

16 dB Coupler 5 - 1225 MHz

Rev. V1

Features

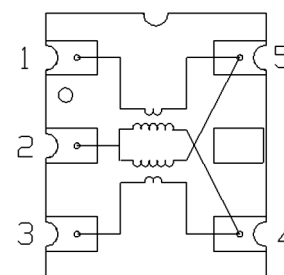
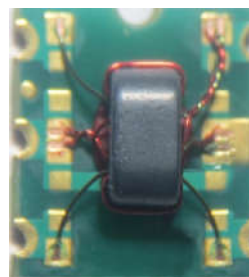
- 16 dB Coupling Ratio
- Surface Mount
- Available on Tape and Reel
- High isolation from 100 - 700 MHz
- Low insertion loss
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

Description

The MACP-011056 is a 16 dB coupler in a low cost, surface mount package.

Ideally suited for CATV, Full Duplex and DOCSIS 3.1 applications.

Functional Schematic



Pin Configuration³

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

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1225 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Frequency Test Conditions (MHz)	Units	Min.	Typ.	Max.
Coupling Ratio	-	dB	—	16	—
Coupling (pin 1 - pin 3)	5 - 1225	dB	15.5	16	16.5
Main Line Loss (pin 1 - pin 5)	5 - 700 700 - 1225	dB	—	0.55 0.70	0.65 0.90
Isolation (pin 5 - pin 3)	5 - 100 100 - 700 700 - 1225	dB	37 40 28	40 43 33	—
Input Return Loss (pin 1)	5 - 700 700 - 1225	dB	18 15	23 18	—
Output Return Loss (pin 5)	5 - 700 700 - 1225	dB	19 15	24 18	—
Coupling Return Loss (pin 3)	5 - 700 700 - 1225	dB	14 11	19 13	—

Ordering Information^{1,2}

Part Number	Package
MACP-011056	900 piece reel
MACP-011056-TB	Sample Board

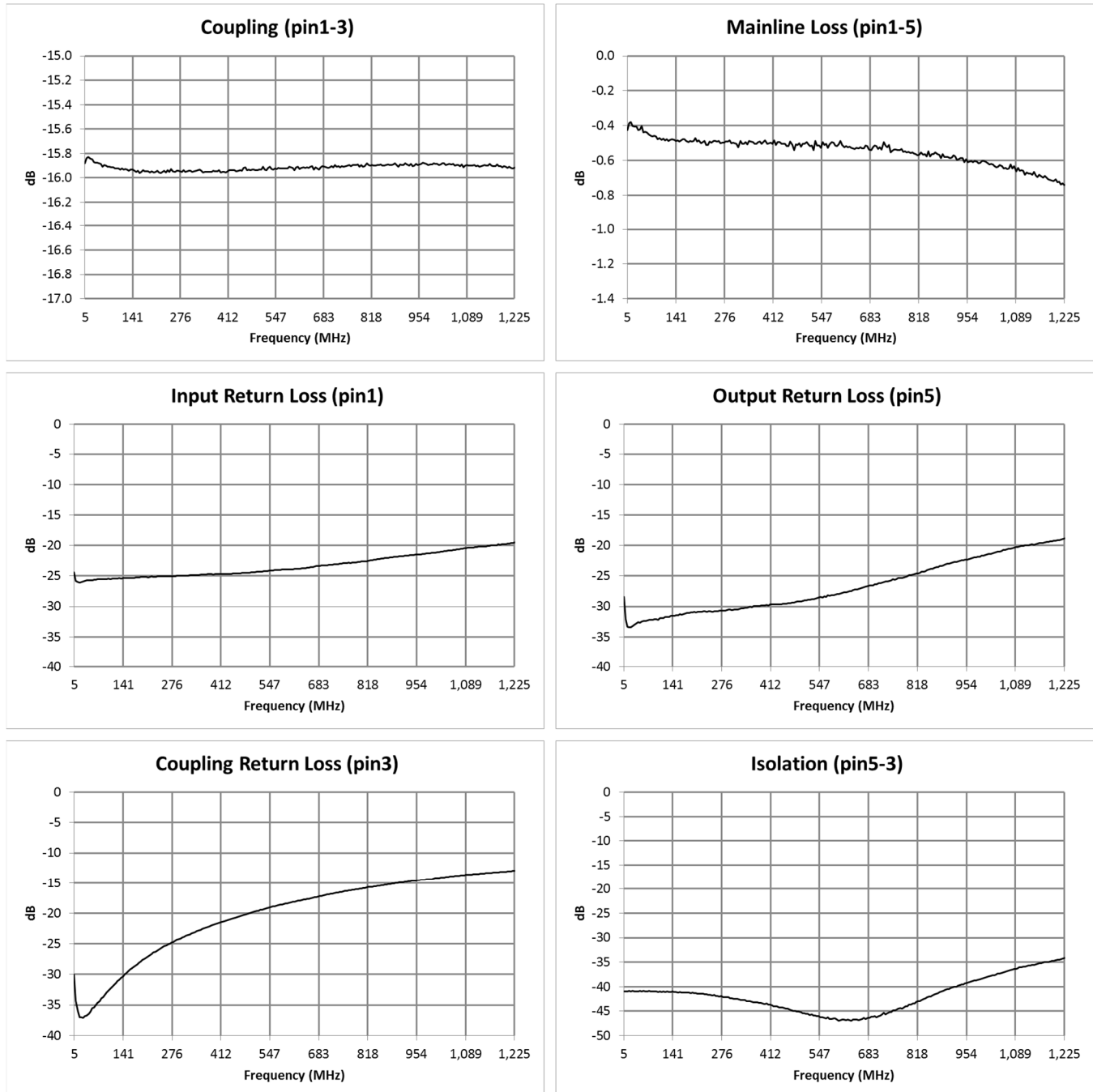
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

