

# Coaxial Directional Coupler

## ZX30-9-4+

50Ω 5 to 1200 MHz



CASE STYLE: FL905

### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°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 flat coupling
- very broad, multi-octave
- all welded construction
- protected by U.S. Patents 6,140,887 & 6,784,521 & 6,790,049

### Applications

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

| Connectors | Model       |
|------------|-------------|
| SMA        | ZX30-9-4-S+ |

### +RoHS Compliant

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

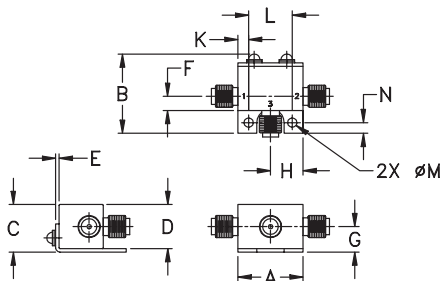
### Directional Coupler Electrical Specifications (T<sub>AMB</sub> = 25°C)

| FREQ. (MHz)                    | COUPLING (dB) |               | MAINLINE LOSS <sup>1</sup> (dB) |      |      |      |      |      | DIRECTIVITY (dB) |      |      |      |      |      | VSWR (:1) | POWER INPUT, W |      |    |
|--------------------------------|---------------|---------------|---------------------------------|------|------|------|------|------|------------------|------|------|------|------|------|-----------|----------------|------|----|
|                                | Nom.          | Typ. Flatness | L                               |      | M    |      | U    |      | L                |      | M    |      | U    |      |           | Typ.           | L    | MU |
| f <sub>L</sub> -f <sub>U</sub> |               |               | Typ.                            | Max. | Typ. | Max. | Typ. | Max. | Typ.             | Min. | Typ. | Min. | Typ. | Min. | Typ.      | Max.           | Max. |    |
| 5-1200                         | 8.9±0.5       | ±0.1          | 1.1                             | 1.4  | 1.1  | 1.4  | 1.3  | 1.8  | 21               | 19   | 20   | 15   | 16   | 12   | 1.2       | 0.5            | 1.0  |    |

L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

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

### Outline Drawing

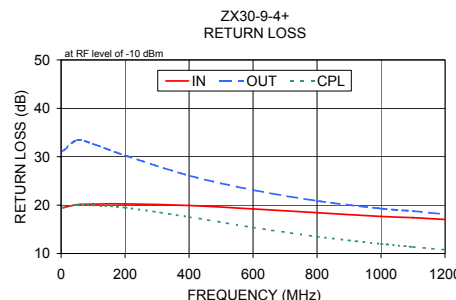
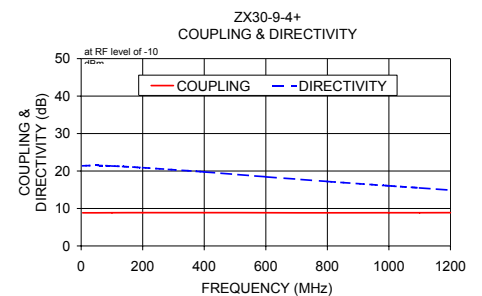
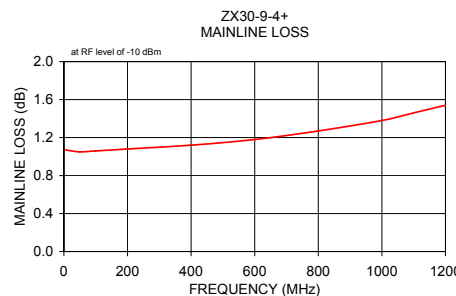


### Outline Dimensions (inch/mm)

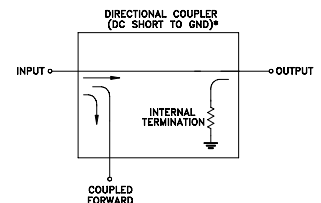
|       |       |       |       |      |      |       |
|-------|-------|-------|-------|------|------|-------|
| A     | B     | C     | D     | E    | F    | G     |
| .74   | .90   | .54   | .50   | .04  | .16  | .29   |
| 18.80 | 22.86 | 13.72 | 12.70 | 1.02 | 4.06 | 7.37  |
| H     | J     | K     | L     | M    | N    | wt    |
| .37   | --    | .122  | .496  | .106 | .122 | grams |
| 9.40  | --    | 3.10  | 12.60 | 2.69 | 3.10 | 20.0  |

### Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) |       |       |
|-----------------|---------------------------|----------------------|------------------|------------------|-------|-------|
|                 |                           |                      |                  | In               | Out   | Cpl   |
| 5.00            | 1.07                      | 8.84                 | 21.39            | 19.47            | 31.15 | 19.43 |
| 50.00           | 1.05                      | 8.84                 | 21.49            | 20.10            | 33.43 | 20.04 |
| 100.00          | 1.06                      | 8.86                 | 21.35            | 20.20            | 32.64 | 19.97 |
| 200.00          | 1.08                      | 8.88                 | 20.91            | 20.25            | 30.27 | 19.49 |
| 400.00          | 1.12                      | 8.88                 | 19.77            | 19.93            | 26.11 | 17.56 |
| 600.00          | 1.18                      | 8.86                 | 18.46            | 19.22            | 23.13 | 15.39 |
| 800.00          | 1.27                      | 8.85                 | 17.21            | 18.44            | 20.89 | 13.50 |
| 1000.00         | 1.38                      | 8.86                 | 16.07            | 17.66            | 19.30 | 11.99 |
| 1100.00         | 1.46                      | 8.87                 | 15.50            | 17.40            | 18.78 | 11.37 |
| 1200.00         | 1.54                      | 8.88                 | 14.90            | 17.03            | 18.14 | 10.77 |



### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR 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.
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