

## Coupler 8dB 5 – 1218 MHz

Rev. V2

### Features

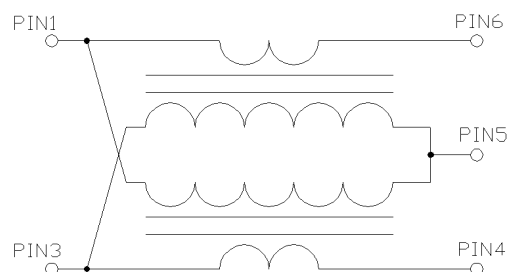
- Surface mount
- Typical Coupling 8dB
- 260° reflow compatible
- RoHS compliant and lead free
- Stable over large temperature range

### Description

MACP-010250-C808A0 is a 8dB 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 and Broadband applications.



### Functional Schematic



### Ordering Information

| Part Number        | Package             |
|--------------------|---------------------|
| MACP-010250-C808A0 | Tape & Reel         |
| MACP-010250-C808TB | Customer Test Board |

### Pin Configuration

| Pin No. | Function                         |
|---------|----------------------------------|
| 1       | Output                           |
| 3       | Isolation (external 75 Ohm load) |
| 4       | Coupling                         |
| 5       | Ground                           |
| 6       | Input                            |

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

| Parameter                       | Test Conditions               | Units    | Min.     | Typ.       | Max.       |
|---------------------------------|-------------------------------|----------|----------|------------|------------|
| Frequency Range                 |                               | MHz      | 5        |            | 1218       |
| Impedance                       |                               | $\Omega$ |          | 75         |            |
| Coupling                        |                               |          |          | 8          |            |
| Coupling<br>(Pin6 - Pin4)       | 5 - 1218 MHz                  | dB       | -        | 8.6        | $\pm 0.8$  |
| Main Line Loss<br>(Pin6 - Pin1) | 5 - 500 MHz<br>500 - 1218 MHz | dB<br>dB | -<br>-   | 1.5<br>1.6 | 1.8<br>2.3 |
| Input Return Loss<br>(Pin6)     | 5 - 1218 MHz                  | dB       | 14       | 19         | -          |
| Output Return Loss<br>(Pin1)    | 5 - 1218 MHz                  | dB       | 18       | 37         | -          |
| Coupling Return Loss<br>(Pin4)  | 5 - 1218 MHz                  | dB       | 14       | 18         | -          |
| Isolation Return Loss<br>(Pin3) | 5 - 1218 MHz                  | dB       | 18       | 32         | -          |
| Isolation<br>(Pin6-3)           | 5 - 250 MHz<br>250 - 1218 MHz | dB<br>dB | 25<br>18 | 27<br>24   | -          |

## Recommended Maximum Ratings

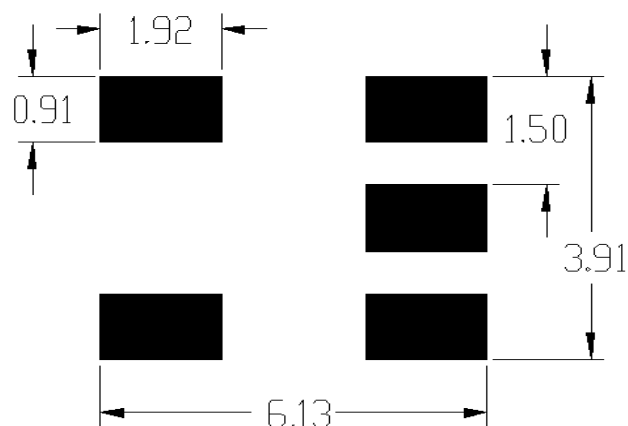
| Parameter                   | Units            | Min | Max |
|-----------------------------|------------------|-----|-----|
| Input Power                 | mW               |     | 631 |
| DC Current                  | mA               |     | 600 |
| Operating Temperature Range | $^\circ\text{C}$ | -40 | 105 |

Full temperature plots available on request

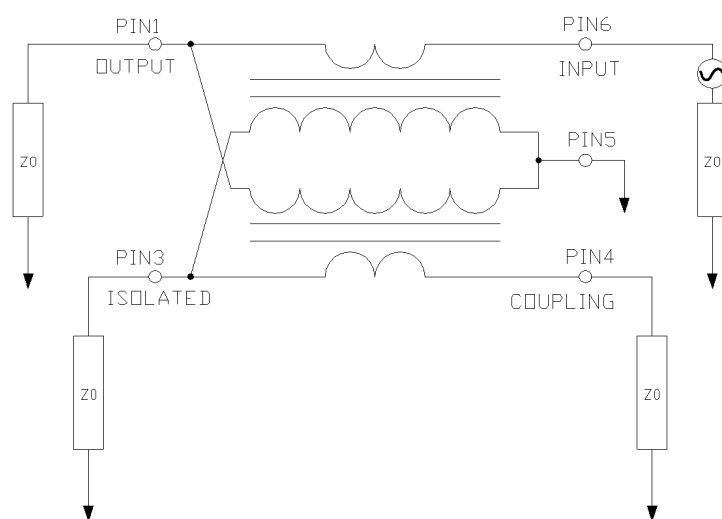
**Coupler 8dB**  
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## PCB Layout



