MACP-011013

20 dB Coupler
5 - 1500 MHz

Rev. V2

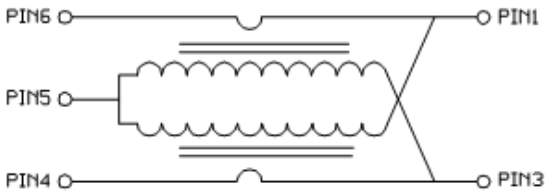
Features

- 20 dB Coupling Ratio
- Surface Mount
- Available on Tape and Reel
- Excellent Temperature Stability
- RoHS Compliant and lead free
- 260ºC Reflow Compatible

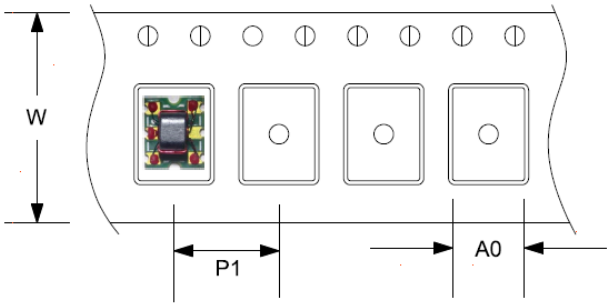
Description

The MACP-011013 is a 20 dB coupler in a low cost, surface mount package. Ideally suited for broadband CATV applications.

Functional Schematic



Carrier Tape Orientation



Ordering Information

Part Number	Description
MACP-011013	900 piece reel
MACP-011013-TB	Sample Test Board

Pin Configuration

Pin No.	Function
1	Output
2	Not Connected
3	Isolated
4	Coupled
5	Ground
6	Input

20 dB Coupler
5 - 1500 MHz

Rev. V2

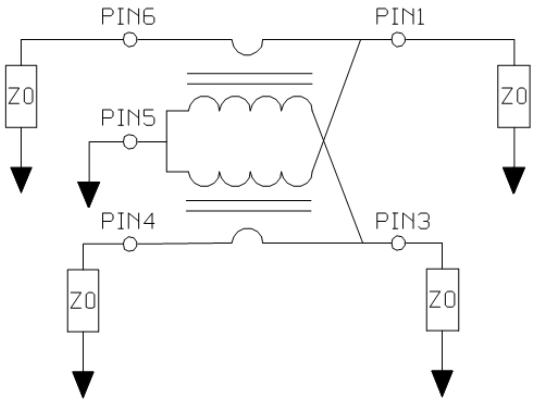
Electrical Specifications: T_A = 25°C, Z_0 = 75 Ω, P_{in} = 0 dBm

Parameter	Conditions	Units	Min.	Typ.	Max.
Frequency Range	—	MHz	5	—	1500
Impedance	—	Ω	—	75	—
Coupling Ratio	—	dB	—	20	—
Coupling (Pin 6, Pin 4)	5 - 700 MHz 700 - 1200 MHz 1200 - 1500 MHz	dB	20.5 20.5 20.5	20.0 20.0 20.0	19.5 18.5 17.7
Coupling Flatness	5 - 1218 MHz 5- 1500 MHz	dB	—	0.5 0.7	0.7 0.9
Coupling Tilt	5 - 1218 MHz 5 - 1500 MHz	dB	—	1.55 2.00	1.7 2.3
Main Line Loss (Pin 6, Pin 1)	5 - 1250 MHz 1250 - 1500 MHz	dB	0.4 0.4	0.57 0.93	0.85 1.20
Isolation (Pin 6, Pin 3)	5 - 1250 MHz 1250 - 1500 MHz	dB	26 23	27 24	—
Input Return Loss (Pin 6)	5 - 1250 MHz 1250 - 1500 MHz	dB	20 17	22 19	—
Output Return Loss (Pin 1)	5 - 1250 MHz 1250 - 1500 MHz	dB	20 17	22 19	—
Coupling Return Loss (Pin 4)	5 - 1250 MHz 1250 - 1500 MHz	dB	19 17	22 19	—

