

MACP-009945-CH0670



Broadband CATV 17.5 dB Directional Coupler
5 to 1200 MHz

Rev. V3

Features

- Surface Mount
- Coupling 17.5dB Typical
- Excellent Temperature stability
- 260°C Reflow Compatible
- RoHS* Compliant, lead free
- Available on Tape and Reel.

Description

M/A-COM Technology Solutions MACP-009945-CH0670 is a low cost 17.5dB directional coupler designed in a low cost, surface mount package. Ideally suited for high volume CATV/Broadband applications. Suitable for use in 50 Ohm and 75 Ohm systems.

Note:

There is no orientation dot on the bottom of the PCB.

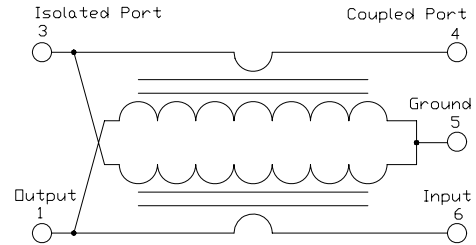


Pin Configuration

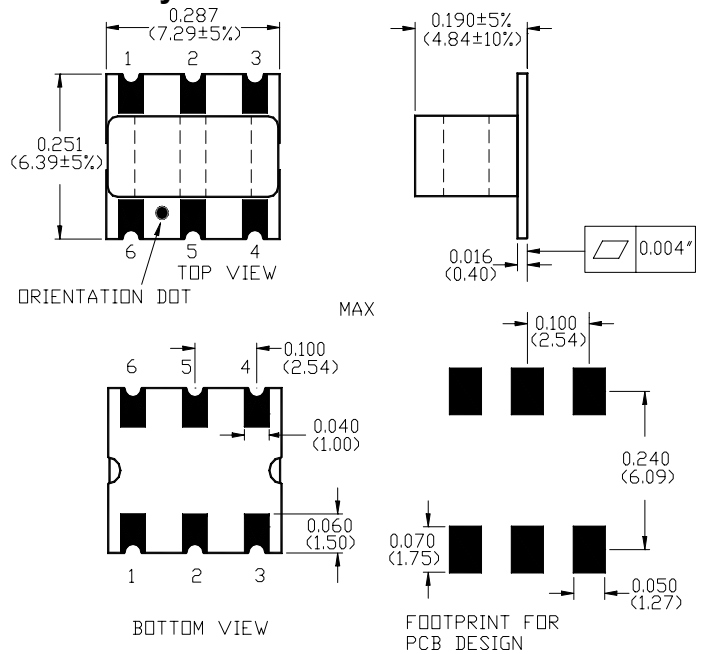
Pin No.	Function
1	Output
2	Not Connected (ground)
3	Isolated (external 75 Ohm Load)
4	Coupling
5	Ground
6	Input

Note: Reference Application Note **M513** for reel size information.

Schematic



Case Style: SM-103



Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010, unless otherwise stated

Ordering Information

Part number	Description
MACP-009945-CH0670	900 piece reel
MACP-009945-CH06TB	Customer Test Board

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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Electrical Specifications: $T_A = 25^\circ\text{C}$, 0dBm , $Z_0 = 75\Omega$, $P_{in} = 0\text{dBm}$

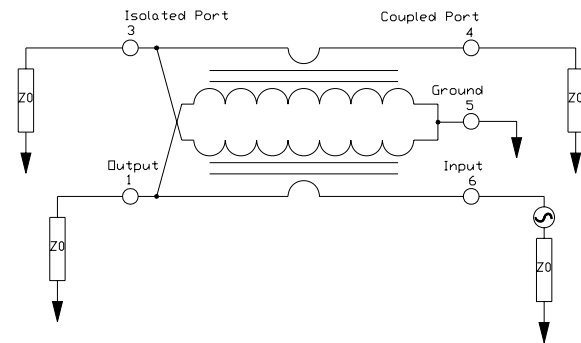
* Monitored during production tune/test.

Parameter	Test Conditions	Units	Min	Typ	Max
Main Line Loss (Pin 6-1) forward *	5 - 870 MHz	dB	-	0.5	1.0
	870 - 1002 MHz	dB	-	1.0	1.2
	1002 - 1200 MHz	dB	-	1.3	1.6
Main Line Loss (Pin 3-4) Reverse *	5 - 870 MHz	dB	-	0.5	1.0
	870 - 1002 MHz	dB	-	1.0	1.2
	1002 - 1200 MHz	dB	-	1.3	1.6
Coupling -17.5dB (Pin 6-4) Forward *	5 - 1002 MHz	dB	-	17.5	± 0.5
	1002 - 1200 MHz	dB	-	17.5	± 1.0
Coupling -17.5dB (Pin 1-3) Reverse *	5 - 200 MHz	dB	-	17.5	± 0.7
	200 - 500 MHz	dB	-	18.5	± 1.5
	500 - 870 MHz	dB	-	19.5	± 1.5
	870 - 1002 MHz	dB	-	18.5	± 1.5
	1002 - 1200 MHz	dB	15.0	17.5	19.5
Input Return Loss (Pin 6) *	5 - 870 MHz	dB	22	27	-
	870 - 1002 MHz	dB	20	26	-
	1002 - 1200 MHz	dB	16	24	-
Output Return Loss (Pin 1) *	5 - 870 MHz	dB	22	33	-
	870 - 1002 MHz	dB	18	33	-
	1002 - 1200 MHz	dB	15	21	-
Coupling Return Loss (Pin 4) *	5 - 870 MHz	dB	22	28	-
	870 - 1002 MHz	dB	20	23	-
	1002 - 1200 MHz	dB	18	23	-
Directivity	5 - 870 MHz	dB	30	40	-
	870 - 1002 MHz	dB	8	15	-
	1002 - 1200 MHz	dB	4	10	-
Inductance @ 5 MHz (Pins 6-1 & 4-3)	5 MHz	nH	240	245	260