## Application Schematic

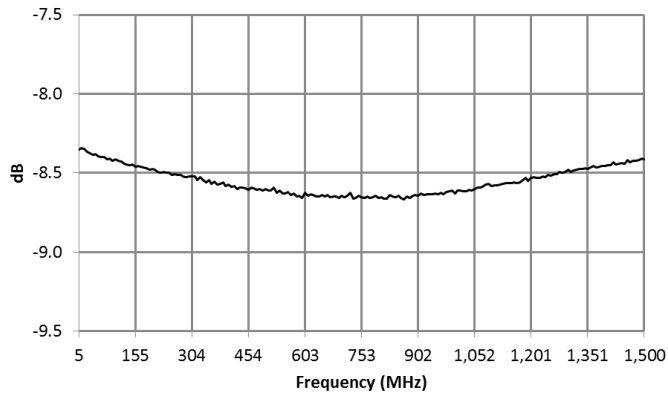


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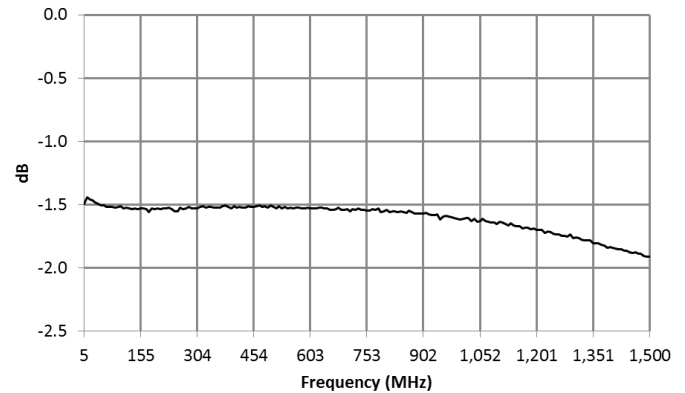
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### Typical Performance Curves

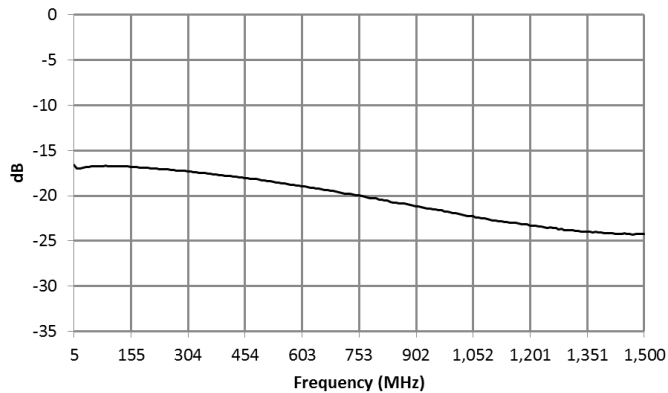
Coupling (pin6-4)



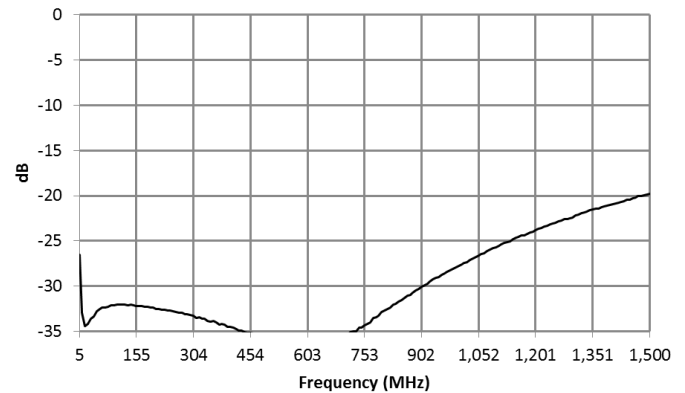
Main Line Loss (pin6-1)



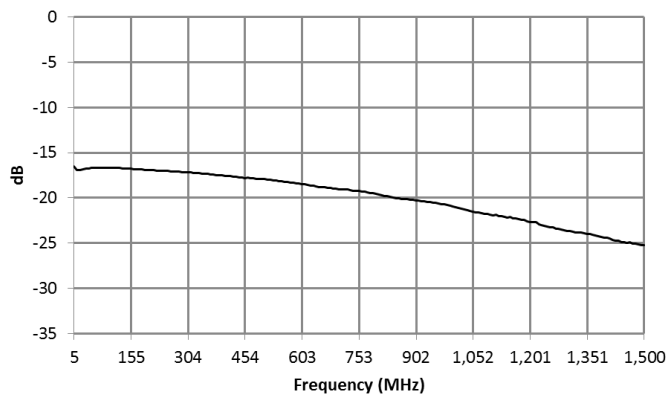
Input Return Loss (pin6)



