

Coupler, 7 dB

5 - 1225 MHz



MACP-011114
Rev. V1

Features

- 7 dB Coupling Ratio
- Surface Mount Package
- High Isolation from 100 - 700 MHz
- Excellent Temperature Stability
- Available on Tape and Reel
- RoHS* Compliant

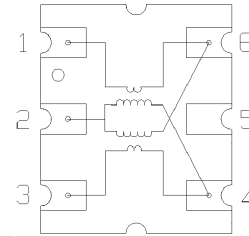
Applications

- CATV, Full Duplex and DOCSIS 3.1

Description

The MACP-011114 is a 7 dB coupler in a surface mount package.

Functional Schematic



Pin Configuration³

Pin #	Function	Pin #	Function
1	Input	4	External 90 Ω
2	Ground	5	Not Connected
3	Coupled	6	Output

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1225 MHz, T_A = 25°C, Z₀ = 75 Ω, P_{IN} = 0 dBm

Parameter	Conditions	Units	Min.	Typ.	Max.
Coupling Ratio	—	dB	—	7	—
Coupling (pin 1 - pin 3)	5 - 1225	dB	6.5	7.0	7.5
Main Line Loss (pin 1 - pin 6)	5 - 684 684 - 1225	dB	—	1.5 2.0	1.8 2.4
Isolation (pin 6 - pin 3)	5 - 100 100 - 684 684 - 1225	dB	28 40 25	35 43 30	—
Input Return Loss (pin 1)	5 - 684 684 - 1225	dB	16 16	20 22	—
Output Return Loss (pin 6)	5 - 684 684 - 1225	dB	18 14	21 17	—
Coupling Return Loss (pin 3)	5 - 1000 1000 - 1225	dB	15 14	19 17	—

Ordering Information^{1,2}

Part Number	Package
MACP-011114	900 piece reel
MACP-011114-TB	Sample Board

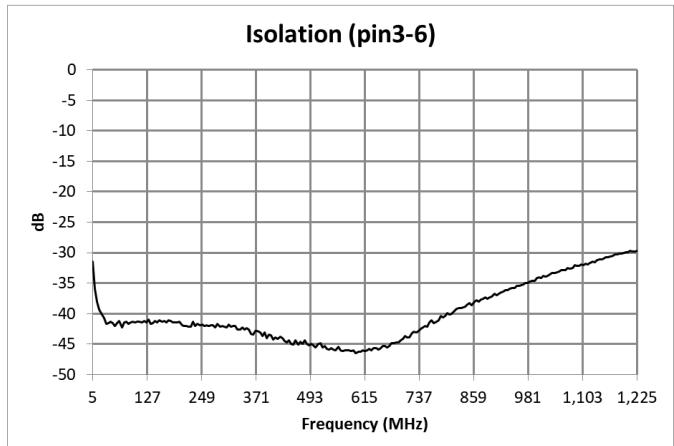
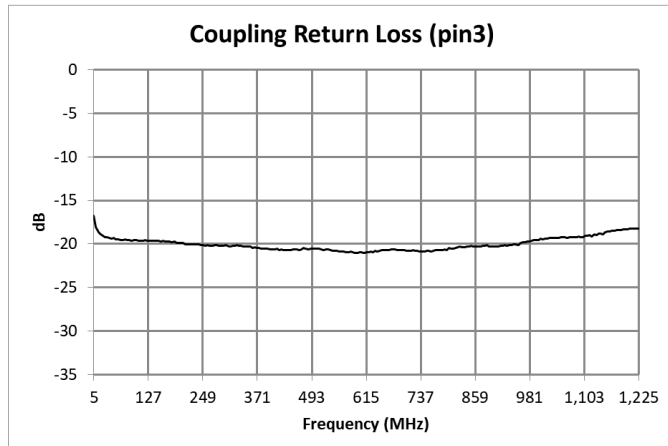
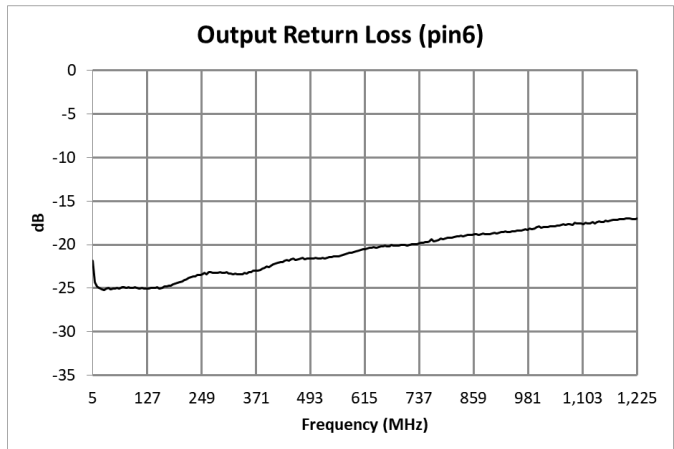
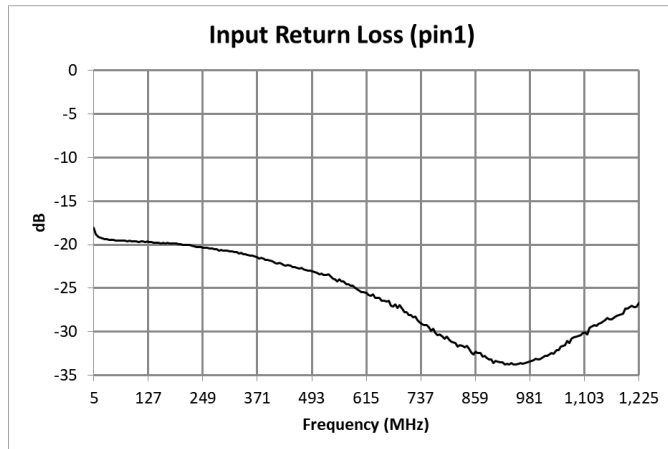
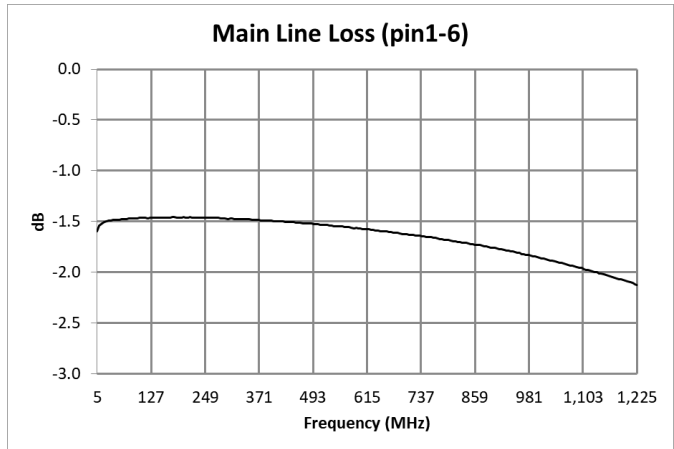
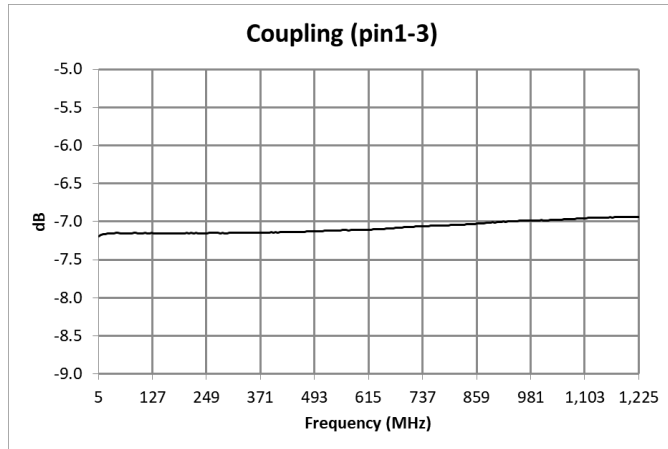
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

