Coaxial

Directional Coupler

50Ω 0.005 to 20 MHz

ZFDC-10-6+
ZFDC-10-6

BNC version shown

CASE STYLE: K18

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

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

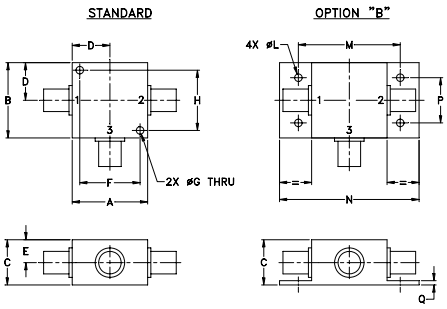
Features

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

Applications

- hf communications
- amateur radio
- instrumentation

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 LOSS[1] (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT (W)	
			L		M		U		L		M		U			L	MU
f_L-f_U	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	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

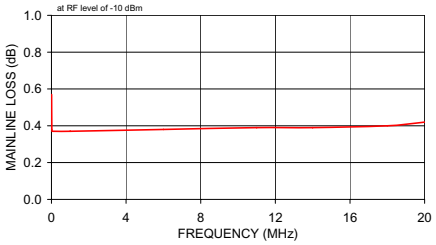
L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U= upper range [f_U/2 to f_U]

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

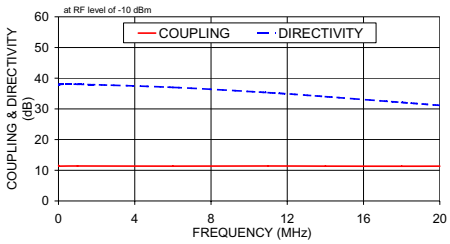
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) 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

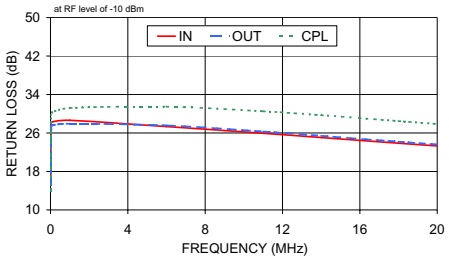
ZFDC-10-6
MAINLINE LOSS



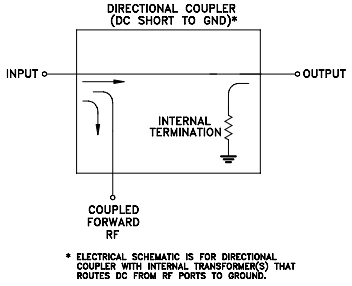
ZFDC-10-6
COUPLING & DIRECTIVITY



ZFDC-10-6
RETURN LOSS



Electrical Schematic



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.
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Directional Coupler ZFDC-10-6

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS (dB)		
				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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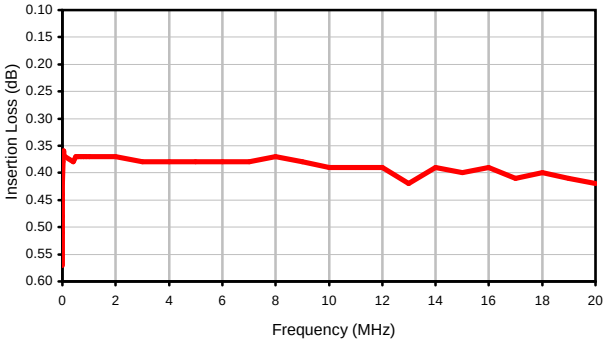
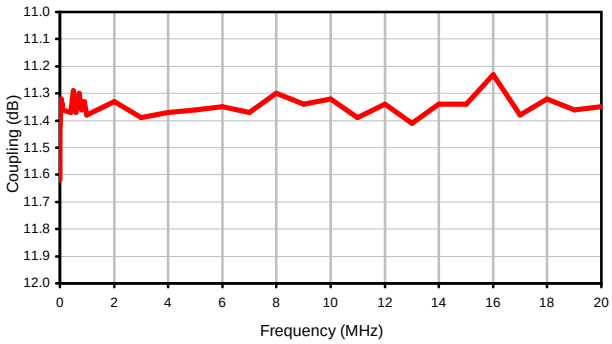
Directional Coupler ZFDC-10-6

