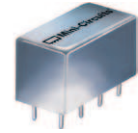


# Plug-In Directional Coupler

## PDC-10-5+

50Ω 1 to 2000 MHz



### Maximum Ratings

|   |                |
|---|----------------|
| Operating Temperature   | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| Permanent damage may occur if any of these limits are exceeded. |                |

### Pin Connections

|             |         |
|-------------|---------|
| INPUT       | 1       |
| OUTPUT      | 4       |
| COUPLED     | 3       |
| GROUND      | 2,5,7,8 |
| CASE GROUND | 2,5,7,8 |
| NOT USED    | 6       |

### Features

- very wideband, 1 to 2000 MHz
- excellent directivity, 30 dB typ.
- rugged welded construction, hermetically sealed

CASE STYLE: A01  
PRICE: \$43.20 ea. QTY. (1-9)

### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Applications

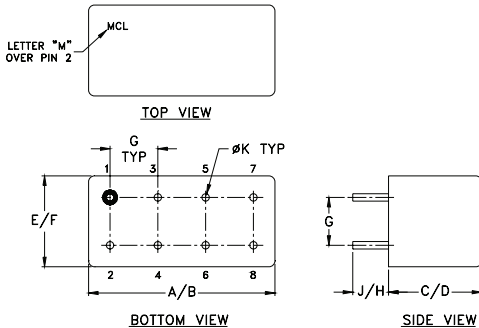
- cellular/GPS
- instrumentation
- communication receivers & transmitters

### Directional Coupler Electrical Specifications

| FREQ.<br>(MHz) | COUPLING<br>(dB) |          | MAINLINE LOSS <sup>1</sup><br>(dB) |      |      |      |      |      | DIRECTIVITY<br>(dB) |      |      |      |      |      | VSWR<br>(:1) | POWER<br>INPUT, W |     |    |
|----------------|------------------|----------|------------------------------------|------|------|------|------|------|---------------------|------|------|------|------|------|--------------|-------------------|-----|----|
|                | Nom.             | Flatness | L                                  |      | M    |      | U    |      | L                   |      | M    |      | U    |      |              | Typ.              | L   | MU |
|                |                  |          | Typ.                               | Max. | Typ. | Max. | Typ. | Max. | Typ.                | Min. | Typ. | Min. | Typ. | Min. |              |                   |     |    |
| 1-2000         | 10.5±0.5         | ±1.0     | 1.2                                | 1.9  | 1.3  | 1.9  | 2.0  | 2.5  | 38                  | 25   | 30   | 18   | 22   | 15   | 1.3          | 0.5               | 0.5 |    |

L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]  
1. Mainline loss includes theoretical power loss at coupled port.

### Outline Drawing

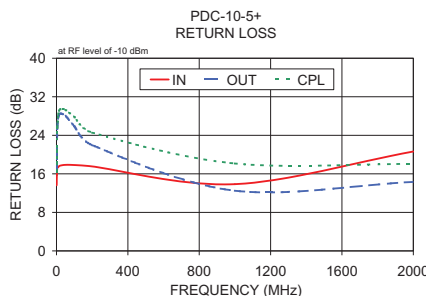
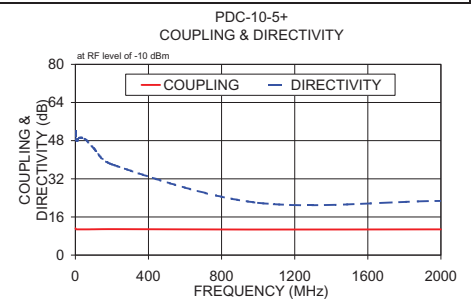
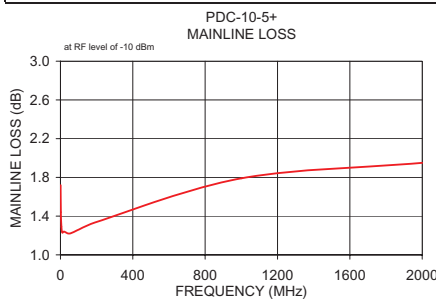


### Outline Dimensions (inch/mm)

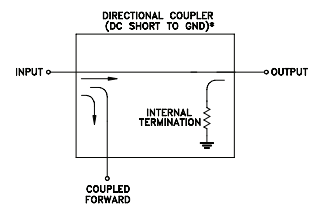
|       |       |      |       |      |       |
|-------|-------|------|-------|------|-------|
| A     | B     | C    | D     | E    | F     |
| .770  | .800  | .385 | .400  | .370 | .400  |
| 19.56 | 20.32 | 9.78 | 10.16 | 9.40 | 10.16 |
| G     | H     | J    | K     |      | wt    |
| .200  | .20   | .14  | .031  |      | grams |
| 5.08  | 5.08  | 3.56 | 0.79  |      | 5.2   |

### Typical Performance Data

| Frequency<br>(MHz) | Mainline Loss<br>(dB)<br>In-Out | Coupling<br>(dB)<br>In-Cpl | Directivity<br>(dB) | Return Loss<br>(dB) |       |       |
|--------------------|---------------------------------|----------------------------|---------------------|---------------------|-------|-------|
|                    |                                 |                            |                     | In                  | Out   | Cpl   |
| 1.00               | 1.72                            | 11.26                      | 51.91               | 13.62               | 16.54 | 16.42 |
| 2.00               | 1.44                            | 10.99                      | 48.59               | 15.74               | 20.60 | 20.51 |
| 5.00               | 1.29                            | 10.82                      | 48.39               | 17.27               | 25.50 | 25.75 |
| 10.00              | 1.23                            | 10.78                      | 47.89               | 17.43               | 27.76 | 28.35 |
| 20.00              | 1.24                            | 10.78                      | 49.11               | 17.70               | 28.51 | 29.38 |
| 50.00              | 1.22                            | 10.78                      | 48.83               | 17.86               | 28.03 | 29.30 |
| 100.00             | 1.26                            | 10.84                      | 44.88               | 17.82               | 25.88 | 27.79 |
| 200.00             | 1.34                            | 10.88                      | 38.04               | 17.53               | 21.96 | 24.56 |
| 1000.00            | 1.79                            | 10.73                      | 21.92               | 13.85               | 12.50 | 18.15 |
| 2000.00            | 1.95                            | 10.79                      | 22.74               | 20.63               | 14.32 | 18.05 |



### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

### Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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