

Coaxial Directional Coupler

50Ω

0.005 to 20 MHz

ZFDC-10-6+
ZFDC-10-6



BNC version shown
CASE STYLE: K18

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

INPUT	1
OUTPUT	2
COUPLED	3

Features

- excellent directivity, 40 dB typ.
- excellent mainline loss, 0.4 dB typ.
- rugged shielded case

Applications

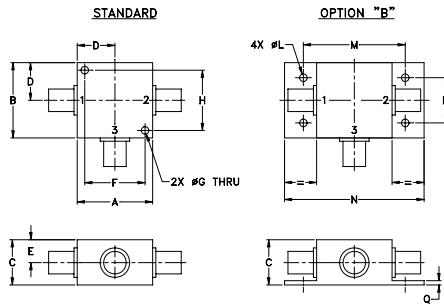
- hf communications
- amateur radio
- instrumentation

Connectors	Model	Price	Qty.
BNC	ZFDC-10-6(+)	\$52.95	(1-9)
SMA	ZFDC-10-6-S+	\$57.95	(1-9)
N-TYPE	ZFDC-10-6-N(+)	\$57.95	(1-9)
BRACKET (OPTION "B")		\$5.00	(1+)

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.00	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40
J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	70.0

Directional Coupler Electrical Specifications

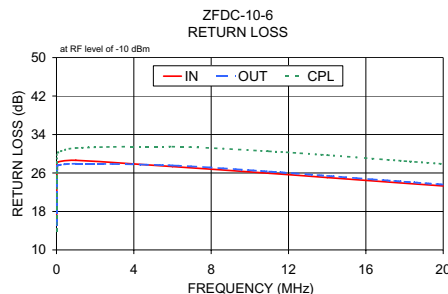
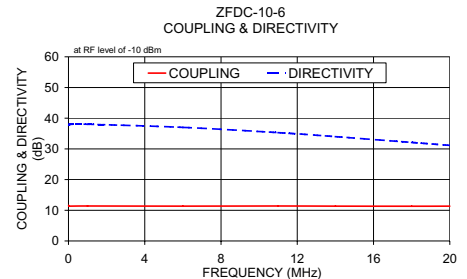
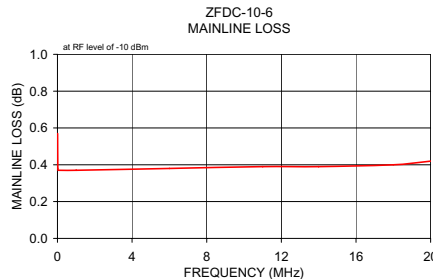
FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS¹ (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT (W)	
			L		M		U		L		M		U				
	f _L -f _U	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.
0.005-20	11±0.5	±0.5	0.4	1.2	0.4	0.8	0.4	1.0	40	30	40	30	35	25	1.3	1.5	3.0

L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]

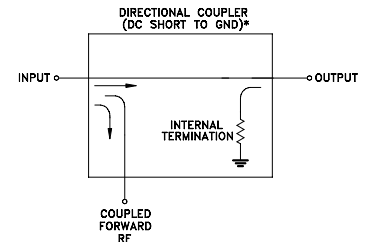
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
0.01	0.57	11.62	37.96	15.36	15.23	13.92
0.02	0.38	11.38	37.78	24.50	24.12	23.93
0.04	0.37	11.35	37.90	27.12	26.69	28.00
0.08	0.37	11.35	38.01	28.29	27.60	30.23
1.00	0.37	11.38	38.03	28.63	27.94	31.20
6.00	0.38	11.35	37.01	27.34	27.57	31.48
11.00	0.39	11.39	35.31	25.93	26.30	30.52
14.00	0.39	11.34	34.01	25.06	25.41	29.71
18.00	0.40	11.32	32.11	23.88	24.18	28.49
20.00	0.42	11.35	31.17	23.31	23.60	27.88



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

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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REV. C
M141161
ZFDC-10-6
WZ/TD/CP/AM
141202

