

# Coaxial Directional Coupler

50Ω

10 to 1000 MHz

ZFDC-10-2



BNC version shown  
CASE STYLE: K18

## 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

- wideband, 10 to 1000 MHz
- excellent directivity, 30 dB typ.
- rugged shielded case

## Applications

- VHF/UHF
- cellular
- instrumentation
- communication receivers & transmitters

| Connectors           | Model       | Price   | Qty.  |
|----------------------|-------------|---------|-------|
| BNC                  | ZFDC-10-2   | \$51.95 | (1-9) |
| SMA                  | ZFDC-10-2-S | \$56.95 | (1-9) |
| N-TYPE               | ZFDC-10-2-N | \$56.95 | (1-9) |
| BRACKET (OPTION "B") |             | \$5.00  | (1+)  |

## Directional Coupler Electrical Specifications

| FREQ.<br>RANGE<br>(MHz) | COUPLING<br>(dB)               |      | MAINLINE LOSS <sup>1</sup><br>(dB) |      |      |      |      |      | DIRECTIVITY<br>(dB) |      |      |      |      |      | VSWR<br>(:1) | POWER<br>INPUT<br>(W) |     |
|-------------------------|--------------------------------|------|------------------------------------|------|------|------|------|------|---------------------|------|------|------|------|------|--------------|-----------------------|-----|
|                         |                                |      | L                                  |      | M    |      | U    |      | L                   |      | M    |      | U    |      |              |                       |     |
|                         | f <sub>L</sub> -f <sub>U</sub> | Nom. | Flatness                           | Typ. | Max. | Typ. | Max. | Typ. | Max.                | Typ. | Min. | Typ. | Min. | Typ. | Min.         | Typ.                  | L   |
| 10-1000                 | 10.75±0.5                      | ±0.5 | 1.5                                | 2.0  | 1.2  | 1.8  | 1.5  | 2.0  | 35                  | 28   | 30   | 25   | 27   | 20   | 1.5          | 1.5                   | 3.0 |

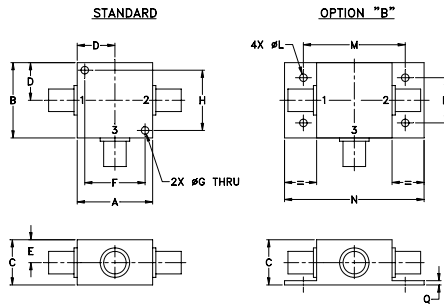
L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]

1. Mainline loss includes theoretical power loss at coupled port.

## Typical Performance Data

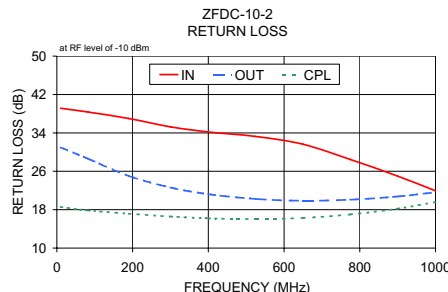
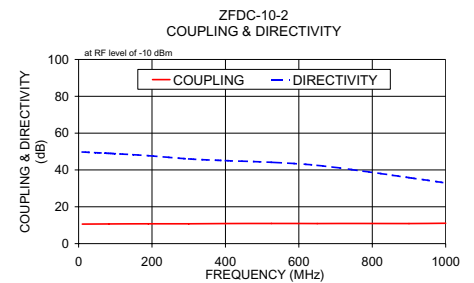
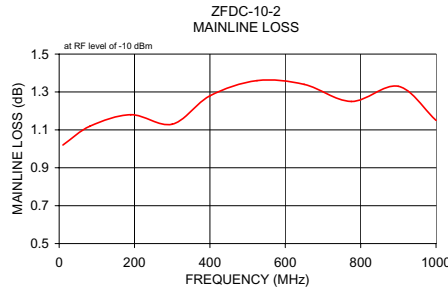
| Frequency<br>(MHz) | Mainline Loss<br>(dB)<br>In-Out | Coupling<br>(dB)<br>In-Cpl | Directivity<br>(dB) | In    | Return Loss<br>(dB)<br>Out | Cpl   |
|--------------------|---------------------------------|----------------------------|---------------------|-------|----------------------------|-------|
| 10.00              | 1.02                            | 10.60                      | 49.75               | 39.14 | 30.98                      | 18.57 |
| 82.00              | 1.12                            | 10.67                      | 49.03               | 38.36 | 28.65                      | 17.85 |
| 190.00             | 1.18                            | 10.76                      | 47.76               | 37.00 | 25.04                      | 17.16 |
| 300.00             | 1.13                            | 10.75                      | 46.01               | 35.26 | 22.63                      | 16.58 |
| 400.00             | 1.28                            | 10.89                      | 45.09               | 34.20 | 21.25                      | 16.22 |
| 525.00             | 1.36                            | 10.92                      | 44.18               | 33.26 | 20.24                      | 16.05 |
| 650.00             | 1.34                            | 10.89                      | 42.52               | 31.63 | 19.87                      | 16.29 |
| 775.00             | 1.25                            | 10.93                      | 39.39               | 28.46 | 20.10                      | 17.02 |
| 900.00             | 1.33                            | 10.88                      | 35.85               | 24.98 | 20.76                      | 18.22 |
| 1000.00            | 1.15                            | 11.06                      | 32.99               | 21.93 | 21.65                      | 19.61 |

## Outline Drawing

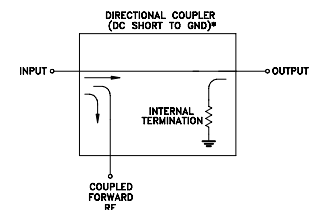


## Outline Dimensions (inch)

| 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  |



## Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMERS THAT ROUTES DC FROM RF PORTS TO GROUND.

## Notes

- A. 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.  
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[www.minicircuits.com](http://www.minicircuits.com) P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 [sales@minicircuits.com](mailto:sales@minicircuits.com)

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