

# Coaxial Bi-Directional Coupler

## ZFBDC20-62HP+

50Ω Up to 50W 10 to 600 MHz

### Maximum Ratings

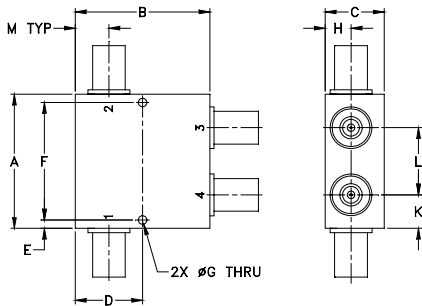
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |

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

### Coaxial Connections

|                   |   |
|-------------------|---|
| INPUT             | 1 |
| OUTPUT            | 2 |
| COUPLED (forward) | 4 |
| COUPLED (reverse) | 3 |

### Outline Drawing



### Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E    | F     | G     |
|-------|-------|-------|-------|------|-------|-------|
| 2.00  | 2.00  | .88   | 1.000 | 0.13 | 1.750 | 0.125 |
| 50.80 | 50.80 | 22.35 | 25.40 | 3.30 | 44.45 | 3.18  |

| H    | J  | K     | L     | M     | wt    |
|------|----|-------|-------|-------|-------|
| 0.38 | -- | 0.50  | 1.00  | 0.50  | grams |
| 9.65 | -- | 12.70 | 25.40 | 12.70 | 250.0 |

### Features

- excellent mainline loss, 0.25 dB typ.
- excellent directivity, 25 dB typ.
- high power, up to 50W
- rugged shielded case

### Applications

- power leveling & monitoring
- military mobile



Generic photo used for illustration purposes only  
SMA version shown

CASE STYLE: JD1252

| Connectors | Model           |
|------------|-----------------|
| BNC        | ZFBDC20-62HP+   |
| SMA        | ZFBDC20-62HP-S+ |

**+RoHS Compliant**

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

### Bi-Directional Coupler Electrical Specifications

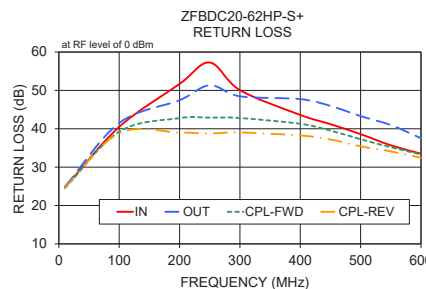
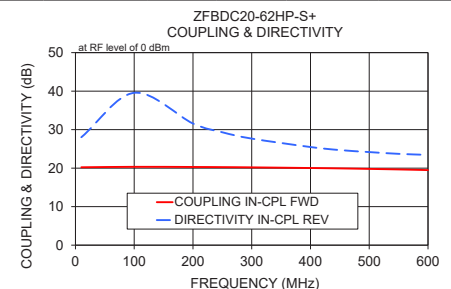
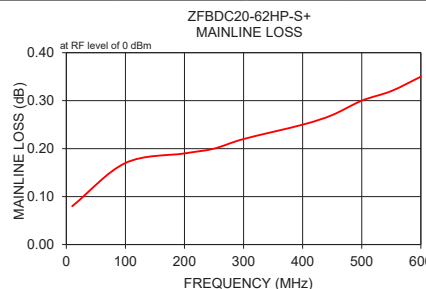
| FREQ. (MHz)   | COUPLING (dB) |          | MAINLINE LOSS <sup>1</sup> (dB) |      | DIRECTIVITY (dB) |      | VSWR (:1) | POWER <sup>2</sup> INPUT (W) |
|---------------|---------------|----------|---------------------------------|------|------------------|------|-----------|------------------------------|
|               | Nom.          | Flatness | Typ.                            | Max. | Typ.             | Min. |           |                              |
| $f_L$ - $f_U$ |               |          |                                 |      |                  |      | Typ.      | Max.                         |
| 10-600        | 20.0±0.5      | ±0.9     | 0.25                            | 0.70 | 25               | 16   | 1.05      | 25                           |
| 10-450        | 20.2±0.5      | ±0.5     | 0.20                            | 0.50 | 28               | 19   | 1.05      | 50                           |

<sup>1</sup> Mainline loss includes theoretical power loss at coupled port.

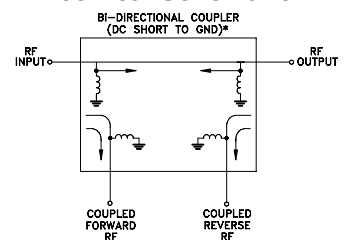
<sup>2</sup> Power rating is specified up to +55°C. Power Input Specifications at +100°C is 50% value at +55°C. For specifications limits between +55°C and +100°C, derate linearly.

### 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 |
| 10.00           | 0.08               | 20.22         | 20.16      | 28.32            | 28.02       | 24.73            | 24.90 | 24.55 | 24.68   |
| 100.00          | 0.17               | 20.34         | 20.24      | 38.07            | 39.56       | 40.49            | 41.50 | 39.26 | 38.86   |
| 200.00          | 0.19               | 20.30         | 20.29      | 30.76            | 31.59       | 51.68            | 47.45 | 42.77 | 39.00   |
| 250.00          | 0.20               | 20.26         | 20.29      | 28.54            | 29.31       | 57.26            | 51.33 | 42.90 | 38.78   |
| 300.00          | 0.22               | 20.20         | 20.30      | 27.39            | 27.67       | 50.07            | 48.46 | 42.80 | 39.03   |
| 400.00          | 0.25               | 20.03         | 20.26      | 25.18            | 25.48       | 43.61            | 47.73 | 41.30 | 38.25   |
| 450.00          | 0.27               | 19.93         | 20.22      | 24.33            | 24.69       | 41.20            | 45.96 | 39.53 | 37.21   |
| 500.00          | 0.30               | 19.80         | 20.15      | 23.67            | 24.17       | 38.61            | 43.31 | 37.27 | 35.43   |
| 550.00          | 0.32               | 19.66         | 20.07      | 23.13            | 23.71       | 35.69            | 40.97 | 35.19 | 34.11   |
| 600.00          | 0.35               | 19.49         | 19.95      | 22.75            | 23.44       | 33.51            | 37.54 | 33.31 | 32.45   |



### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMERS 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.
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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

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