

Coupler, 13 dB

5 - 1218 MHz



MACP-011095

Rev. V1

Features

- 13 dB Coupling Ratio
- Surface Mount Package
- Available on Tape and Reel
- Excellent Temperature Stability
- RoHS* Compliant

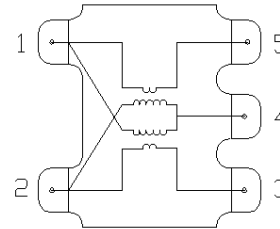
Applications

- CATV, Full Duplex and DOCSIS 3.1

Description

The MACP-011095 is a 13 dB coupler in a surface mount package.

Functional Schematic



Pin Configuration³

Pin #	Function	Pin #	Function
1	Input	4	Ground
2	Coupled	5	Output
3	External 75 Ω		

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1218 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Conditions	Units	Min.	Typ.	Max.
Coupling Ratio	—	dB	—	13	—
Coupling (Pin 1- Pin 2)	5 - 1218 MHz	dB	12.4	13	13.6
Main Line Loss (Pin 1- Pin 5)	5 - 700 MHz 700 - 1218 MHz	dB	—	0.7 0.8	1.0 1.0
Isolation (Pin 5- Pin 2)	5 - 700 MHz 700 - 1218 MHz	dB	32 27	39 31	—
Input Return Loss (Pin 1)	5 - 700 MHz 700 - 1218 MHz	dB	20 16	26 20	—
Output Return Loss (Pin 5)	5 - 700 MHz 700 - 1218 MHz	dB	18 16	21 19	—
Coupling Return Loss (Pin 2)	5 - 700 MHz 700 - 1218 MHz	dB	17 16	19 18	—

Ordering Information^{1,2}

Part Number	Package
MACP-011095	2000 piece reel
MACP-011095-TB	Sample Board

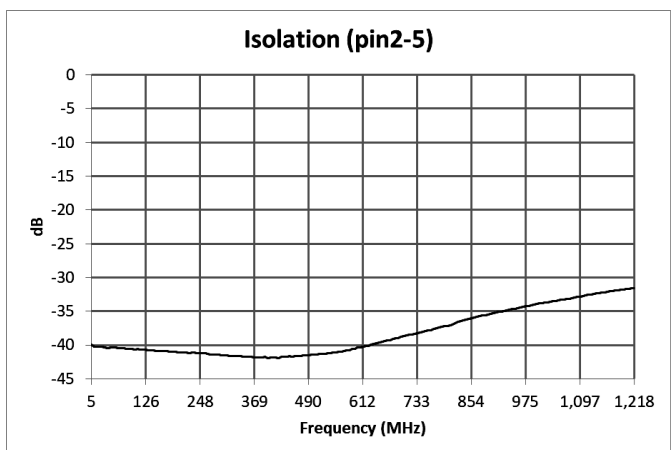
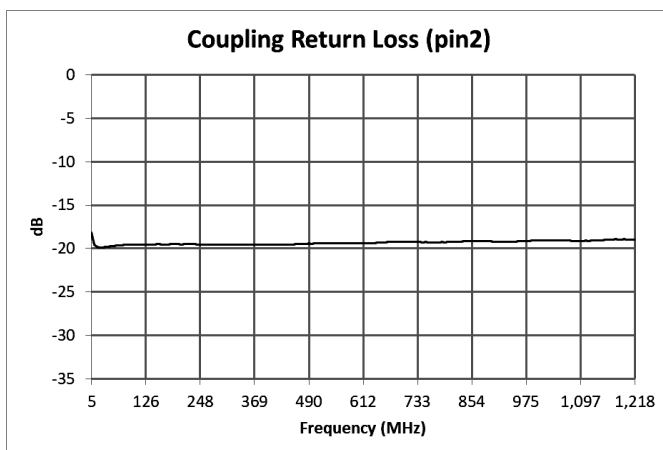
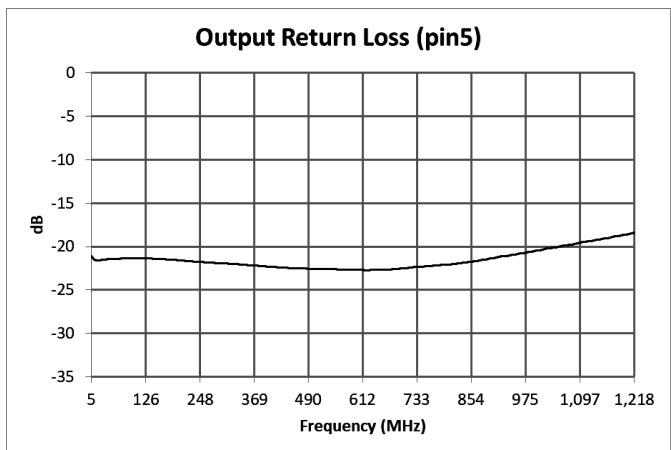
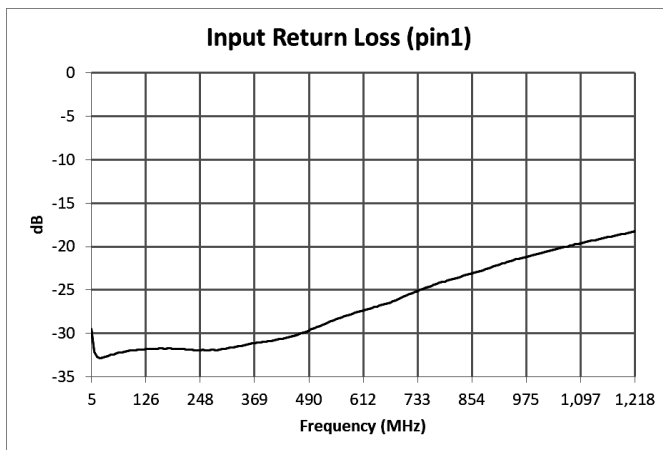
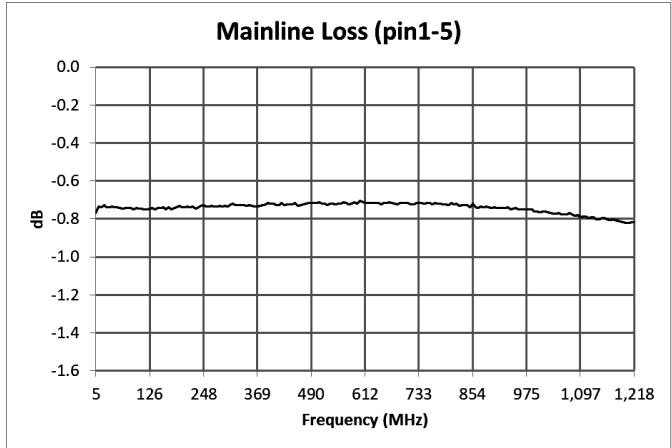
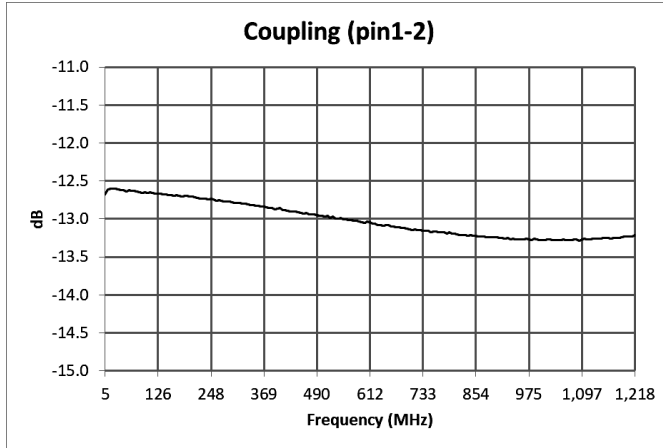
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