Directional Coupler

ZFDC-10-6

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	OUT	CPL
0.005	0.57	11.62	37.96	15.36	15.23	13.92
0.006	0.51	11.55	37.89	16.71	16.50	15.22
0.007	0.48	11.51	37.93	17.78	17.58	16.35
0.008	0.45	11.48	37.84	18.73	18.51	17.31
0.009	0.44	11.45	37.84	19.57	19.32	18.19
0.010	0.42	11.45	37.79	20.32	20.02	18.96
0.020	0.38	11.38	37.78	24.50	24.12	23.93
0.030	0.37	11.33	37.90	26.27	25.84	26.46
0.040	0.37	11.35	37.90	27.12	26.69	28.00
0.050	0.36	11.32	37.98	27.62	27.14	28.94
0.060	0.37	11.34	37.99	27.95	27.37	29.55
0.070	0.37	11.34	38.00	28.15	27.55	29.97
0.080	0.37	11.35	38.01	28.29	27.60	30.23
0.090	0.37	11.34	38.00	28.37	27.70	30.47
0.100	0.37	11.36	38.10	28.52	27.67	30.52
0.400	0.38	11.37	38.07	28.81	27.82	30.93
0.500	0.37	11.29	38.07	28.74	27.89	31.05
0.600	0.37	11.37	38.08	28.73	27.87	31.05
0.700	0.37	11.30	38.07	28.76	27.89	31.06
0.800	0.37	11.36	38.02	28.68	27.94	31.12
0.900	0.37	11.33	37.99	28.66	27.91	31.16
1.000	0.37	11.38	38.03	28.63	27.94	31.20
2.000	0.37	11.33	37.83	28.35	28.02	31.49
3.000	0.38	11.39	37.67	28.14	28.00	31.60
4.000	0.38	11.37	37.50	27.89	27.87	31.52
5.000	0.38	11.36	37.28	27.66	27.72	31.52
6.000	0.38	11.35	37.01	27.34	27.57	31.48
7.000	0.38	11.37	36.75	27.10	27.34	31.35
8.000	0.37	11.30	36.39	26.84	27.13	31.20
9.000	0.38	11.34	36.03	26.53	26.84	30.98
10.000	0.39	11.32	35.63	26.28	26.60	30.75
11.000	0.39	11.39	35.31	25.93	26.30	30.52
12.000	0.39	11.34	34.84	25.62	26.00	30.30
13.000	0.42	11.41	34.43	25.35	25.70	30.02
14.000	0.39	11.34	34.01	25.06	25.41	29.71
15.000	0.40	11.34	33.54	24.74	25.08	29.42
16.000	0.39	11.23	33.05	24.46	24.79	29.09
17.000	0.41	11.38	32.59	24.16	24.45	28.79
18.000	0.40	11.32	32.11	23.88	24.18	28.49
19.000	0.41	11.36	31.65	23.60	23.89	28.18
20.000	0.42	11.35	31.17	23.31	23.60	27.88