Typical Performance Curves

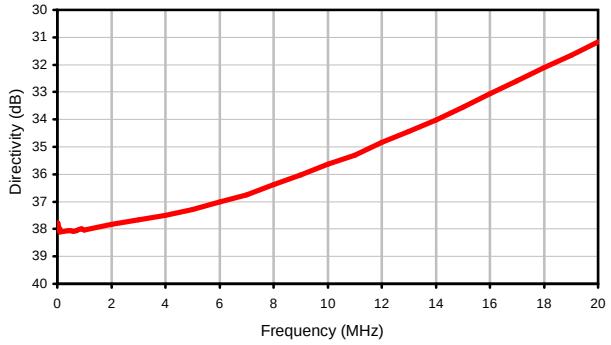
Insertion Loss



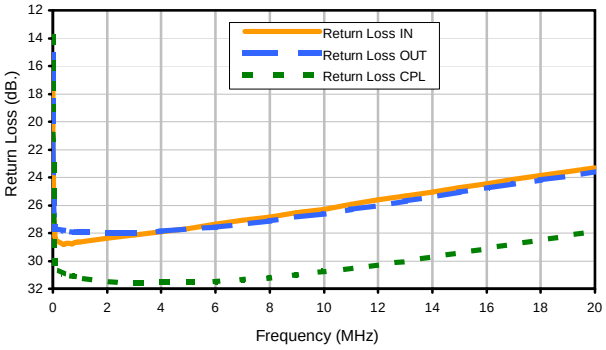
Coupling



Directivity



Return Loss



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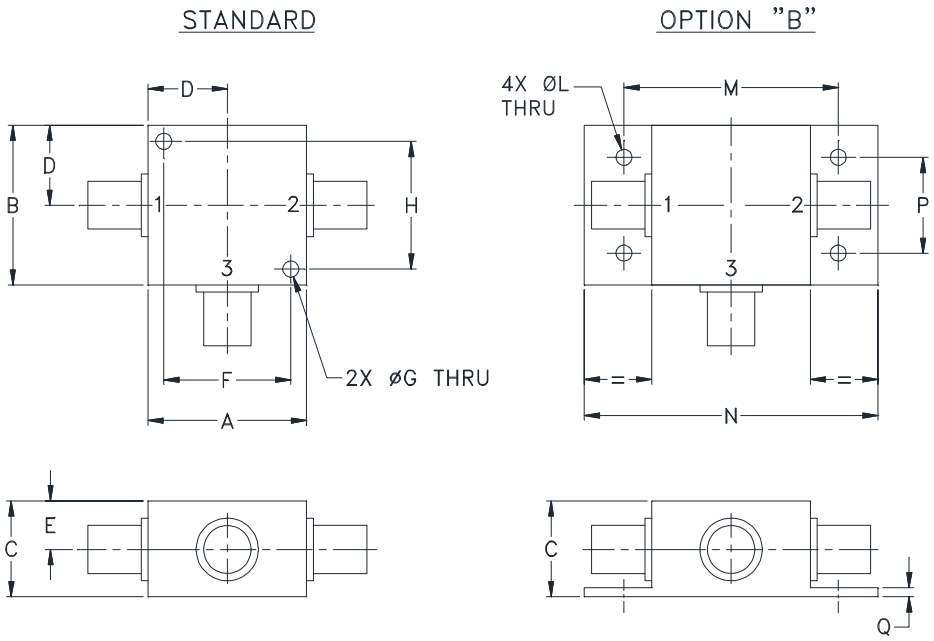
Case Style K

K18

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. ± .03; 3 Pl. ± .015

Notes:

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

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