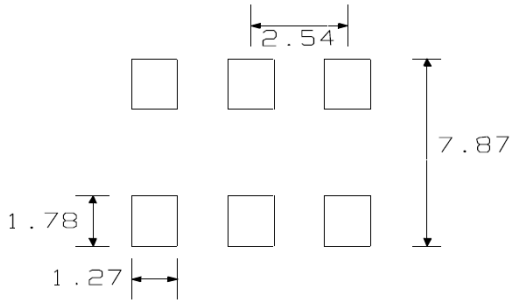
Absolute Maximum Ratings

Parameter	Absolute Maximum
Input Power	0.5 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

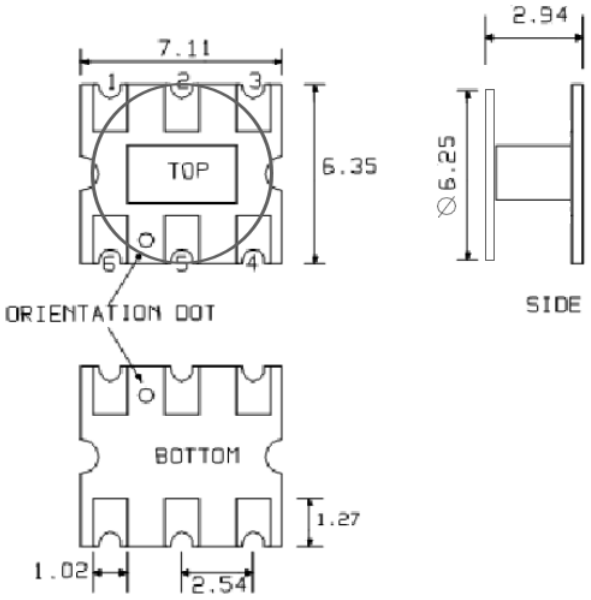
Application Circuit



PCB Layout



Outline Drawing

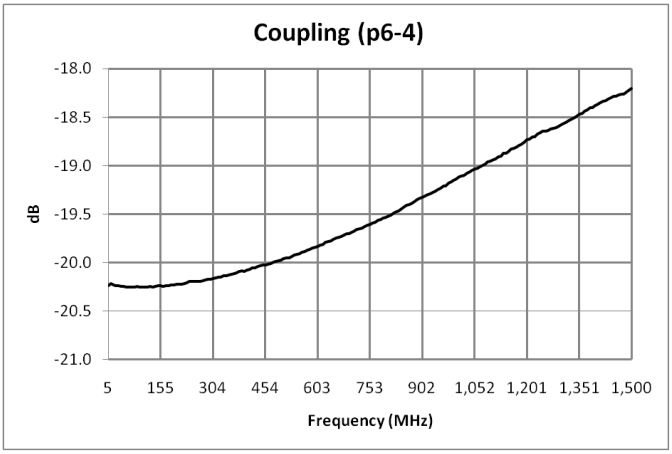


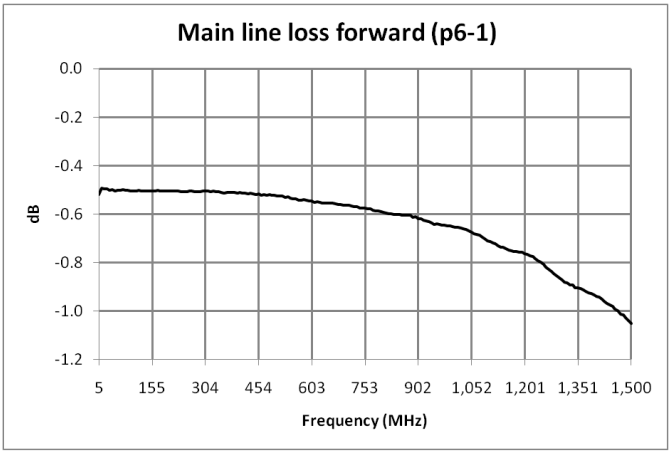
1. Dimensions in mm.
2. Tolerance: ±0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Lead plating: ENIG.

