

# High Power Bi-Directional Coupler

## ZABDC50-150HP+

50Ω Up to 100W 0.4 to 15 MHz

### Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| Operating Temperature                                           | -55°C to 75°C  |
| Storage Temperature                                             | -55°C to 100°C |
| Permanent damage may occur if any of these limits are exceeded. |                |

### Coaxial Connections

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

### Features

- good coupling flatness, 0.5 dB typ.
- high directivity, 30 dB typ.
- excellent VSWR, 1.03:1 typ.
- high power, up to 100W
- extremely low insertion loss, 0.01 dB typ.

### Applications

- HF radios
- AM radio, amateur radio, medical ultrasound



CASE STYLE: HHH141

| Connectors | Model          |
|------------|----------------|
| N-Type/SMA | ZABDC50-150HP+ |

### +RoHS Compliant

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

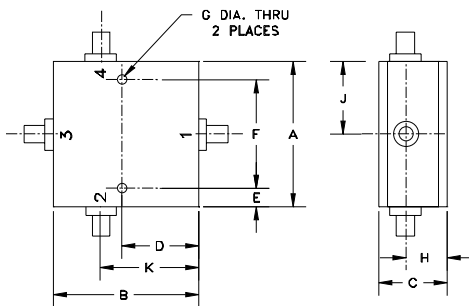
### Electrical Specifications at 25°C

| Parameter              | Condition (MHz) | Min. | Typ. | Max. | Unit |
|------------------------|-----------------|------|------|------|------|
| Frequency Range        |                 | 0.4  | —    | 15   | MHz  |
| Mainline Loss          | 0.4-15          | —    | 0.01 | 0.1  | dB   |
| Coupling               | 0.4-15          | 49   | 50   | 51.5 | dB   |
| Coupling Flatness(±)   | 0.4-15          | —    | 0.5  | —    | dB   |
| Directivity            | 0.4-15          | 20   | 30   | —    | dB   |
| Return Loss (Input)    | 0.4-15          | 22   | 33   | —    | dB   |
| Return Loss (Output)   | 0.4-15          | 22   | 33   | —    | dB   |
| Return Loss (Coupling) | 0.4-15          | 27   | 36   | —    | dB   |
| Input Power            |                 | —    | —    | 100  | W    |

### Typical Performance Data

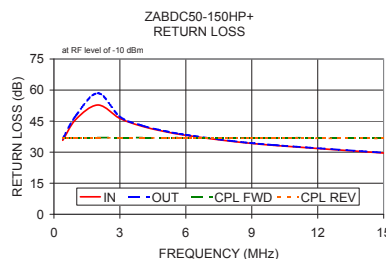
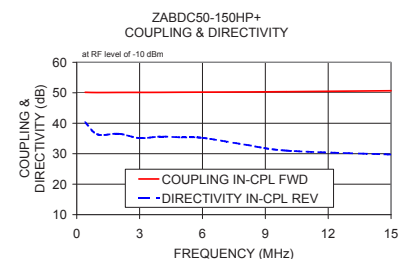
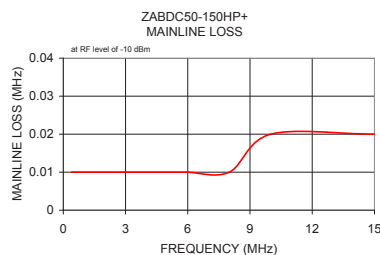
| Frequency<br>(MHz) | Mainline Loss<br>(dB) | Coupling<br>(dB) |            | Directivity<br>(dB) |             | Return Loss<br>(dB) |       |       |         |
|--------------------|-----------------------|------------------|------------|---------------------|-------------|---------------------|-------|-------|---------|
|                    |                       | In-Out           | In-Cpl Fwd | Out-Cpl Rev         | Out-Cpl Fwd | In-Cpl Rev          | In    | Out   | Cpl Fwd |
| 0.40               | 0.01                  | 50.15            | 50.10      | 32.18               | 40.29       | 35.74               | 36.52 | 37.04 | 36.94   |
| 1.00               | 0.01                  | 50.08            | 50.10      | 35.11               | 36.32       | 45.88               | 47.67 | 37.03 | 36.94   |
| 2.00               | 0.01                  | 50.11            | 50.11      | 35.65               | 36.55       | 52.79               | 58.48 | 37.03 | 36.94   |
| 3.00               | 0.01                  | 50.12            | 50.13      | 35.04               | 35.13       | 46.31               | 47.13 | 37.04 | 36.92   |
| 4.00               | 0.01                  | 50.14            | 50.12      | 35.59               | 35.62       | 42.55               | 42.92 | 37.02 | 36.88   |
| 5.00               | 0.01                  | 50.18            | 50.16      | 35.68               | 35.36       | 40.05               | 40.33 | 37.02 | 36.87   |
| 6.00               | 0.01                  | 50.20            | 50.16      | 35.44               | 35.20       | 38.16               | 38.38 | 37.00 | 36.84   |
| 8.00               | 0.01                  | 50.26            | 50.24      | 35.34               | 33.02       | 35.36               | 35.53 | 36.98 | 36.79   |
| 10.00              | 0.02                  | 50.36            | 50.36      | 36.11               | 31.02       | 33.30               | 33.45 | 36.97 | 36.76   |
| 15.00              | 0.02                  | 50.67            | 50.61      | 34.91               | 29.72       | 29.59               | 29.73 | 36.92 | 36.64   |

### Outline Drawing

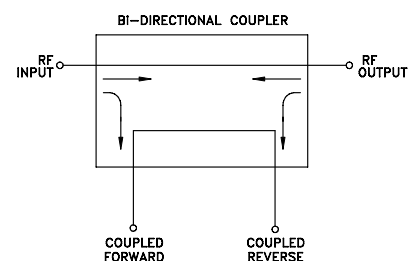


### Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E     | F     |
|-------|-------|-------|-------|-------|-------|
| 2.00  | 2.00  | .95   | 1.062 | .125  | 1.75  |
| 50.80 | 50.80 | 24.13 | 26.97 | 3.18  | 44.45 |
| G     | H     | J     | K     | wt    |       |
| .125  | .575  | 1.00  | 1.35  | grams |       |
| 3.18  | 14.61 | 25.40 | 34.29 | 200   |       |



### Electrical Schematic



#### 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.  
B. 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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