M/A-COM

L-Band Power Splitter 1.0 – 5.0 GHz

Preliminary Information

MAPDGM0001-DIE

Features

- 3 dB Power Divider
- 1.0 to 5.0 GHz Operation

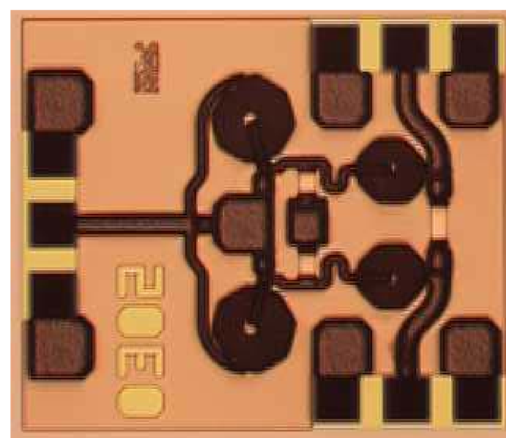
Primary Applications

- Transmitter Sub-assemblies
- Multi-function Assemblies

Description

The MAPDGM0001-Die is a power splitter. This product is matched to 50 ohms on both the input and output. Each device is 100% RF tested on wafer to ensure performance compliance.

1.0 - 5.0 GHz GaAs MMIC Phase



Electrical Characteristics: $Z_0 = 50\Omega$

Parameter	Symbol	Typical	Units
Bandwidth	f	1.0-5.0	GHz
Input VSWR	VSWR	1.4:1	
Output VSWR	VSWR	1:4:1	
Insertion Loss	IL	3.8	dB
Isolation	ISO	15	

Maximum Operating Conditions [1]

Parameter	Symbol	Absolute Maximum	Units
Input Power, Combiner Configuration	P_{IN}	37	dBm
Storage Temperature	T_{STG}	-55 to +150	°C

1. Operation outside of these ranges may reduce product reliability. Operation at other than the typical values may result in performance outside the guaranteed limits.

