

# RoHS Compliant



Broadband CATV, Coupler  
5-1000MHz

MACPCT0040  
V1A

## Features

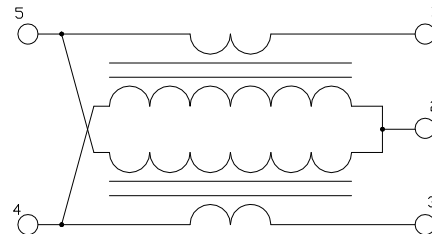
- Surface Mount
- Typical Coupling +10dB
- 260°C Reflow Compatible
- RoHS\* Compliant
- RoHS equivalent of EMDC-10-1
- Available on Tape and Reel. Reel quantity 2000

## Description

M/A-COM's MACPCT0040 is a 10dB broadband Coupler in a low cost, surface mount package. It offers low loss, good isolation, good input/output matching and exceptional coupling repeatability. Ideally suited for high volume CATV/Broadband applications.



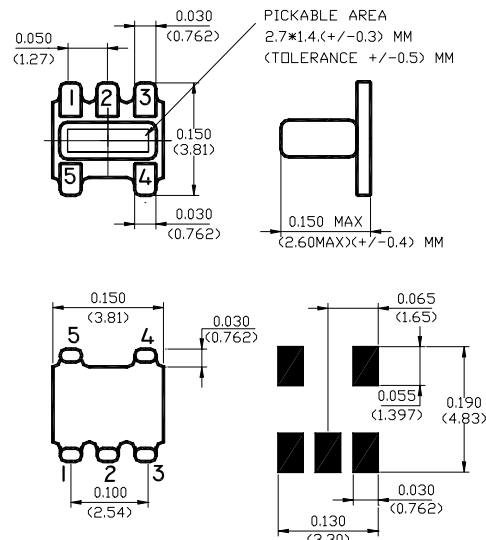
## Schematic



## Pin Configuration

Pin No.	Function
1	Input
2	Ground
3	Coupled
4	Isolated (external 50 Ohms termination)
5	Output

## Case Style: SM-91



THE TOTAL HEIGHT OF THIS UNIT IS 2.60+/-0.4MM. THE CORE IS PLACED DIRECTLY IN THE CENTER OF THE SUBSTRATE, TOLERANCE +/-0.5 MM. THE "PICKABLE" AREA ON THE TOP OF THE CORE IS 2.7 \* 1.4 (+/-0.3) MM

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

## Ordering Information

Part Number	Package
MACPCT0040TR	2000 piece reel

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

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

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### Electrical Specifications: $T_A = 25^\circ\text{C}$ , $Z_0 = 50\Omega$ <sup>1</sup>

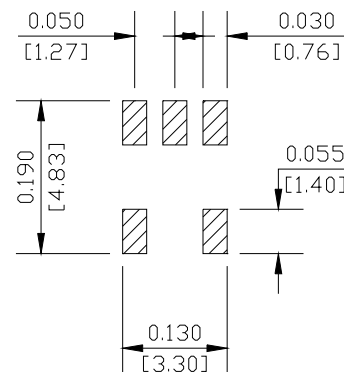
Parameter	Test Conditions	Units	Min	Typ	Max
Coupling	5 - 500 MHz	dB	-	9.95	10 ± 0.4
	500 - 1000 MHz	dB	-	9.90	10 ± 0.6
Main Line Loss	5—500MHz	dB	-	1.1	1.4
	500 - 1000 MHz	dB	-	1.3	1.7
Directivity	5 - 50MHz	dB	20	22	-
	50—500MHz	dB	18	21	-
	500 - 1000 MHz	dB	13	18	-
Input Return Loss	5 - 1000 MHz	dB	16	21	-
Output Return Loss	5 - 50MHz	dB	20	30	-
	50—500MHz	dB	28	40	-
	500 - 1000 MHz	dB	20	35	-
Coupling Return Loss	5 - 500 MHz	dB	16	20	-
	500 - 1000 MHz	dB	13	18	-
Isolation Return Loss	5 - 50MHz	dB	20	30	-
	50—500MHz	dB	25	43	-
	500 - 1000 MHz	dB	16	25	-

### Absolute Maximum Ratings<sup>1,2</sup>

Parameter	Absolute Maximum
Max Input Power	250mW
DC current	30mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- M/A-COM does not recommend sustained operation near these survivability limits.