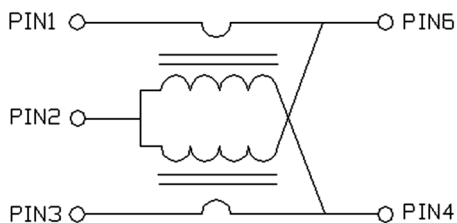
Parameter	Absolute Maximum
Input Power	3 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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.

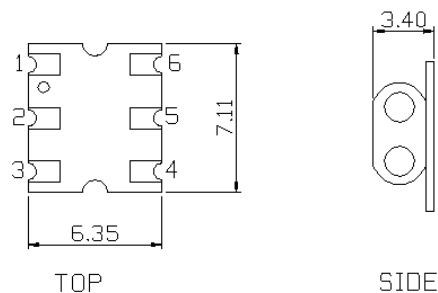
Typical Performance Curves



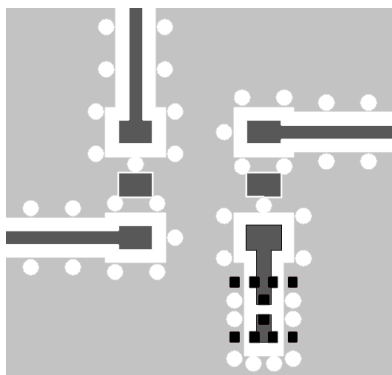
Application Schematic



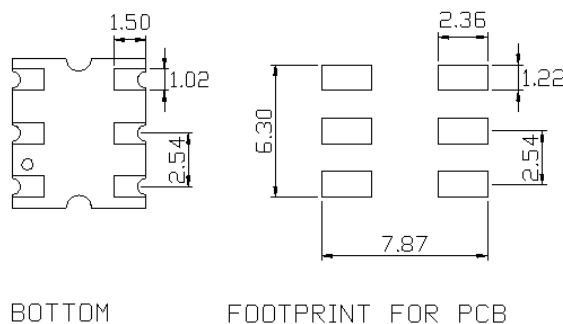
Outline Drawing^{8,9,10,11}



Recommended Board Layout⁷

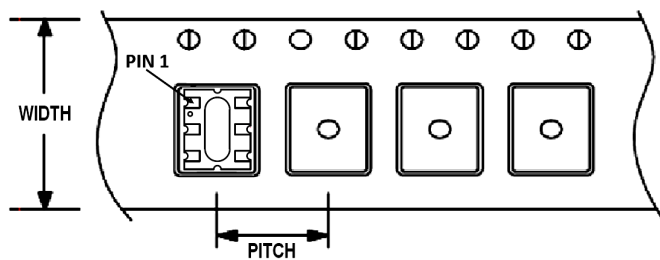


7. Recommended PCB layout shown above uses 1.6 mm FR4, rounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.



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	-	900
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	12.0
Orientation	-	F33
Reference Application Note ANI-019 for orientation		

Rev	Date	Change Description
V1	2024 March	Production Release

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