Recommended Maximum Ratings

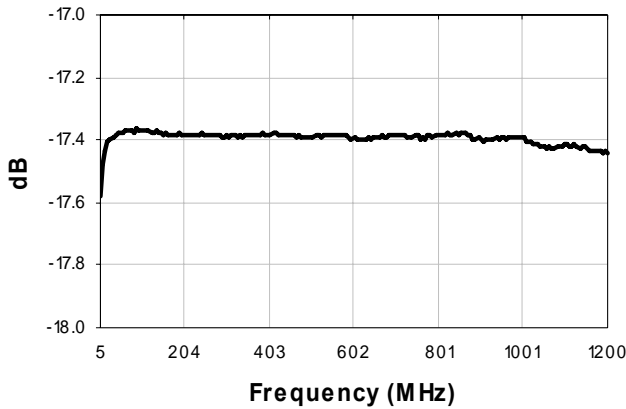
Parameter	Value
RF power	250mW
DC current	30mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C

Application Circuit

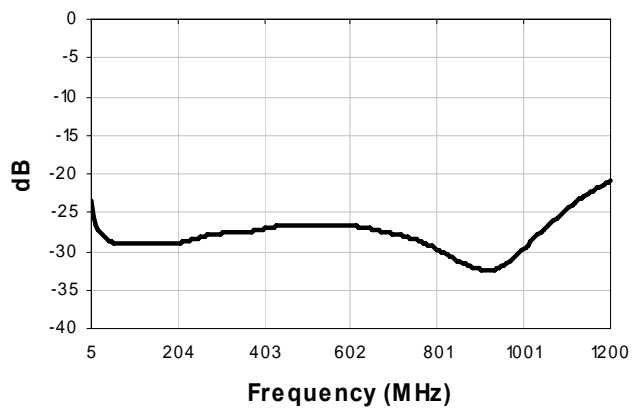


Typical Performance Curves: $T_A = 25^\circ\text{C}$, 0dBm , $Z_0 = 75\Omega$, $P_{in} = 0\text{dBm}$

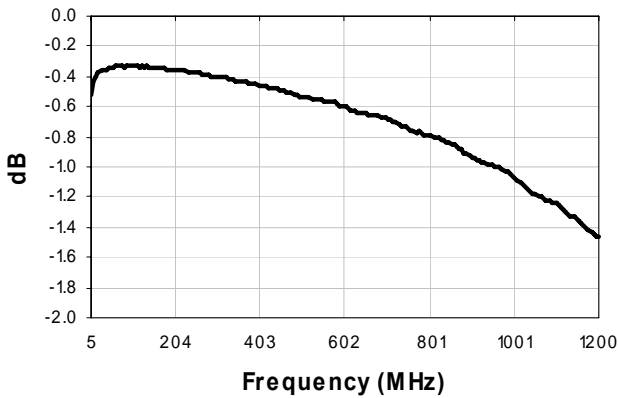
Coupling Forward (Pin 6 to 4)



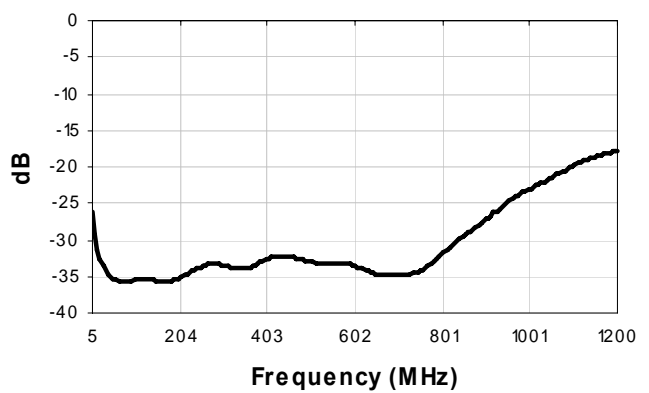
Return Loss: Input (Pin 6)



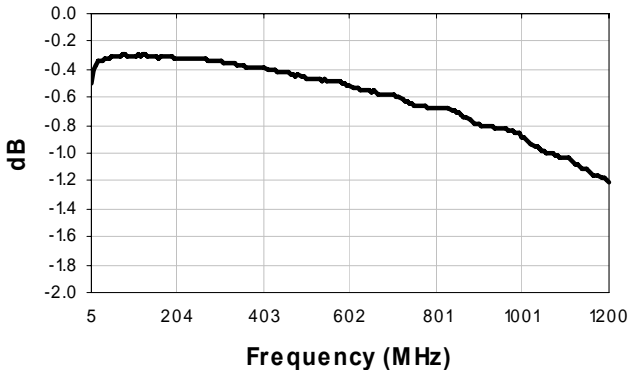
Main Line Loss Forward (Pin 6-1)



Return Loss: Output (Pin 1)



Main Line Loss Reverse (Pin 3-4)



Return Loss: Coupled (Pin 4)

