## Coaxial, High Directivity **Directional Coupler**

## ZHDC-10-63-NS+

10 dB Coupling 50 to 6000 MHz  $50\Omega$ 

### The Big Deal

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



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.

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-Circuit 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

# **Directional Coupler**

## ZHDC-10-63-NS+

#### 50 to 6000 MHz 10 dB Coupling 50Ω

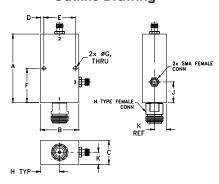
#### **Maximum Ratings**

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

#### **Coaxial Connections**

INPUT	1_
OUTPUT	2
COUPLED	3

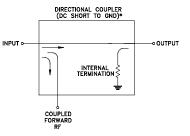
#### **Outline Drawing**



#### Outline Dimensions (inch)

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
G	Н	J.	K		wt
G 0.140	H 0.70	J 0.75	K 0.44		wt grams

#### **Electrical Schematic**



#### **Features**

- wideband, 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



CASE STYLE: FM1918-1

Model Connectors SMA / N-TYPE ZHDC-10-63-NS+

+RoHS Compliant

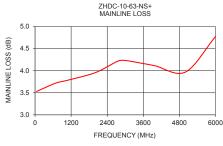
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

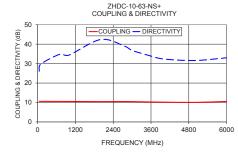
#### Flectrical Specifications at 25°C

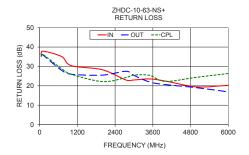
Electrical opecifications at 25 O						
Parameter	Condition (MHz)	Min.	Тур.	Max.	Unit	
Frequency Range		50	_	6000	MHz	
Mainline Loss	50 - 6000	_	4.0	5.3	dB	
Coupling	50 - 6000	9.6	10.2	11.4	dB	
Coupling Flatness(±)	50 - 6000	_	0.3	0.7	dB	
Directivity	50	24	26	_	dB	
	700	30	34	_		
Directivity	2750	25	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) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	ln	Return Loss (dB) 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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