

14 dB Coupler 5 - 3000 MHz



MACP-011086

Rev. V1

Features

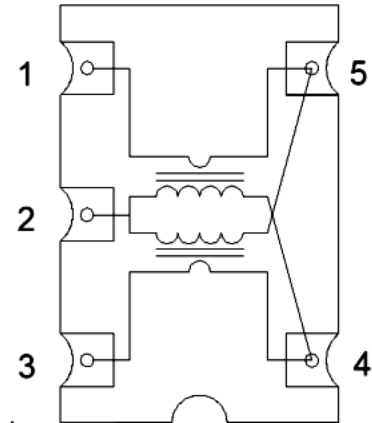
- 14 dB Coupling
- Low Profile
- Very Wide Band of Operation
- Surface Mount Package
- RoHS* Compliant
- Available on Tape & Reel

Applications

- Wireless

Description

Functional Schematic



Ordering Information^{1,2}

Part Number	Package
MACP-011086	2000 piece Reel
MACP-011086-TB	Sample Board

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Pin Configuration³

Pin #	Function
1	Input
2	Ground
3	Coupled
4	Isolated
5	Output

3. MACOM recommends connecting unused package pins to ground.

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Electrical Specifications: Freq. = 5 - 3000 MHz, P_{IN} = 0 dBm, T_A = 25°C, Z₀ = 50 Ω

Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
Coupling (pin1-3)	5 - 3000	dB	12.5	14	15.5
Mainline Loss (pin1-5)	5 - 1000 1000 - 2000 2000 - 3000	dB	—	0.8 1.4 2.7	1.2 1.8 3.4
Input Return Loss (pin1)	5 - 1000 1000 - 2000 2000 - 3000	dB	18 15 14	22 19 18	—
Output Return Loss (pin5)	5 - 1000 1000 - 2000 2000 - 3000	dB	20 14 12	25 18 16	—
Coupling Return Loss (pin3)	5 - 1000 1000 - 2000 2000 - 3000	dB	18 15 13	23 18 17	—
Isolation (pin1-4)	5 - 1000 1000 - 2000 2000 - 3000	dB	27 21 16	34 25 20	—

Recommended Maximum Ratings^{4,5,6}

Parameter	Max.
Input Power ⁶	3.0 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

4. Exceeding anyone or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. Specified at 25°C only and measured at 800 MHz & 2400 MHz

