

20dB DC Pass

# High Power Bi-Directional Coupler ZGBDC20-372HP+

50Ω Up to 250W 380 to 3700 MHz

## The Big Deal

- High Power Handling: 250W
- Low Insertion Loss: 0.16 dB typ.\*



CASE STYLE: HT1760-1

## Product Overview

The Mini-Circuits ZGBDC20-372HP+ broadband high power directional coupler offers excellent performance across a wide range of popular frequency bands. Built using low loss suspended substrate construction, the ZGBDC20-372HP+ can pass up to 3A of DC current from input to output and handle up to 250W CW. The rugged sealed construction makes this coupler ideal for use in field applications or remote monitoring sites; however, it is also ideal for high power lab testing.

## Key Features

Feature	Advantages
Excellent Insertion Loss , 0.16 dB Typ*	With extremely low insertion loss, this coupler is ideal for critical high power applications.
Ultra High Return Loss, 25 dB Typ	Outstanding Return loss makes this coupler ideal for sensitive power measurement and other signal distribution applications.
High Power Handling, 250W	Up to 250W CW power handling, combined with low insertion loss and excellent VSWR support operation in high power applications such as transmitters, base stations and high power device characterization.
Wide bandwidth	Covering 380-3700 MHz, the ZGBDC20-372HP+ covers the most popular Cellular, PCS, DCS, WiMAX, and LTE bands.
Excellent Directivity and Coupling Flatness	Typical 18 dB directivity and $\pm 1.1$ dB of Coupling flatness provides accurate signal sampling of forward or reflected power.
Passes DC Current, 3A	Capable of passing 3A current, input to output; this coupler is suited for application using remote antenna control or other remote motorized requirements.

\*Does not include coupling loss

### Notes

- 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.
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# High Power Bi-Directional Coupler

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## Maximum Ratings

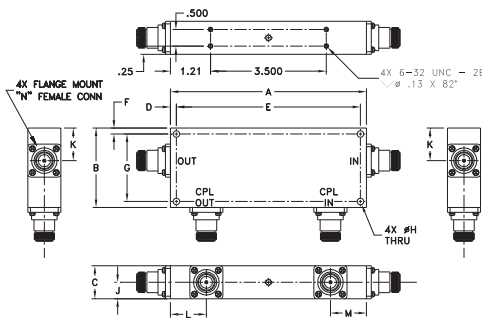
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	3A

Permanent damage may occur if any of these limits are exceeded

## Coaxial Connections

INPUT	IN
OUTPUT	OUT
COUPLED FORWARD	CPL IN
COUPLED REVERSE	CPL OUT

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
5.93	2.4	1.00	0.18	5.565	0.18	2.040
150.62	60.96	25.40	4.57	141.35	4.57	51.82
H	J	K	L	M	wt	
0.200	0.50	0.99	1.09	1.09	grams	
5.08	12.70	25.15	27.69	27.69	700	

## Features

- wide frequency range, 380 - 3700 MHz
- good coupling flatness,  $\pm 0.3$  dB typ. (600-3700 MHz)
- high directivity, 18 dB typ.
- very good return loss, 18 dB typ.
- high power, up to 250W
- DC current pass through input to output

## Applications

- cellular
- lab use
- WiMAX
- PCN
- GSM
- ISM



CASE STYLE: HT1760-1

Connectors	Model
N-Type	ZGBDC20-372HP+

## +RoHS Compliant

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

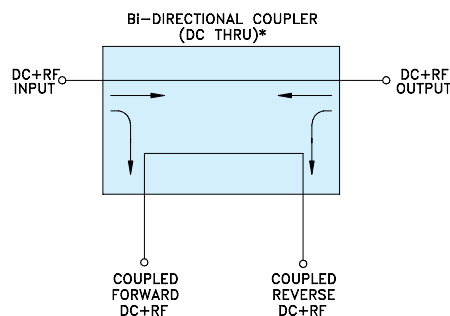
## Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Operating Frequency		380		3700	MHz
Coupling	380-600	—	21.9 $\pm$ 2.5	—	
	600-2700	—	20.5 $\pm$ 1.0	—	dB
	2700-3700	—	20.7 $\pm$ 1.0	—	
Coupling Flatness	380-600	—	1.1	$\pm$ 2.00	
	600-2700	—	0.3	$\pm$ 0.75	dB
	2700-3700	—	0.1	$\pm$ 0.50	
Mainline Loss <sup>1</sup>	380-600	—	0.03	0.20	
	600-2700	—	0.09	0.30	dB
	2700-3700	—	0.16	0.35	
Directivity	380-600	20	34	—	
	600-2700	15	30	—	dB
	2700-3700	14	22	—	
Return Loss	380-600	—	35	—	
	600-2700	—	34	—	dB
	2700-3700	—	32	—	
Input Power <sup>2</sup>	380-600	—	—	250	
	600-2700	—	—	250	W
	2700-3700	—	—	150	