### Recommended PCB Configuration



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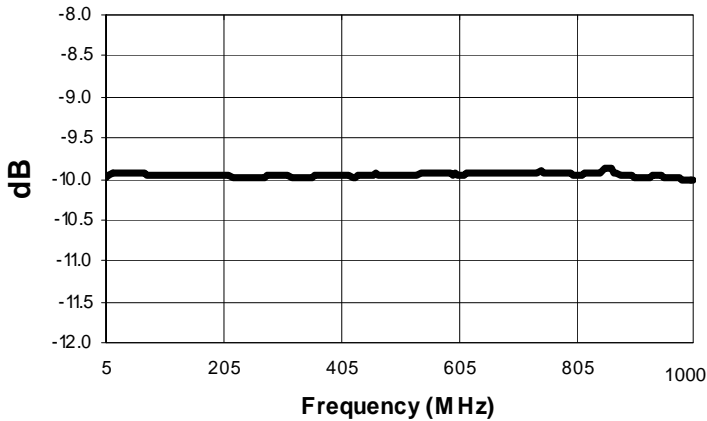
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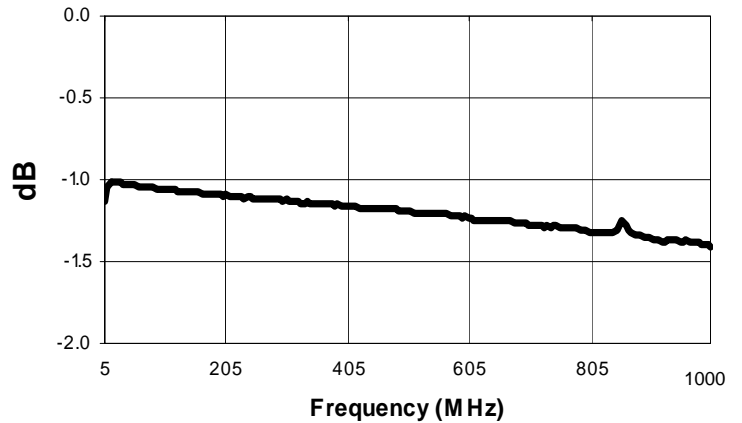
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Typical Performance Curves  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\Omega$

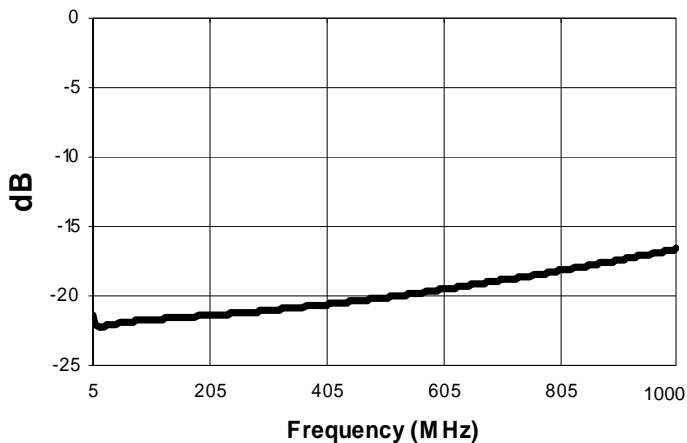
Coupling



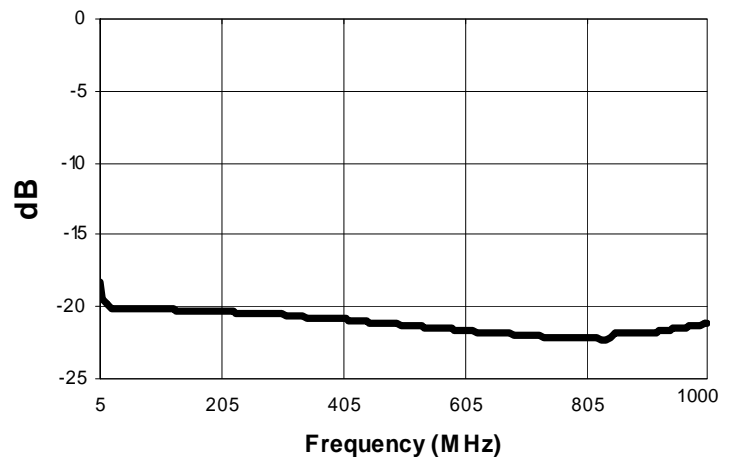
Main Line Loss



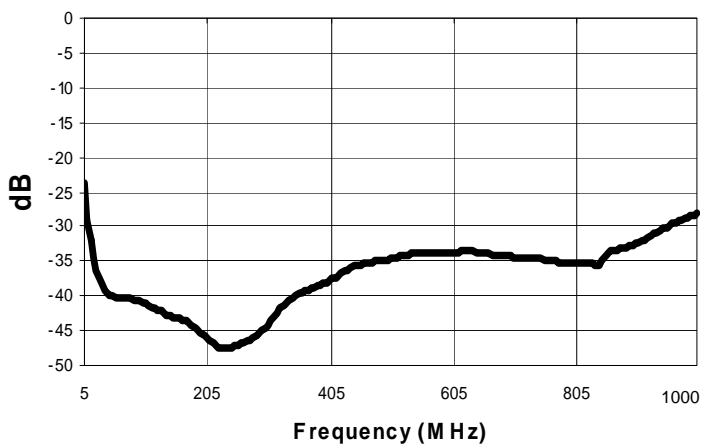
Directivity



Input Return Loss



Output Return Loss



Coupling Return Loss

