*Coaxial*

# High Power Combiner

# ZB4CS-440-12W

## 4 Way-0° 50Ω 100 to 440 MHz

### Maximum Ratings

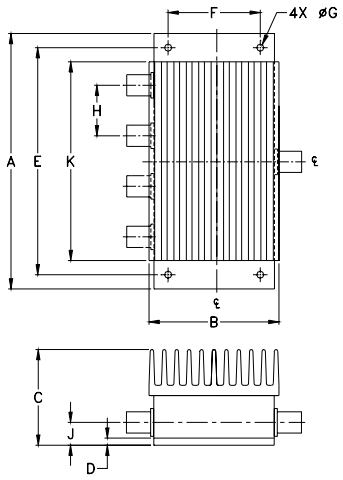
| | |
|---|---|
| Operating Temperature | -55°C to 90°C |
| Storage Temperature | -55°C to 100°C |

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

### Coaxial Connections

| | |
|---|---|
| SUM PORT | S |
| PORT 1 | 1 |
| PORT 2 | 2 |
| PORT 3 | 3 |
| PORT 4 | 4 |

### Outline Drawing




### Outline Dimensions (inch / mm)

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 4.50 | 2.25 | 1.69 | .125 | 4.000 | 1.625 |
| 114.30 | 57.15 | 42.93 | 3.18 | 101.60 | 41.28 |

| G | H | J | K | wt |
|---|---|---|---|---|
| .144 | .890 | .44 | 3.50 | grams |
| 3.66 | 22.61 | 11.18 | 88.90 | 500 |

### Features

- high power, up to 12W input power
- wideband, 100 to 440 MHz
- low insertion loss, 0.6 dB typ.
- high isolation, 27 dB typ.

### Applications

- VHF/UHF
- communication receivers & transmitters

*BNC version shown*

CASE STYLE: AW256

| Connectors | Model |
|---|---|
| **BNC** | ZB4CS-440-12W |
| **N-TYPE** | ZB4CS-440-12W-N |
| **SMA** | ZB4CS-440-12W-S |

### High Power Combiner Electrical Specifications

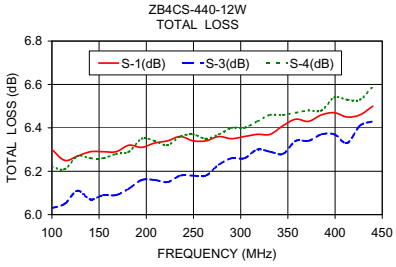
| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS (dB) ABOVE 6.0 dB | | PHASE UNBALANCE (Degrees) | | AMPLITUDE UNBALANCE (dB) | | POWER INPUT[1] (W) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | as combiner[2] | as splitter |
| $f_L$-$f_U$ | Typ. | Min. | Typ. | Max. | Typ. | Max. | Typ. | Max. | Max. | Max. |
| 100-440 | 27 | 17 | 0.6 | 1.2 | 0.8 | 4.0 | 0.15 | 0.5 | 12 | 10 |

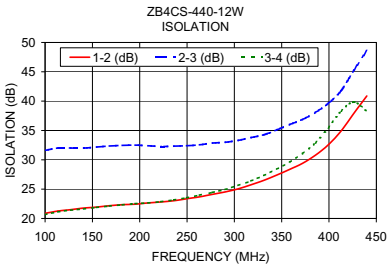
1. Over -55°C to +55°C. Derate linearly to 20% of rating at 90°C
2. As a combiner of non-coherent signals, max. power per port is power rating divided by number of ports.