Parameter	Absolute Maximum
Input Power	2.0 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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

Typical Performance Curves



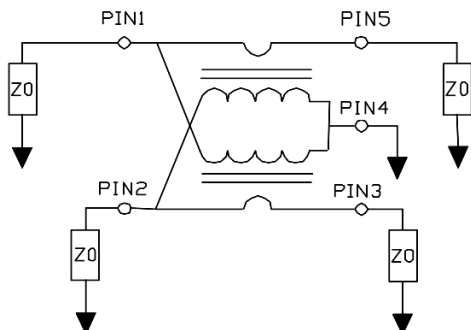
Coupler, 13 dB 5 - 1218 MHz



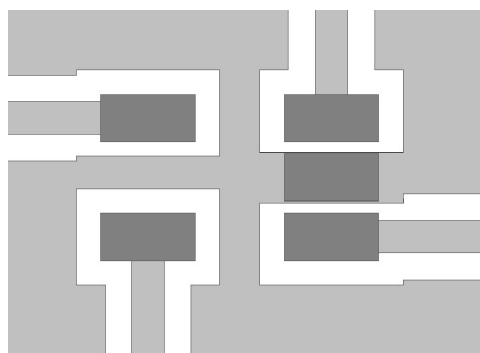
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Application Schematic

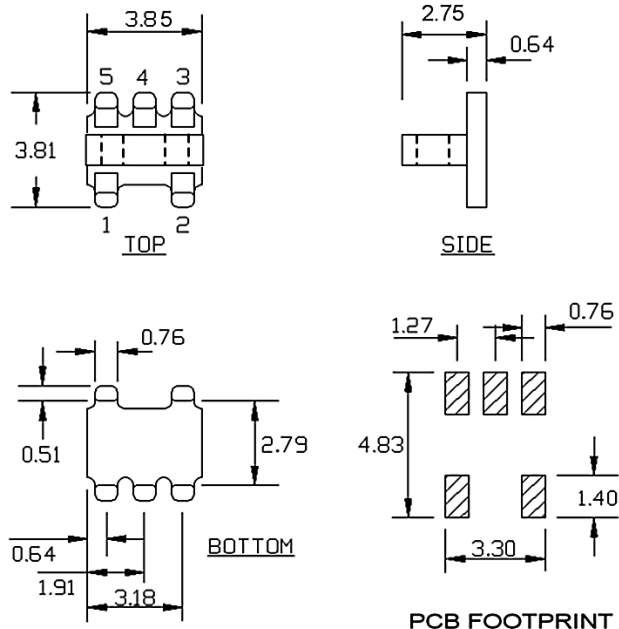


Recommended Board Layout⁷



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

Outline Drawing^{8,9,10,11}



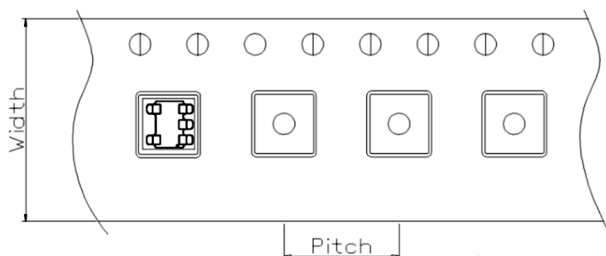
8. Dimensions in mm.

9. Tolerance: ± 0.2 mm unless otherwise noted.

10. Model number and lot code printed on reel.

11. Finish: Electroless Nickel Immersion Gold.

Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.0
Pitch	mm	8.00
Orientation	-	F5
Reference Application Note ANI-019 for orientation		

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