

# Coaxial Directional Coupler

## ZFDC-10-5+ ZFDC-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.

### Coaxial Connections

|         |   |
|---------|---|
| INPUT   | 1 |
| OUTPUT  | 2 |
| COUPLED | 3 |

### Features

- very wideband, 1 to 2000 MHz
- excellent directivity, 30 dB typ.
- rugged shielded case

### Applications

- cellular
- instrumentation
- communication receivers & transmitters
- GPS

BNC version shown  
CASE STYLE: K18

| Connectors           | Model          | Price   | Qty.  |
|----------------------|----------------|---------|-------|
| BNC                  | ZFDC-10-5(+)   | \$84.95 | (1-9) |
| SMA                  | ZFDC-10-5-S+   | \$89.95 | (1-9) |
| N-TYPE               | ZFDC-10-5-N(+) | \$89.95 | (1-9) |
| BRACKET (OPTION "B") |                | \$2.50  | (1+)  |

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

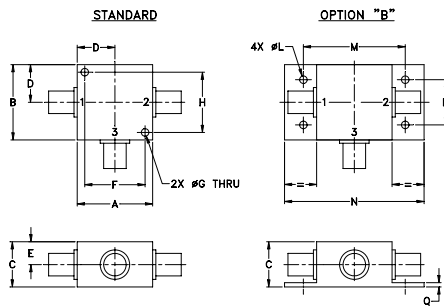
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Directional Coupler Electrical Specifications

| FREQ. RANGE (MHz) | COUPLING (dB) |          | MAINLINE LOSS <sup>1</sup> (dB) |      |      |      | DIRECTIVITY (dB) |      |      | VSWR (:1) | POWER INPUT (W) |      |      |      |      |     |
|-------------------|---------------|----------|---------------------------------|------|------|------|------------------|------|------|-----------|-----------------|------|------|------|------|-----|
|                   | Nom.          | Flatness | L                               |      | M    |      | U                |      | L    |           | M               | U    | L    | MU   |      |     |
| $f_L$ - $f_U$     |               |          | Typ.                            | Max. | Typ. | Max. | Typ.             | Max. | Typ. | Min.      | Typ.            | Min. | Typ. | Max. | Max. |     |
| 1-2000            | 10.8±0.5      | ±0.5     | 1.2                             | 1.9  | 1.2  | 1.8  | 1.8              | 2.5  | 38   | 25        | 30              | 18   | 22   | 18   | 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)

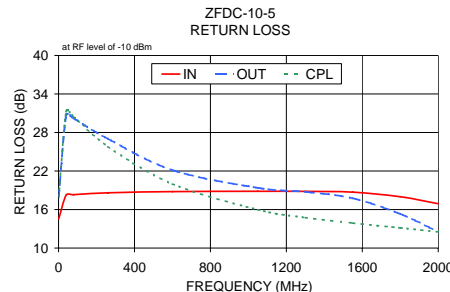
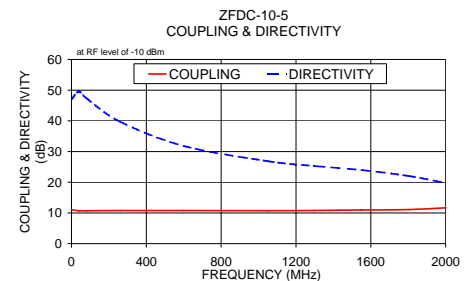
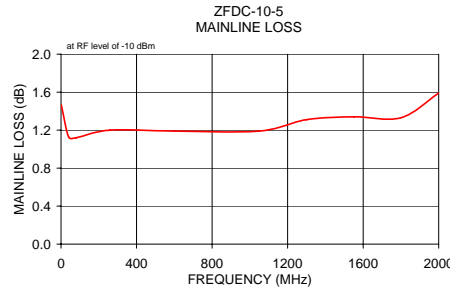
| A     | B     | C     | D     | E    | F     | G    | H     |
|-------|-------|-------|-------|------|-------|------|-------|
| 1.25  | 1.25  | .75   | .63   | .38  | 1.00  | .125 | 1.000 |
| 31.75 | 31.75 | 19.05 | 16.00 | 9.65 | 25.40 | 3.18 | 25.40 |

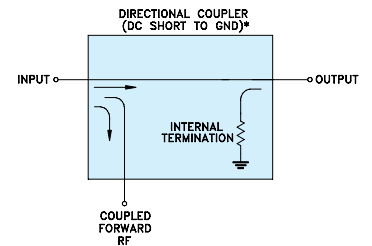
| J  | K  | L    | M     | N     | P     | Q    | wt    |
|----|----|------|-------|-------|-------|------|-------|
| -- | -- | .125 | 1.688 | 2.18  | .75   | .07  | grams |
| -- | -- | 3.18 | 42.88 | 55.37 | 19.05 | 1.78 | 70.0  |

### Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) |       | Cpl   |
|-----------------|---------------------------|----------------------|------------------|------------------|-------|-------|
|                 |                           |                      |                  | In               | Out   |       |
| 1.00            | 1.47                      | 11.03                | 47.08            | 14.55            | 18.01 | 18.03 |
| 40.00           | 1.13                      | 10.71                | 49.57            | 18.26            | 30.69 | 31.26 |
| 80.00           | 1.12                      | 10.70                | 47.38            | 18.32            | 30.20 | 30.46 |
| 260.00          | 1.20                      | 10.78                | 39.74            | 18.61            | 27.02 | 25.80 |
| 600.00          | 1.19                      | 10.77                | 31.82            | 18.79            | 22.14 | 19.98 |
| 1050.00         | 1.19                      | 10.73                | 26.87            | 18.84            | 19.38 | 15.98 |
| 1300.00         | 1.31                      | 10.81                | 25.29            | 18.83            | 18.76 | 14.75 |
| 1550.00         | 1.34                      | 10.96                | 23.98            | 18.70            | 17.75 | 13.90 |
| 1800.00         | 1.33                      | 11.08                | 22.06            | 17.99            | 15.32 | 13.15 |
| 2000.00         | 1.59                      | 11.68                | 19.78            | 16.91            | 12.53 | 12.52 |



### Electrical Schematic



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

For detailed performance specs & shopping online see web site



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Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

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ZFDC-10-5  
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