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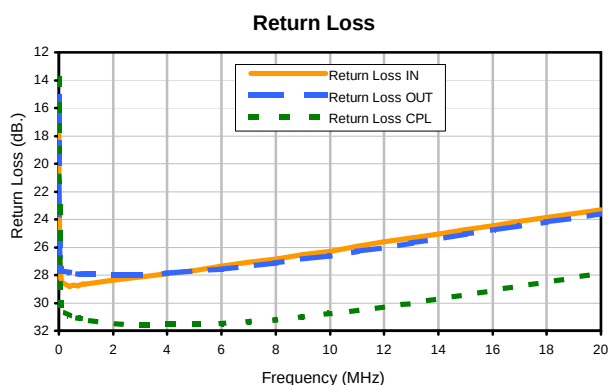
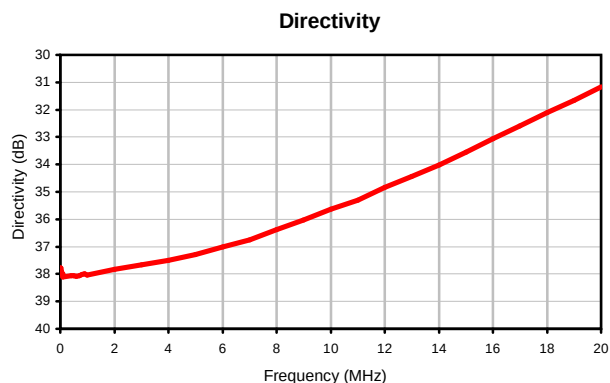
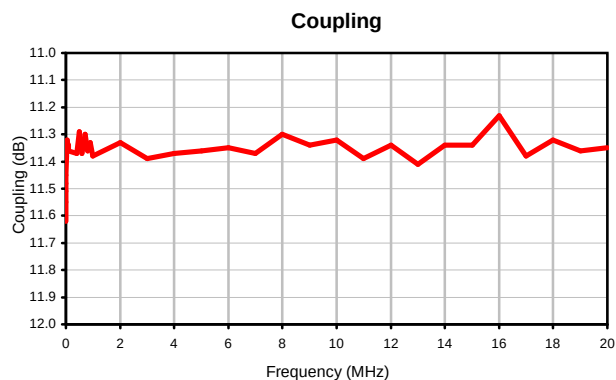
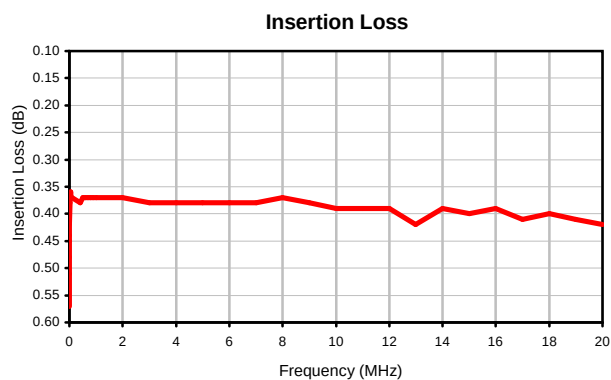
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Directional Coupler

Typical Performance Curves

ZFDC-10-6



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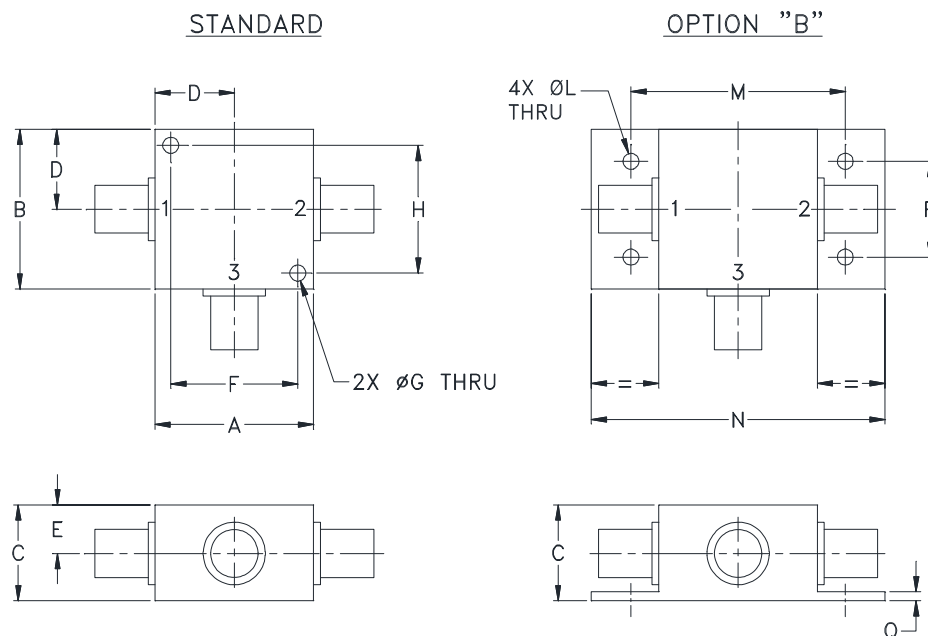
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Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
K18	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.00)	.38 (9.65)	1.000 (25.40)	.125 (3.18)	1.000 (25.40)	-- --	-- --	.125 (3.18)	1.688 (42.88)	2.18 (55.37)

CASE#	P	Q	WT. GRAMS
K18	.75 (19.05)	.07 (1.78)	70.0

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Mounting bracket available on request. Add suffix B to part number.
- For port marking 1, 2, and 3 see specifications data sheet.
- For bracket version, option B, dimension "C" changes from .75 to .94 inches when connectors are type N.
- Refer to the individual model data sheet for the type of connectors available.



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