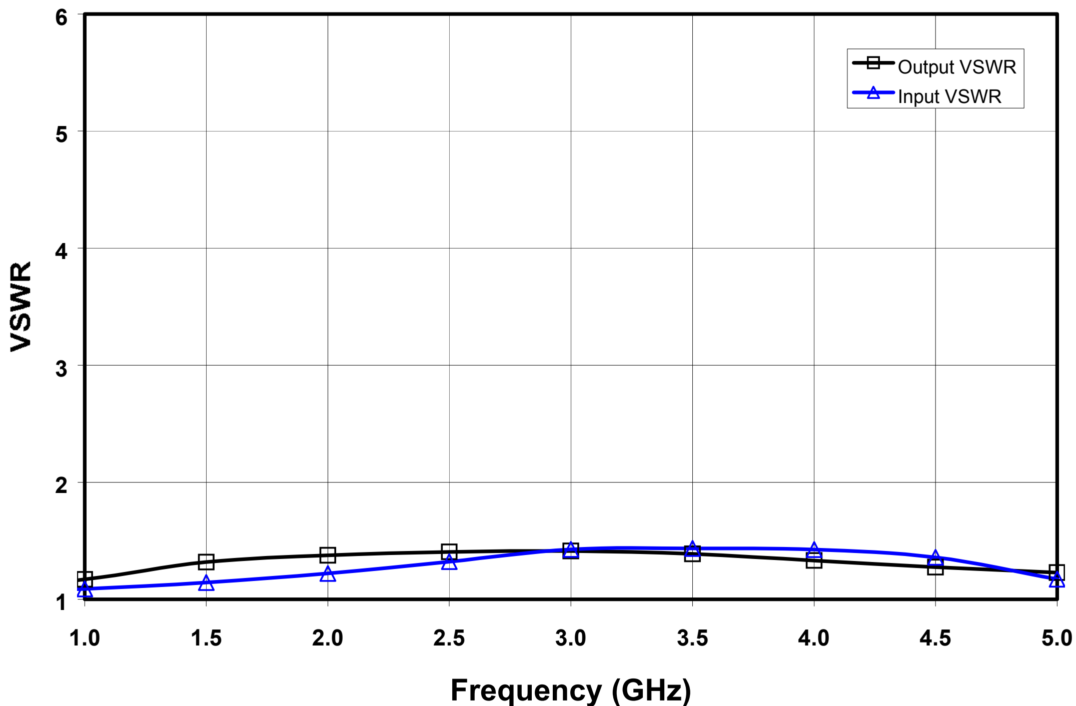


Figure 1. VSWR vs. Frequency

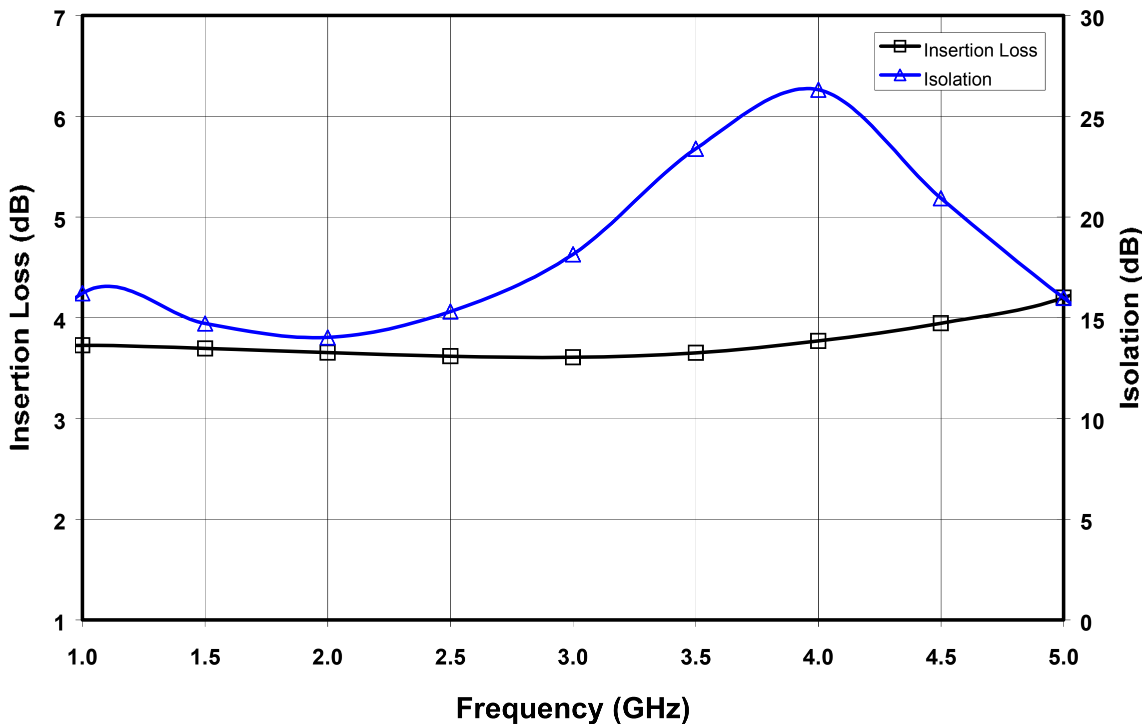


Figure 2. Insertion Loss and Isolation vs. Frequency

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Mechanical Information

Chip Size: 1.294 x 1.494 x 0.075 mm (51 x 59 x 3 mils)

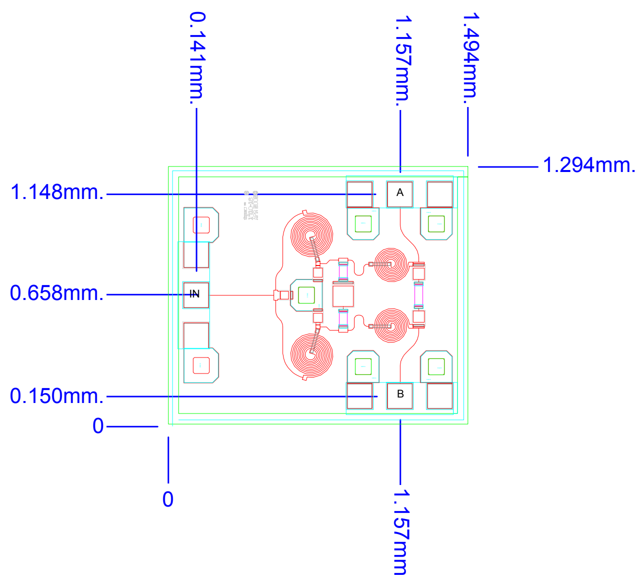

Figure 3. Die Layout

Bond Pad Dimensions

Pad	Size (µm)	Size (mils)
IN	125 x 125	5 x 5
A , B	125 x 125	5 x 5

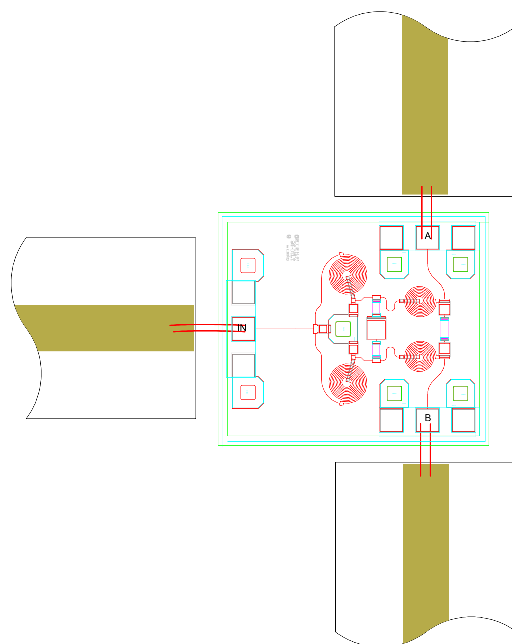

Figure 4. Recommended bonding diagram for pedestal mount.

Assembly Instructions:

Die attach: Use AuSn (80/20) 1-2 mil preform solder. Limit time @ 300 °C to less than 5 minutes. For low power applications, P_{in} < 1 W, low thermal conductivity silver epoxies are acceptable for die attach of this MMIC. Follow the manufacturer's instructions.

Wirebonding: Bond @ 160 °C using standard ball or thermal compression wedge bond techniques. For DC and RF pad connections, use either ball or wedge bonds.