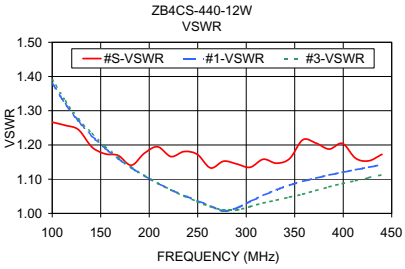
### Typical Performance Data

| Freq. (MHz) | Total Loss[1] (dB) | | | | Amp. Unbal. (dB) | Isolation (dB) | | | Phase Unbal. (deg.) | VSWR S | VSWR 1 | VSWR 2 | VSWR 3 | VSWR 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S-1 | S-2 | S-3 | S-4 | | 1-2 | 2-3 | 3-4 | | | | | | |
| 100.00 | 6.30 | 6.20 | 6.03 | 6.22 | 0.26 | 20.88 | 31.60 | 20.67 | 0.56 | 1.27 | 1.38 | 1.38 | 1.39 | 1.38 |
| 113.60 | 6.25 | 6.26 | 6.05 | 6.21 | 0.21 | 21.27 | 32.00 | 21.12 | 0.47 | 1.26 | 1.32 | 1.32 | 1.33 | 1.31 |
| 127.20 | 6.27 | 6.28 | 6.11 | 6.27 | 0.16 | 21.50 | 32.01 | 21.42 | 0.52 | 1.24 | 1.27 | 1.27 | 1.28 | 1.26 |
| 154.40 | 6.29 | 6.26 | 6.09 | 6.26 | 0.19 | 21.94 | 32.17 | 21.88 | 0.55 | 1.17 | 1.19 | 1.19 | 1.20 | 1.18 |
| 181.60 | 6.32 | 6.30 | 6.12 | 6.29 | 0.20 | 22.35 | 32.45 | 22.31 | 0.55 | 1.14 | 1.13 | 1.13 | 1.14 | 1.12 |
| 208.80 | 6.33 | 6.31 | 6.16 | 6.34 | 0.18 | 22.65 | 32.39 | 22.65 | 0.76 | 1.19 | 1.09 | 1.08 | 1.09 | 1.08 |
| 236.00 | 6.36 | 6.31 | 6.18 | 6.36 | 0.18 | 23.03 | 32.32 | 23.16 | 0.91 | 1.18 | 1.05 | 1.04 | 1.05 | 1.05 |
| 263.20 | 6.34 | 6.32 | 6.18 | 6.35 | 0.17 | 23.69 | 32.55 | 23.97 | 0.92 | 1.13 | 1.02 | 1.01 | 1.02 | 1.03 |
| 290.40 | 6.35 | 6.35 | 6.26 | 6.40 | 0.14 | 24.53 | 32.99 | 24.94 | 0.91 | 1.14 | 1.02 | 1.03 | 1.01 | 1.00 |
| 317.60 | 6.37 | 6.39 | 6.30 | 6.43 | 0.14 | 25.74 | 33.79 | 26.40 | 0.85 | 1.16 | 1.05 | 1.06 | 1.03 | 1.04 |
| 344.80 | 6.41 | 6.39 | 6.28 | 6.46 | 0.18 | 27.40 | 35.10 | 28.40 | 1.01 | 1.16 | 1.08 | 1.08 | 1.05 | 1.06 |
| 372.00 | 6.43 | 6.43 | 6.34 | 6.48 | 0.14 | 29.39 | 36.86 | 31.06 | 1.23 | 1.21 | 1.10 | 1.11 | 1.07 | 1.08 |
| 399.20 | 6.47 | 6.44 | 6.37 | 6.54 | 0.18 | 32.55 | 39.61 | 35.43 | 1.18 | 1.20 | 1.12 | 1.14 | 1.09 | 1.10 |
| 426.40 | 6.46 | 6.49 | 6.41 | 6.53 | 0.12 | 37.95 | 45.29 | 39.84 | 1.79 | 1.15 | 1.13 | 1.15 | 1.10 | 1.12 |
| 440.00 | 6.50 | 6.50 | 6.43 | 6.59 | 0.16 | 40.88 | 48.60 | 38.28 | 1.63 | 1.17 | 1.14 | 1.16 | 1.11 | 1.13 |

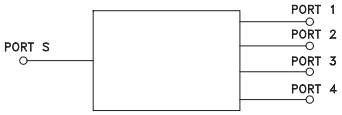
1. Total Loss = Insertion Loss + 6dB splitter loss.




### electrical schematic




Notes

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