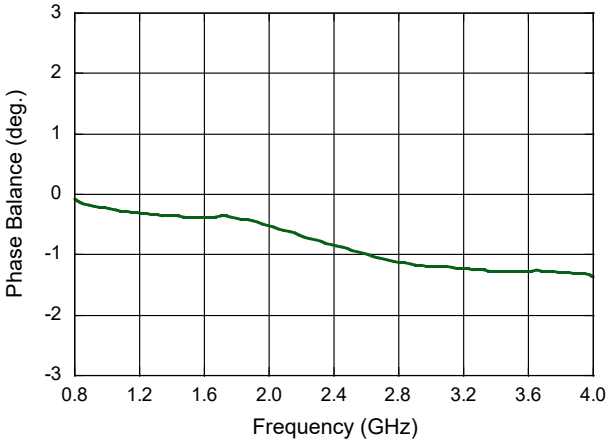
Output Return Loss



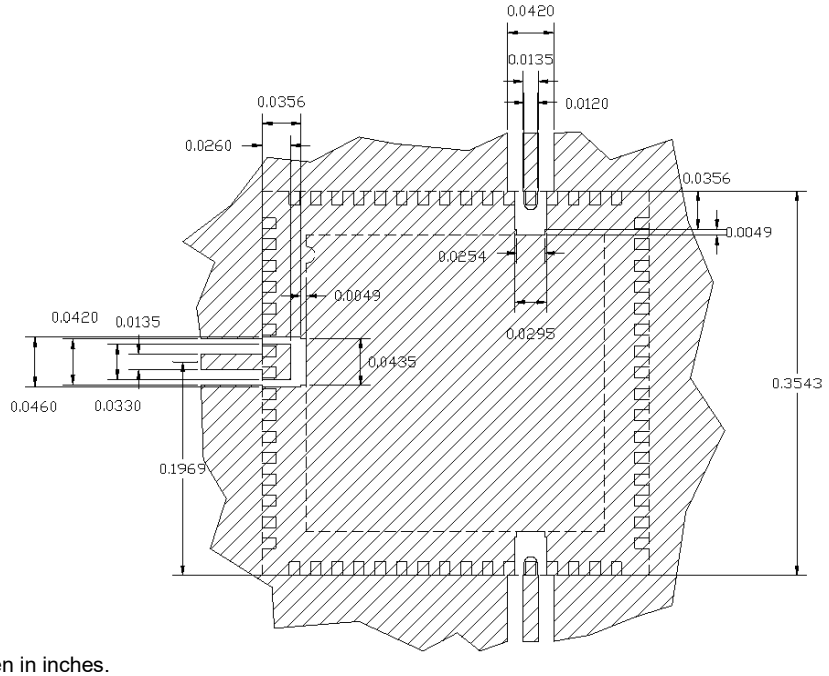
Amplitude Balance



Phase Balance

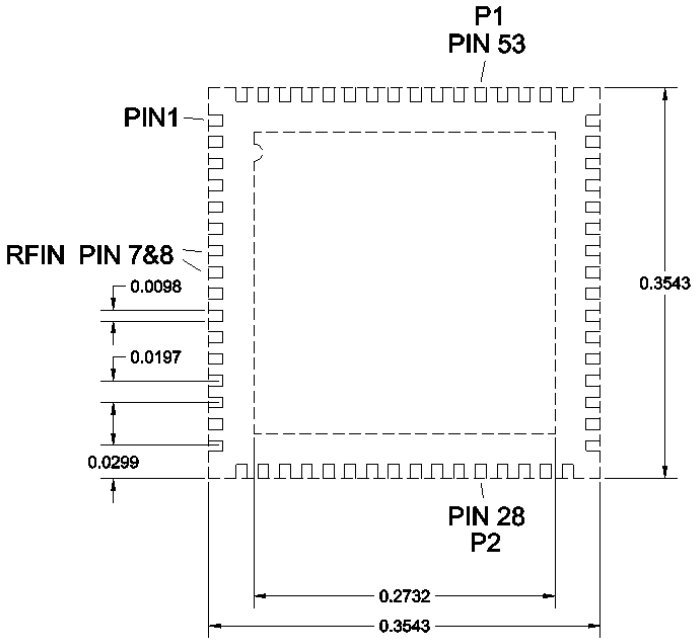


Recommended Copper Layer 1 Footprint



All dimensions are given in inches.
Dimensions assume 6 mil thick Isola Tachyon 100 g dielectric.
All pads not adjacent to RF may be grounded or no-connect, the two pins adjacent to each RF pad shall be ground.
Ground via flood is the thermal pathway for device. It is recommended to maximize total cross sectional area of via copper for best thermal performance.

Outline Drawing



All dimensions are given in inches. Package thickness: 0.060 inches
View of package footprint as seen from top through part.