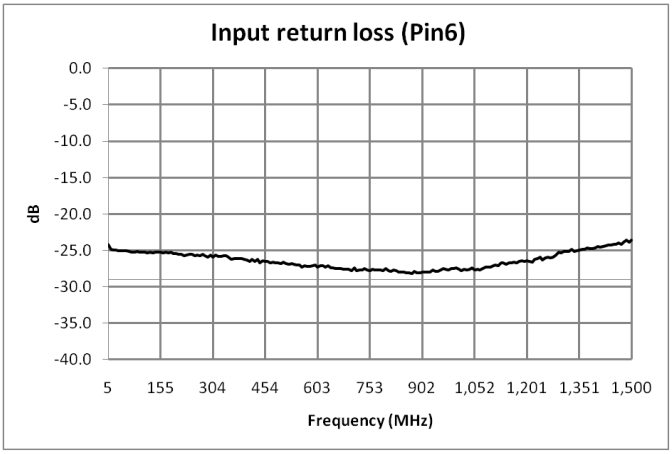
Tape & Reel Information

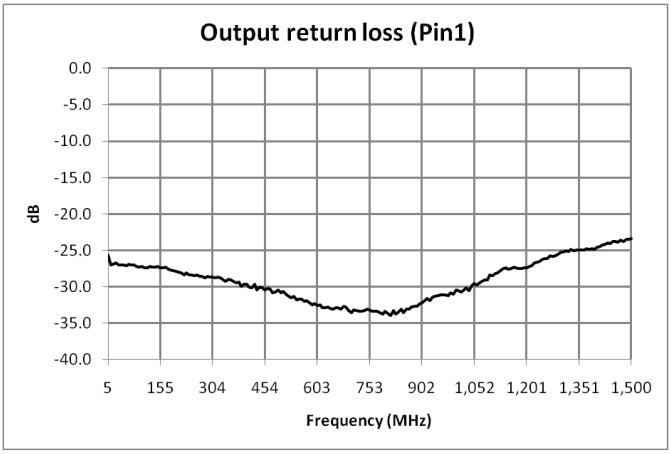
Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	12.0
Ao	mm	6.7
Bo	mm	7.4
Ko	mm	3.1
Orientation	-	F33
Reference Application Note ANI-019 for orientation		

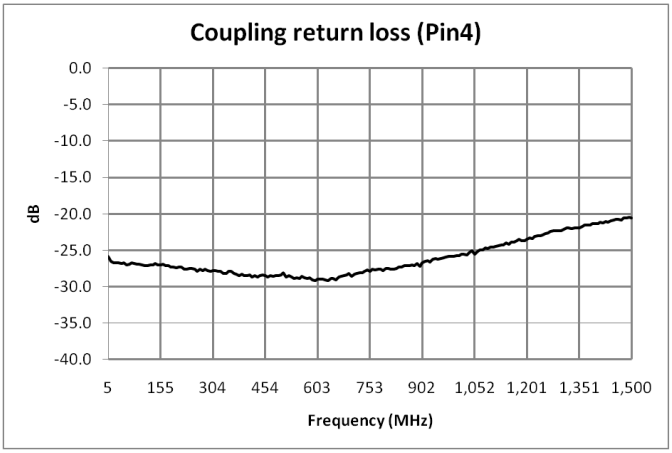
Typical Performance Curves[1]

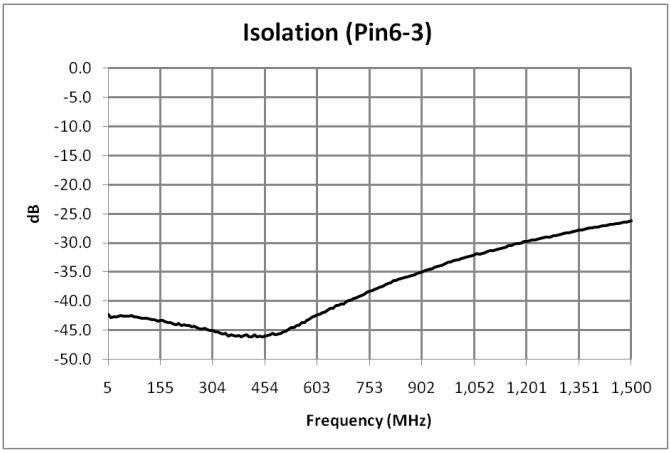












1. Full temperature plots available on request.

"Application Section for Alternative Pin Configuration"

