

Coaxial Bi-Directional Coupler

50Ω Up to 25W 30 to 400 MHz

ZFDC-20-1H+ ZFDC-20-1H



BNC version shown

CASE STYLE: J17

| Connectors | Model | Price | Qty. |
|----------------------|-----------------|---------|-------|
| BNC | ZFDC-20-1H+ | \$58.95 | (1-9) |
| SMA | ZFDC-20-1H-S(+) | \$63.95 | (1-9) |
| N-TYPE | ZFDC-20-1H-N(+) | \$63.95 | (1-9) |
| BRACKET (OPTION "B") | | \$5.00 | (1+) |

+RoHS Compliant

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

Maximum Ratings

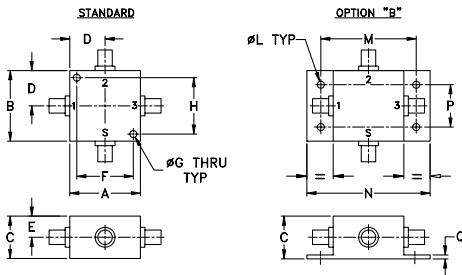
| | |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

| | |
|-------------------|---|
| INPUT | S |
| OUTPUT | 1 |
| COUPLED (forward) | 3 |
| COUPLED (reverse) | 2 |

Outline Drawing



Outline Dimensions (inch)

| | | | | | | | |
|-------|-------|-------|-------|------|-------|------|-------|
| A | B | C | D | E | F | G | H |
| 1.25 | 1.25 | .75 | .63 | .38 | 1.000 | .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 | 75.0 |

For option "B" with N-type connectors, dimension "C" increases to 0.94 inches.

Features

- high power, up to 25W
- wideband, 30 to 400 MHz
- excellent directivity, 30 dB typ.
- low mainline loss, 0.15 dB typ.
- rugged shielded case

Applications

- VHF/UHF
- instrumentation
- communication receivers & transmitters
- power leveling

Bi-Directional Coupler Electrical Specifications

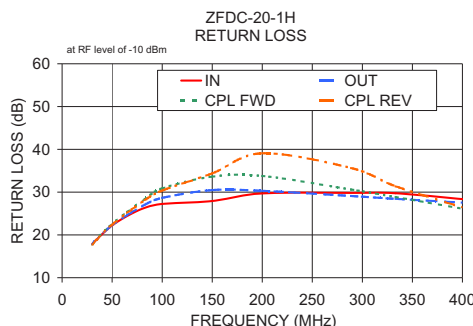
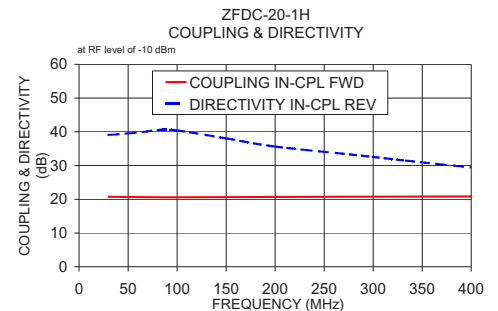
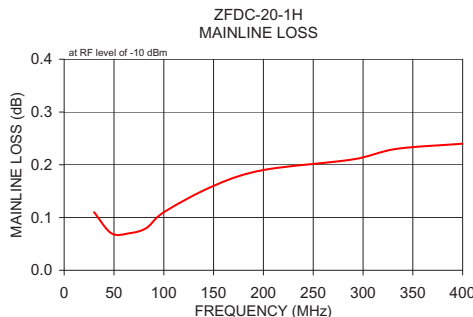
| FREQ. (MHz) | COUPLING (dB) | | MAINLINE LOSS ¹ (dB) | | | | DIRECTIVITY (dB) | | | VSWR (:1) | POWER INPUT, W | | | | | | |
|--------------------------------|------------------|----------|------------------------------------|------|------|------|---------------------|------|------|--------------|-------------------|------|------|------|------|----|----|
| | Nom. | Flatness | L | | M | | U | | Typ. | | L | MU | | | | | |
| f _L -f _U | | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Min. | Typ. | Min. | Typ. | Max. | Max. | | |
| 30-400 | 20.5±0.5 | ±0.4 | 0.15 | 0.4 | 0.15 | 0.4 | 0.3 | 0.4 | 30 | 25 | 30 | 25 | 30 | 23 | 1.2 | 25 | 25 |

L= 30-100 MHz M= 100-200 MHz U= 200-400 MHz

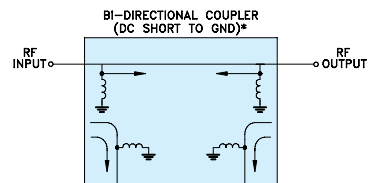
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) | | Coupling (dB) | | Directivity (dB) | | Return Loss (dB) | | | |
|--------------------|-----------------------|------------|------------------|-------------|---------------------|-------|---------------------|---------|---------|--|
| | In-Out | In-Cpl Fwd | Out-Cpl Rev | Out-Cpl Fwd | In-Cpl Rev | In | Out | Cpl Fwd | Cpl Rev | |
| 30.00 | 0.11 | 20.74 | 20.73 | 36.33 | 39.08 | 17.88 | 17.93 | 17.83 | 17.78 | |
| 47.50 | 0.07 | 20.68 | 20.66 | 36.66 | 39.46 | 21.75 | 21.84 | 22.02 | 21.88 | |
| 65.00 | 0.07 | 20.63 | 20.62 | 36.97 | 39.93 | 24.43 | 24.65 | 25.33 | 25.13 | |
| 82.50 | 0.08 | 20.59 | 20.58 | 37.14 | 40.58 | 26.31 | 27.05 | 28.32 | 28.10 | |
| 100.00 | 0.11 | 20.59 | 20.58 | 37.19 | 40.42 | 27.24 | 28.65 | 30.88 | 30.36 | |
| 150.00 | 0.16 | 20.63 | 20.62 | 38.74 | 38.06 | 27.92 | 30.48 | 33.62 | 34.39 | |
| 200.00 | 0.19 | 20.69 | 20.67 | 36.80 | 35.64 | 29.69 | 30.30 | 33.78 | 39.07 | |
| 288.89 | 0.21 | 20.77 | 20.74 | 33.49 | 32.92 | 29.81 | 29.10 | 30.60 | 35.64 | |
| 333.33 | 0.23 | 20.80 | 20.77 | 31.88 | 31.46 | 29.73 | 28.43 | 28.85 | 31.36 | |
| 400.00 | 0.24 | 20.83 | 20.80 | 29.81 | 29.45 | 28.38 | 27.54 | 26.14 | 26.41 | |



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-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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