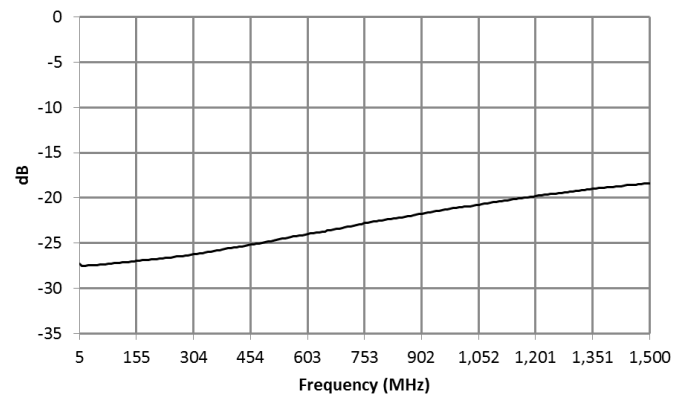
Output Return Loss (pin1)



Coupling Return Loss (pin4)



Isolation (pin6-3)

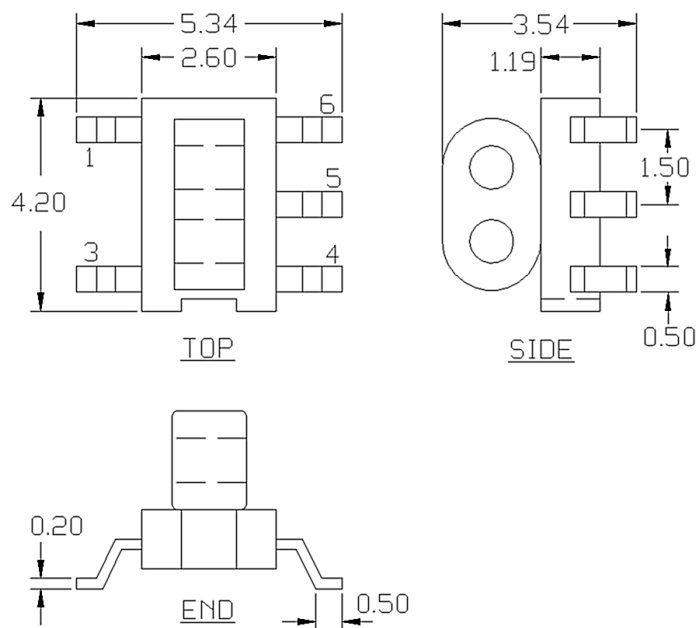


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### Outline Drawing

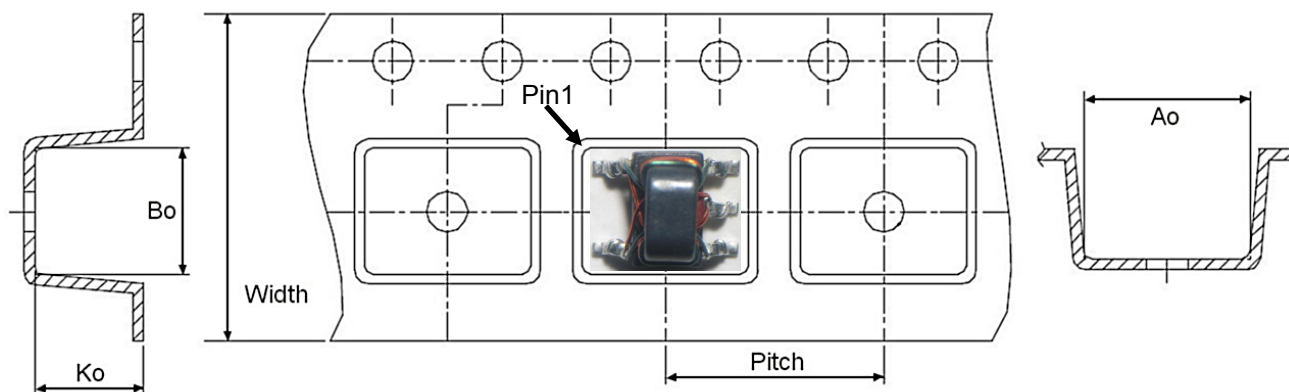


### Tape & Reel Information

| Parameter                                          | Units | Value |
|----------------------------------------------------|-------|-------|
| Qty per reel                                       | -     | 2000  |
| Reel Size                                          | mm    | 330   |
| Tape Width                                         | mm    | 12.00 |
| Pitch                                              | mm    | 8.00  |
| Ao                                                 | mm    | 6.1   |
| Bo                                                 | mm    | 4.6   |
| Ko                                                 | mm    | 4.0   |
| Orientation                                        | -     | F26   |
| Reference Application Note ANI-019 for orientation |       |       |

1. Dimensions in mm.
2. Tolerance:  $\pm 0.2$ mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Finish: Lead plating (CuSn6) Lead finish SAC-305

### Carrier Tape Orientation



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