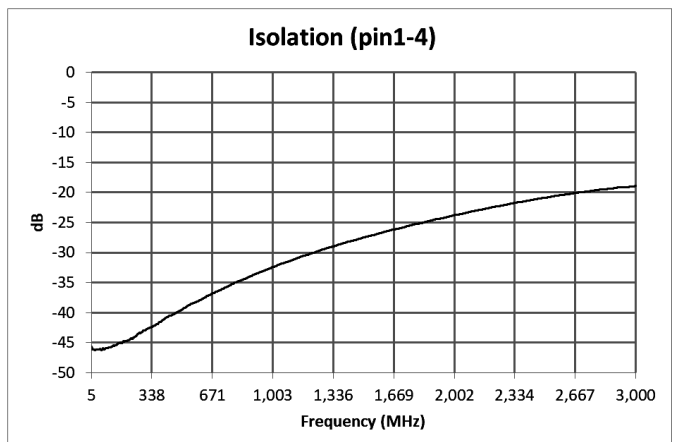
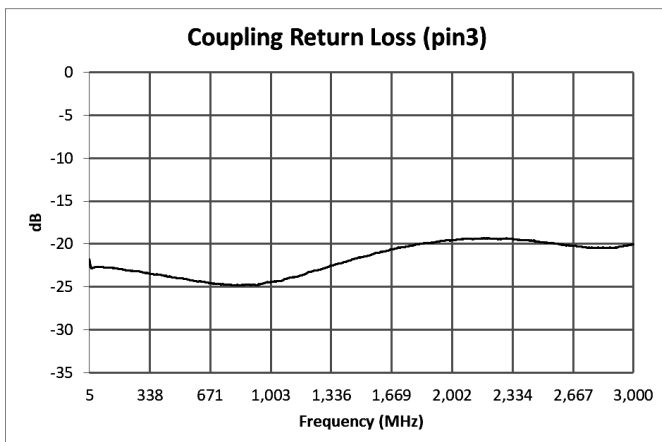
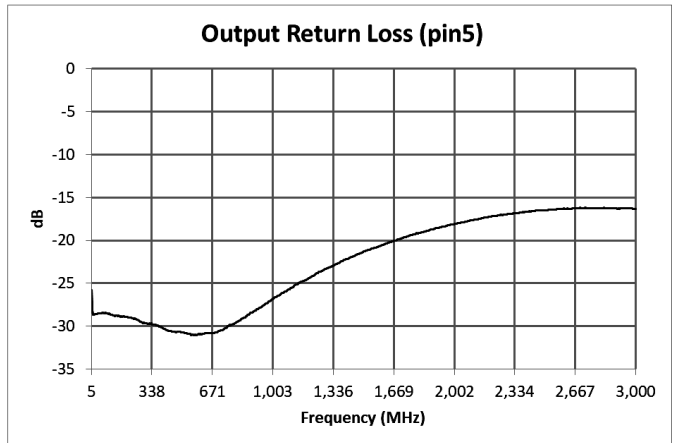
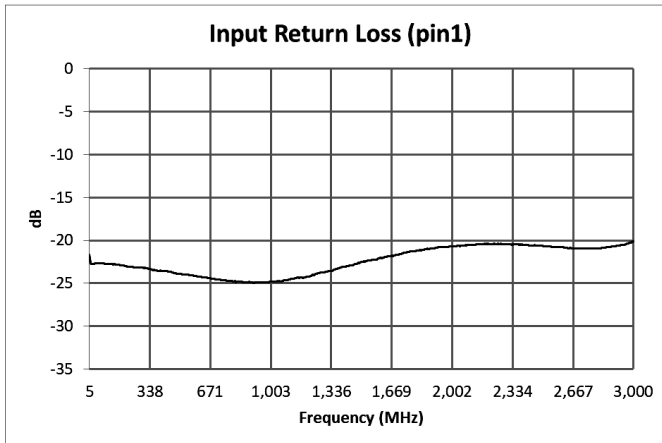
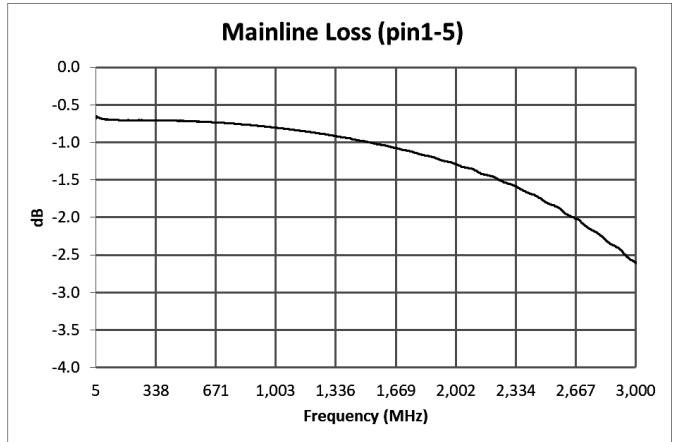
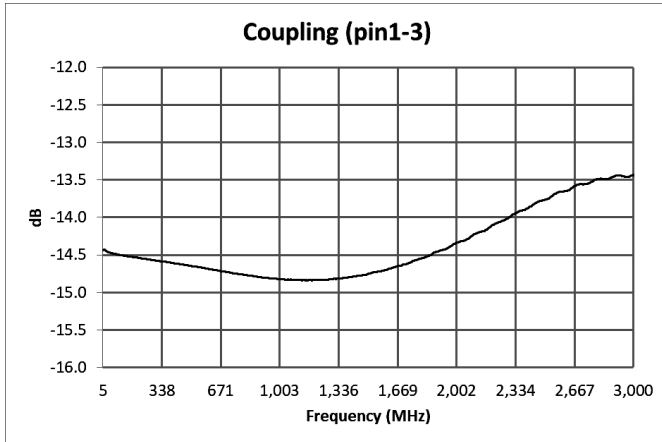
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Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$