1. Does not include coupling loss.

2. At 25°C with no DC current. Derate linearly to 100W (380-2700 MHz) and to 64W (2700-3600 MHz) from 25°C to 100°C. Output load VSWR 2.0:1 max.

## Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

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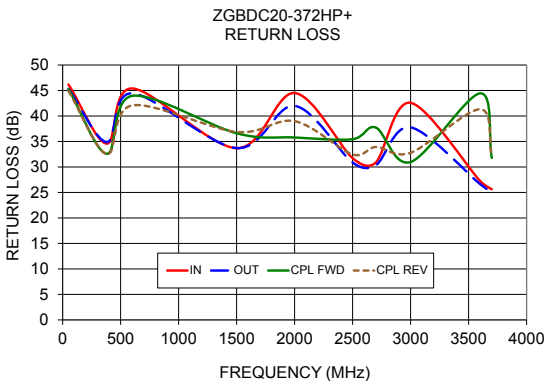
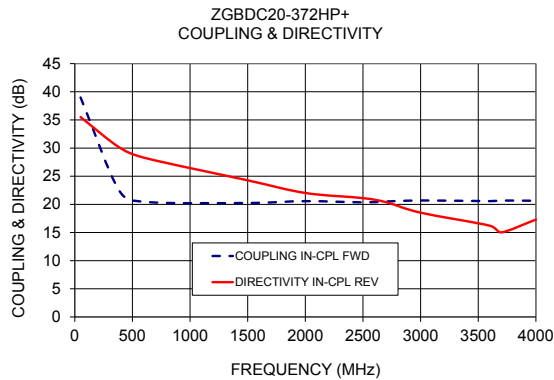
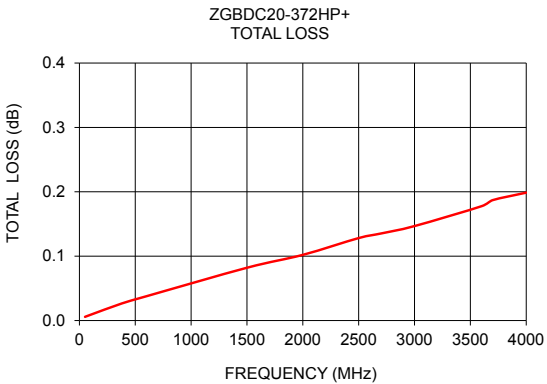
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M171098  
ZGBDC20-372HP+  
WL/RS/CP  
181119  
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## Typical Performance Data

Frequency (MHz)	Mainline Loss <sup>1</sup> (dB) In-Out	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
		In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd	Cpl Rev
50	0.01	39.0	39.1	32.1	35.5	46.2	45.3	45.3	44.9
380	0.03	22.6	22.6	29.5	30.2	34.6	34.9	32.6	32.5
600	0.04	20.5	20.4	28.8	28.3	45.4	44.5	44.0	42.1
1500	0.08	20.2	20.2	23.1	24.3	33.7	33.7	36.6	36.9
2000	0.10	20.6	20.4	21.9	22.0	44.5	42.0	35.8	39.0
2500	0.13	20.4	20.2	19.9	21.1	31.7	30.9	35.5	32.5
2700	0.14	20.5	20.3	20.3	20.4	30.9	30.3	37.7	33.9
3000	0.15	20.7	20.5	18.6	18.5	42.6	37.8	31.0	32.8
3600	0.18	20.6	20.4	16.4	16.2	27.2	26.6	44.4	41.3
3700	0.19	20.7	20.5	16.6	15.0	25.6	25.0	31.8	32.0
4000	0.20	20.6	20.5	16.2	17.3	29.7	28.4	20.7	19.9

1. Does not include coupling loss.



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