Wideband, DC Pass

Directional Coupler ZCDC13-V24443+

50Ω 13dB Up to 16W 24 to 44 GHz

The Big Deal

- Wideband, 24 to 44 GHz
- Power Handling up to 16W
- Good Coupling Flatness, ±0.46 dB typ.

CASE STYLE: HT2536-3

Product Overview

The Mini-Circuits ZCDC13-V24443+ wideband directional coupler offers exceptional performance operating over 24 to 44 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 24 to 44 GHz, ZCDC13-V24443+ coupler is ideal for most lab testing applications, avoiding the need to switch components for different frequency bands.
Good Directivity • 18 dB typ. up to 44 GHz	High directivity allows sampling of input powers with minimal detrimental effects due to output mismatches.
Good Return Loss (In & Out) • 17 dB typ. up to 44 GHz	Good return loss over 24 to 44 GHz minimizes undesired reflections and resulting amplitude ripple.
• Good Coupling Flatness ±0.46dB Typ. up to 44 GHz.	Good coupling Flatness over the entire frequency range minimizes the need for compensation circuits in most applications.

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Generic photo used for illustration purposes only

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Connectors	Model
2.4mm-Fem	ZCDC13-V24443+

+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	0.35 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	—

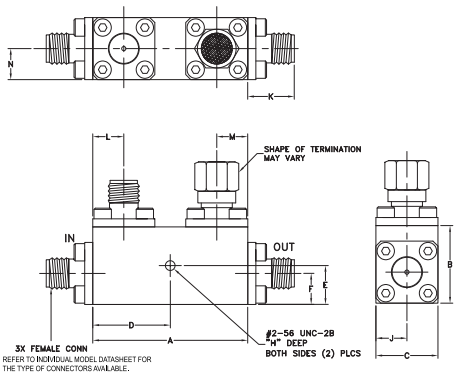
Features

- Wide frequency range, 24 to 44 GHz
- Good coupling flatness, ±0.46 dB typ. up to 44 GHz
- Good directivity, 18 dB typ. up to 44 GHz
- Good in/out return loss, 17 dB typ. up to 44 GHz
- DC current pass through input to output

Applications

- 5G
- mobile
- fixed satellite
- lab use

Outline Drawing

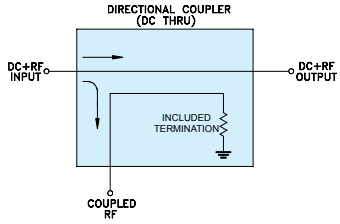


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
1.25	0.63	0.50	6.25	0.313	0.25	--
31.75	16.00	12.70	158.75	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	11	6.35	6.35	6.35	50

Electrical Schematic



Electrical Specifications at 25°C

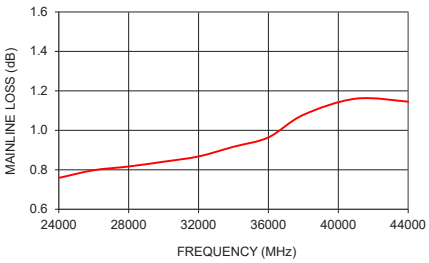
Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Operating Frequency		24		44	GHz
Coupling	24 - 44	11.6	13.1	14.4	dB
Coupling Flatness (±)	24 - 44		0.5	0.7	dB
Mainline Loss[1]	24 - 44		0.9	1.6	dB
Directivity	24 - 44	10	21.7		dB
Return Loss (In & Out)	24 - 44	11.7	25.3		dB
Return Loss (Coupling)	24 - 44	11.7	24.2		dB
Input Power[2]	24 - 44			16	W

1. Mainline loss includes coupling loss
2. Up to 25°C, derates linearly to 6.2W at 100°C.

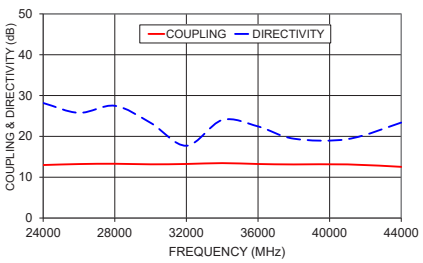
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) Cpl
24000	0.76	12.99	28.18	33.42	33.05	33.71
26000	0.80	13.22	25.77	22.26	22.05	20.40
28000	0.82	13.30	27.50	25.49	24.76	28.10
30000	0.84	13.16	23.32	30.48	31.21	30.21
32000	0.87	13.24	17.71	29.14	32.35	26.81
34000	0.92	13.45	24.01	23.23	22.99	19.85
36000	0.96	13.24	22.44	26.15	27.12	22.32
38000	1.08	13.13	19.44	17.77	17.22	17.18
41000	1.16	13.14	19.33	16.70	17.02	21.49
44000	1.15	12.54	23.39	28.55	29.11	27.33

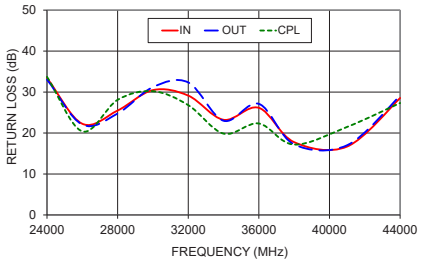
ZCDC13-V24443+
MAINLINE LOSS



ZCDC13-V24443+
COUPLING & DIRECTIVITY



ZCDC13-V24443+
RETURN LOSS



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