7. Full temperature plots available on request.

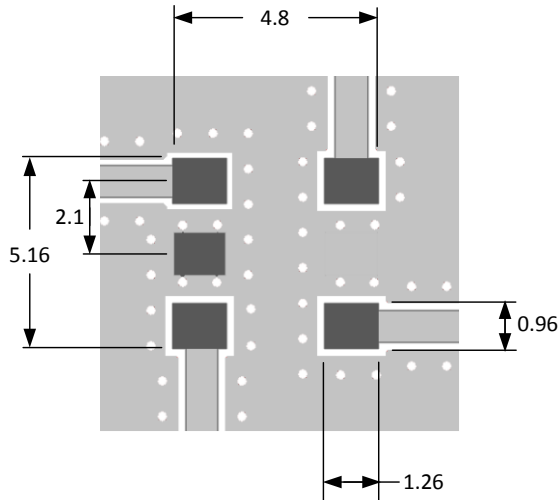
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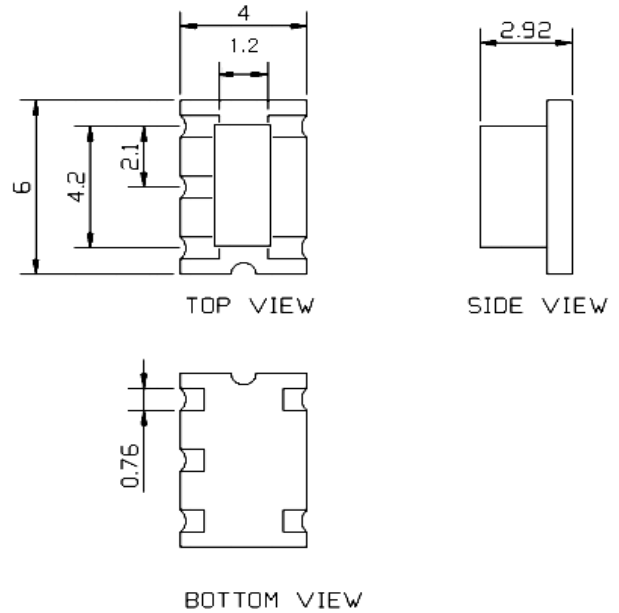
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PCB Layout⁸



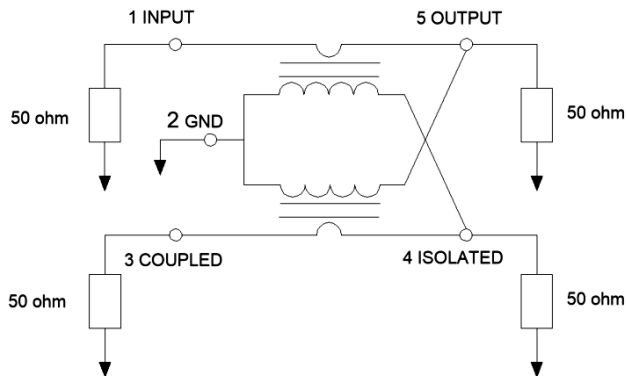
8. Recommended PCB layout shown above uses 1.6 mm FR4, grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

Outline Drawing^{9,10,11,12}

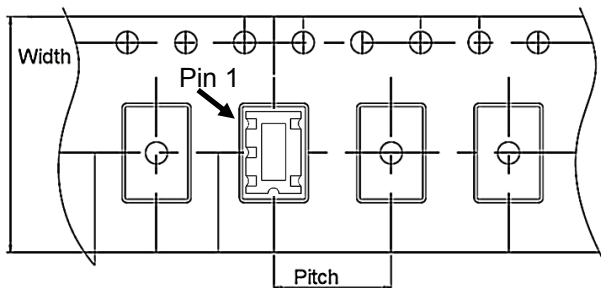


9. Dimensions in mm.
10. Tolerance: ± 0.2 mm unless otherwise noted.
11. Model number and lot code are printed on the reel.
12. Plating finish: ENIG.

Application Schematic



Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel size	mm	330
Tape width	mm	16.0
Pitch	mm	8.0
Orientation	-	F45

Reference Application Note ANI-019 for orientation

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