# Coaxial, High Directivity **Directional Coupler**

10 dB Coupling 50 to 6000 MHz 50Ω

# **The Big Deal**

- High directivity, 33 dB
- Wideband, 50 to 6000 MHz
- Excellent coupling flatness, ±0.3 dB
- N-Type to SMA connectors



ZHDC-10-63-NS+

CASE STYLE: FM1918-1

## **Product Overview**

Mini-Circuits' ZHDC-10-63-NS+ high-directivity directional coupler provides outstanding directivity and excellent coupling flatness from 50 to 6000 MHz, making it a low cost solutions for S-parameter measurements, intermodulation measurements as well as signal monitoring in other test and system applications. This model comes housed in an aluminum alloy case (2.5 x 1.4 x 0.88") with N-Type (input) to SMA (coupled and output) connectors.

Feature	Advantages
High directivity, 33 dB	High directivity allows accurate signal sampling through the coupled port with minimal measurement error.
Wideband, 50 to 6000 MHz	One device supports a broad range of system and test lab applications.
Flat coupling, ±0.3 dB	Provides consistent coupling performance across frequency.
Good VSWR. 1.2:1 typ.	Well-matched for 50 $\Omega$ systems.
N-Type to SMA connectors	Allows connection between different connector types without the need for additional adapters.
Small size, 2.5 x 1.4 x 0.88"	Saves space in crowded spaces and dense system layouts.

Notes

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# Coaxial, High Directivity **Directional Coupler**

#### 10 dB Coupling 50Ω

#### **Maximum Ratings**

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

#### **Coaxial Connections**

NPUT	1
OUTPUT	2
COUPLED	3

#### **Outline Drawing**



#### Outline Dimensions (inch)

				V mm Z		
Α	В	С	D	Е	F	
2.50	1.40	0.88	0.13	1.150	1.25	
63.50	35.56	22.35	3.30	29.21	31.75	
0			K			
G		J	n		WL	
0.140	0.70	0.75	0.44		grams	
3.56	17.78	19.05	11.18		100.0	



#### ORMER(S) GROUND. THAT



Notes

#### Features

• wideband, 50 to 6000 MHz

50 to 6000 MHz

- high directivity, 33 dB typ. • flat coupling, ±0.3 dB typ.
- good VSWR, 1.20:1 typ.

### Applications

 military defense • test and measurement





Generic photo used for illustration purposes only CASE STYLE: FM1918-1

Connectors Model

SMA / N-TYPE ZHDC-10-63-NS+ +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.	Тур.	Max.	Unit	
Frequency Range		50	_	6000	MHz	
Mainline Loss	50 - 6000	_	4.0	5.3	dB	
Coupling	50 - 6000	9.6	10.2	11.4	dB	
Coupling Flatness(±)	50 - 6000	_	0.3	0.7	dB	
	50	24	26	_	dB	
Directivity	700	30	34	-		
Directivity	2750	25	32	-		
	6000	24	32	-		
Return Loss (Input)	50 - 6000	—	18	—	dB	
Return Loss (Output)	50 - 6000	_	17	_	dB	
Return Loss (Coupling)	50 - 6000	_	19	_	dB	
Input Power	50 - 6000	_		1.0	w	

#### **Typical Performance Data**

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)	Directivity (dB)	Return Loss (dB)		
	In-Out	In-Cpl		In	Out	Cpl
50	3.53	10.65	26.06	35.33	36.23	35.07
100	3.55	10.60	29.72	37.86	35.97	36.21
700	3.72	10.56	34.79	35.09	27.97	28.79
1000	3.77	10.55	34.41	30.44	25.98	26.00
2000	3.95	10.46	42.39	28.27	25.52	22.19
2750	4.21	10.50	39.04	22.97	27.50	24.28
3000	4.23	10.47	36.78	23.01	25.39	25.53
3500	4.17	10.32	34.34	23.55	21.95	25.38
4000	4.11	10.20	32.38	22.45	20.66	22.28
5000	3.97	10.08	31.61	19.46	19.02	24.41
6000	4.77	10.56	32.98	20.25	16.89	26.34





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