

Wideband, DC Pass

Directional Coupler

ZCDC10-K1844+

50Ω 10dB Up to 17W 18 to 40 GHz

The Big Deal

- Wideband, 18 to 40 GHz
- Excellent Coupling Flatness, ± 0.2 dB typ.
- Power Handling up to 17W



CASE STYLE: HT2536-1

Product Overview

The Mini-Circuits' ZCDC10-K1844+ wideband directional coupler offers exceptional performance operating over 18 to 40 GHz. This coupler has excellent coupling flatness, good directivity, and power handling. It is ideal for lab testing applications as well as for power monitoring over wide bands, among other applications.

Key Features

| Feature | Advantages |
|--|---|
| Wide bandwidth | With a bandwidth spanning 18 to 40 GHz, ZCDC10-K1844+ coupler is ideal for most lab testing applications, avoiding the need to switch components for different frequency bands. |
| Excellent Directivity • 15 dB typ. up to 40 GHz | High directivity allows sampling of input powers with minimal detrimental effects due to output mismatches. |
| Excellent coupling flatness, ± 0.2 dB typ | Excellent coupling flatness over the entire frequency range minimizes the need for compensation circuits in most cases. |
| Good Return Loss (In & Out) • 16 dB typ. up to 40 GHz | Good return loss over 18 to 40 GHz minimizes undesired reflections and resulting amplitude ripple. |

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.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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ZCDC10-K1844+

50Ω 10dB Up to 17W 18 to 40 GHz



CASE STYLE: HT2536-1

| | |
|---------------|---------------|
| Connectors | Model |
| 2.92mm Female | ZCDC10-K1844+ |

+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 |
| Supplied Termination* | 1 W |
| DC Current | 0.6 A |

Permanent damage may occur if any of these limits are exceeded
* up to 25°C, derates linearly to 325mW at 100°C.

Coaxial Connections

| | |
|----------------------------|-----|
| INPUT | IN |
| OUTPUT | OUT |
| COUPLED | CPL |
| TERMINATION (50Ω) INCLUDED | — |

Features

- Wide frequency range, 18 to 40 GHz
- Good coupling flatness, ± 0.2 dB typ.
- Good directivity, 15 dB typ. up to 40 GHz
- Good return loss, 16 dB typ. up to 40 GHz
- DC current pass through input to output

Applications

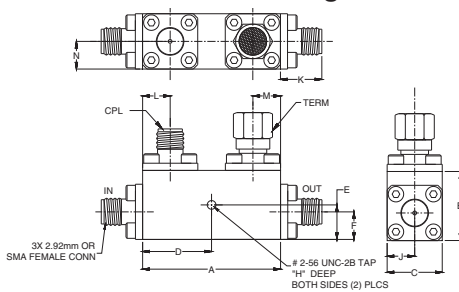
- 5G
- Mobile
- Fixed satellite
- Lab use

Electrical Specifications at 25°C

| Parameter | Frequency (GHz) | Min. | Typ. | Max. | Units |
|-----------------------------|-----------------|------|--------------|------|-------|
| Operating Frequency | | 18 | | 40 | GHz |
| Nominal Coupling | 18-40 | | 10 \pm 1.2 | | dB |
| Coupling Flatness (\pm) | 18-40 | | 0.2 | 0.7 | dB |
| Mainline Loss ¹ | 18-26.5 | | 0.9 | 1.2 | dB |
| | 26.5-40 | | 1.2 | 1.5 | dB |
| Directivity | 18-26.5 | 14.0 | 24 | | dB |
| | 26.5-40 | 12.0 | 21 | | dB |
| Return Loss (In & Out) | 18-26.5 | 12.7 | 25 | | dB |
| | 26.5-40 | 11.7 | 22 | | dB |
| Return Loss (Coupling) | 18-26.5 | 12.7 | 22 | | dB |
| | 26.5-40 | 11.7 | 20 | | dB |
| Input Power** | | | | 17 | W |

1. Mainline loss includes coupling loss
** Up to 25°C, derates linearly to 6W at 100°C.

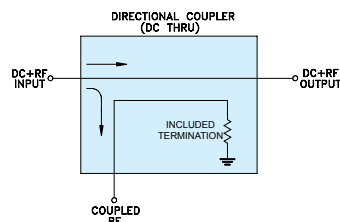
Outline Drawing



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|-------|------|-------|-------|-------|------|-------|
| 1.25 | 0.63 | 0.50 | 0.63 | 0.313 | 0.25 | -- |
| 31.75 | 16.0 | 12.7 | 15.88 | 7.95 | 6.35 | -- |
| H | J | K | L | M | N | wt |
| 0.120 | 0.25 | 0.43 | 0.25 | 0.25 | 0.25 | grams |
| 3.05 | 6.35 | 10.92 | 6.35 | 6.35 | 6.35 | 50 |

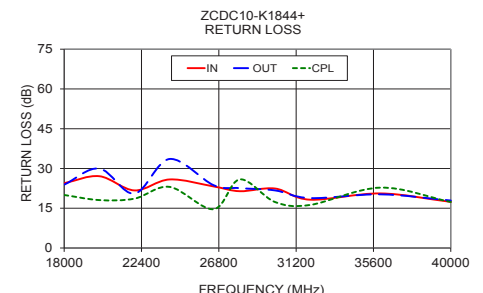
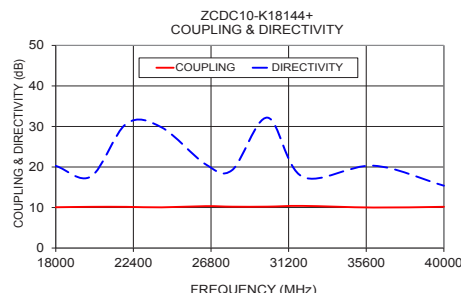
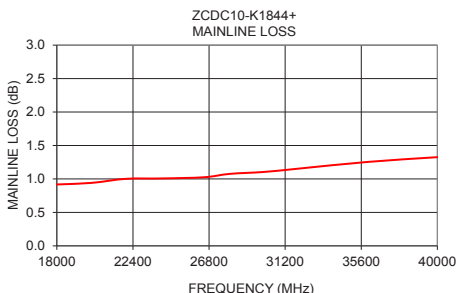
Electrical Schematic



Typical Performance Data

| Frequency (MHz) | Mainline Loss ¹ (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) | | |
|-----------------|--|----------------------|------------------|------------------|------|------|
| | | | | In | Out | Cpl |
| 18000 | 0.9 | 10.1 | 20.3 | 24.5 | 23.9 | 20.0 |
| 20000 | 0.9 | 10.2 | 17.7 | 27.1 | 30.0 | 18.1 |
| 22000 | 1.0 | 10.2 | 30.7 | 21.7 | 20.5 | 18.6 |
| 24000 | 1.0 | 10.0 | 29.8 | 25.9 | 33.6 | 23.1 |
| 26500 | 1.0 | 10.3 | 20.6 | 23.2 | 23.7 | 14.6 |
| 28000 | 1.1 | 10.2 | 19.2 | 21.4 | 22.6 | 25.9 |
| 30000 | 1.1 | 10.2 | 32.2 | 22.4 | 21.7 | 17.3 |
| 32000 | 1.2 | 10.4 | 17.6 | 18.2 | 18.8 | 16.2 |
| 36000 | 1.3 | 10.0 | 20.3 | 20.6 | 20.2 | 22.8 |
| 40000 | 1.3 | 10.2 | 15.4 | 17.4 | 17.9 | 17.4 |

1. Mainline loss includes coupling loss



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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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