Parameter	Absolute Maximum
Input Power ⁶	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

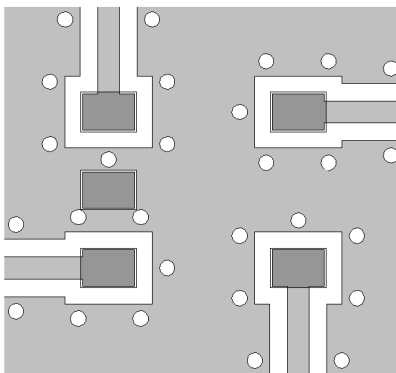
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. Specified at +25°C only.

Typical Performance Curves⁷



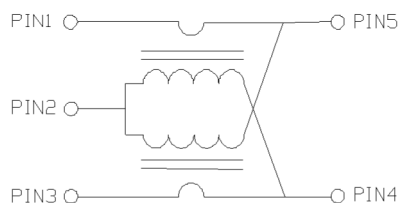
7. Full temperature plots available on request.

PCB Layout⁸

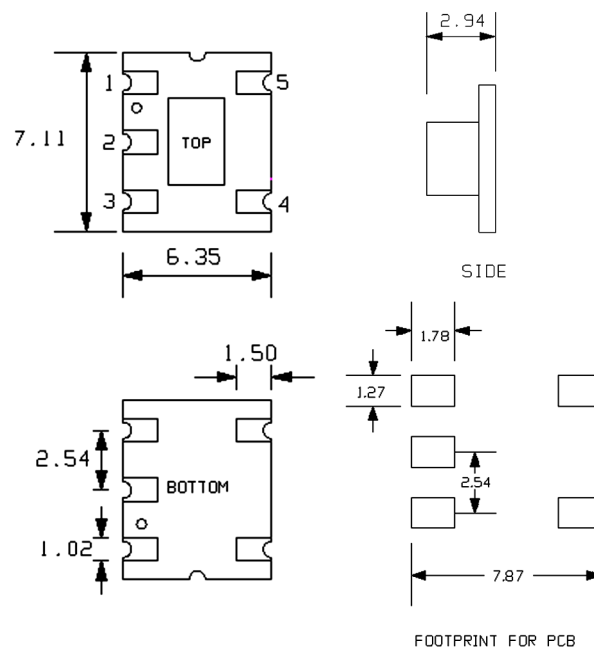


8. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

Application Schematic

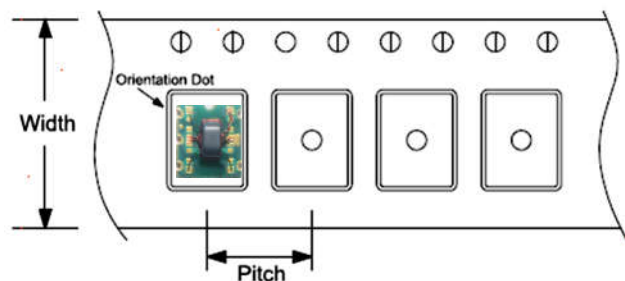


Outline Drawing^{9,10,11,12}



9. Dimensions in mm.
10. Tolerance: ± 0.2 mm unless otherwise noted.
11. Model number and lot code printed on reel.
12. Finish: Electroless Nickel Immersion Gold.

Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	12.0
Orientation	-	F62
Reference Application Note ANI-019 for orientation		

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