Electrical Specifications: T_A = 25°C, Z_0 = 75 Ω, P_{in} = 0 dBm

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Frequency Range	-	MHz	5	—	1500
Impedance	-	Ω	-	75	-
Coupling Ratio	-	dB	-	20	-
Coupling (Pin 1 - Pin 3)	5 - 700 MHz 700 - 1200 MHz 1200 - 1500 MHz	dB	- - -	20.0 20.0 20.0	- - -
Coupling Flatness	5 - 1218 MHz 5- 1500 MHz	dB	-	0.5 0.7	- -
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Main Line Loss (Pin 1 - Pin 6)	5 - 1250 MHz 1250 - 1500 MHz	dB	- -	0.57 0.93	- -
Isolation (Pin 1 - Pin 4)	5 - 1250 MHz 1250 - 1500 MHz	dB	- -	27 24	-
Input Return Loss (Pin 1)	5 - 1250 MHz 1250 - 1500 MHz	dB	- -	22 19	-
Output Return Loss (Pin 6)	5 - 1250 MHz 1250 - 1500 MHz	dB	- -	22 19	-
Coupling Return Loss (Pin 3)	5 - 1250 MHz 1250 - 1500 MHz	dB	- -	22 19	-

Pin Configuration

Pin No.	Function
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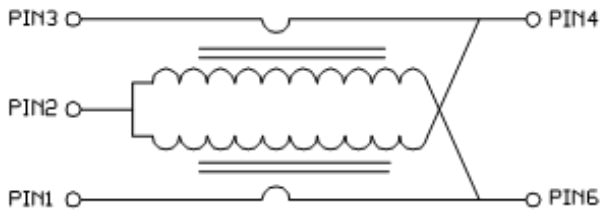
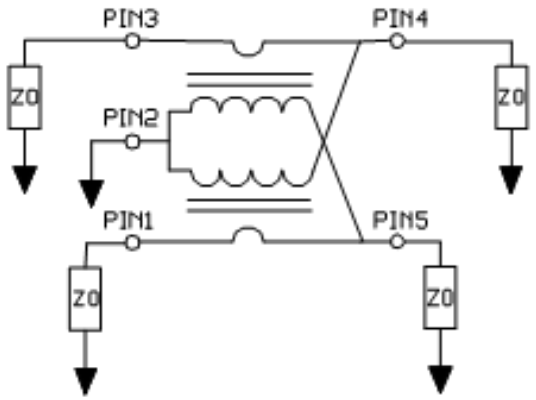
5	Not Connected
6	Output

Functional Schematic

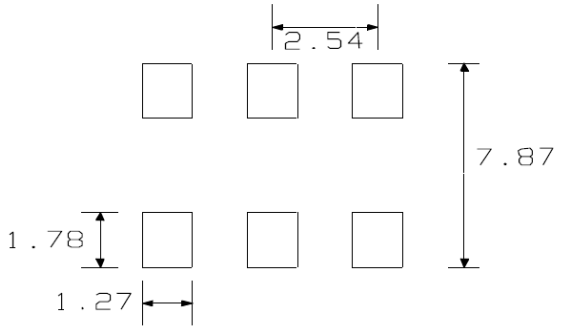


"Application Section for Alternative Pin Configuration"

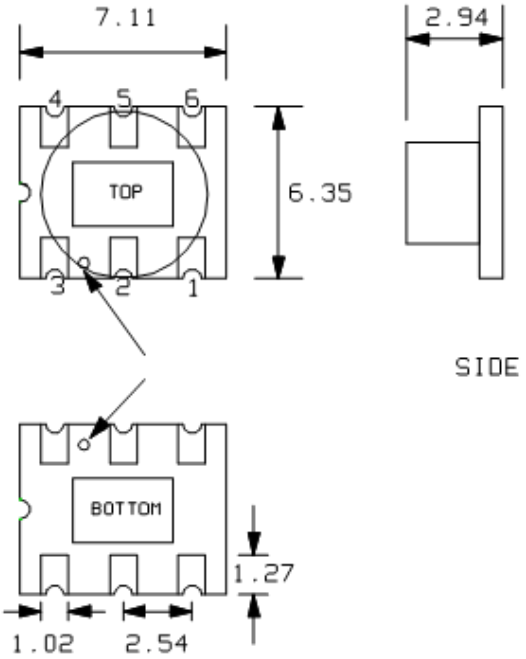
Application Circuit



PCB Layout



Outline Drawing



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