

Ultra-Wideband, DC Pass Directional Coupler

50Ω 20dB Up to 50W 0.5 to 18 GHz

ZUDC20-183+

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	3A
Supplied Termination	1W

Permanent damage may occur if any of these limits are exceeded

Coaxial Connections

INPUT	IN
OUTPUT	OUT
COUPLED	CPL
TERMINATION (50Ω) INCLUDED	—

Features

- ultra wide frequency range, 0.5 to 18 GHz
- good coupling flatness, ± 0.5 dB typ.
- good directivity, 22dB typ. up to 4 GHz
- good VSWR, 1.3:1 typ.
- DC current pass through input to output

Applications

- cellular
- lab use
- WiMax
- ISM
- GSM
- PCN

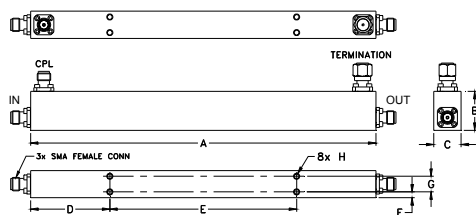


CASE STYLE: HT1967	
Connectors	Model
SMA	ZUDC20-183+

+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
6.47	.73	.51	1.48	3.500
164.34	18.54	12.95	37.59	88.90
F	G	H		wt
.11	.293	#4-40		grams
2.79	7.44	UNC-2B		120.0

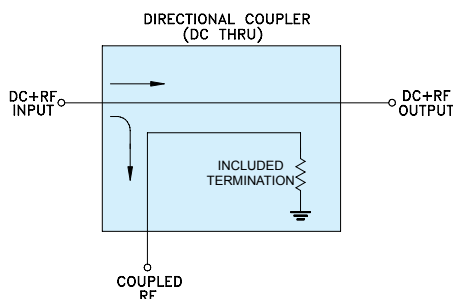
Electrical Specifications at 25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Operating Frequency		0.5		18	GHz
Nominal Coupling (include flatness)	0.5 - 18	—	20 $\pm$ 2	—	dB
Coupling Flatness	0.5 - 4		± 0.3	± 0.5	dB
	4 - 12.4	—	± 0.4	± 0.6	
	12.4 - 18	—	± 0.6	± 0.9	
Mainline Loss	0.5 - 4	—	0.4	0.6	dB
	4 - 12.4	—	0.9	1.2	
	12.4 - 18	—	1.3	1.8	
Directivity	0.5 - 4	18	22	—	dB
	4 - 12.4	12	17	—	
	12.4 - 18	—	12	—	
Return Loss (In & Out)	0.5 - 4	—	21	—	dB
	4 - 12.4	—	19	—	
	12.4 - 18	—	19	—	
Return Loss (Coupling)	0.5 - 4	—	21	—	dB
	4 - 12.4	—	18	—	
	12.4 - 18	—	18	—	
Input Power ^{1,2}	0.5 - 4	—	—	50	W
	4 - 12.4	—	—	25	
	12.4 - 18	—	—	10	

1. At 25°C with no DC current. Derate linearly to 20, 10, 4W at 100°C

2. Peak power 3kW

Electrical Schematic



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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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

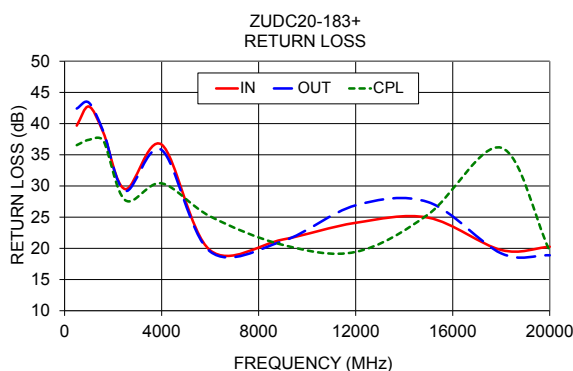
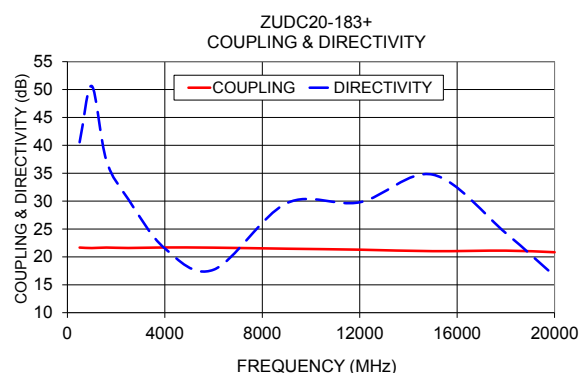
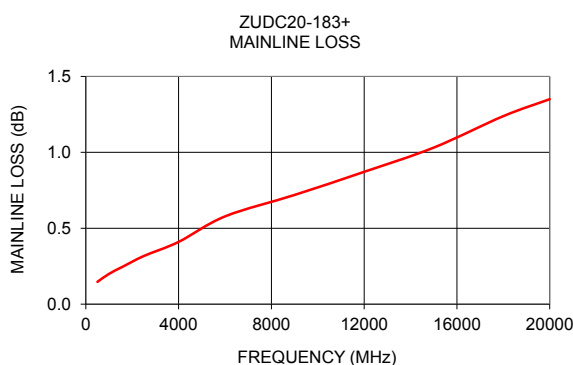


www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. C
M154248
ZUDC20-183+
RS/CP/AM
160330
Page 1 of 2

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In Out	Cpl
100	0.06	32.02	50.75	46.19	43.87
500	0.15	21.67	40.56	39.68	42.41
1000	0.20	21.59	50.63	42.74	43.35
1600	0.25	21.68	37.27	38.52	38.69
2500	0.32	21.60	30.33	29.49	29.19
4000	0.41	21.69	21.52	36.63	35.77
6000	0.58	21.66	17.70	19.69	19.48
9000	0.72	21.47	29.63	21.42	21.17
12400	0.91	21.63	17.28	20.44	21.41
15000	1.03	21.03	34.75	24.91	27.40
18000	1.24	21.12	24.26	19.73	19.19
20000	1.35	20.83	16.58	20.26	18.89



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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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



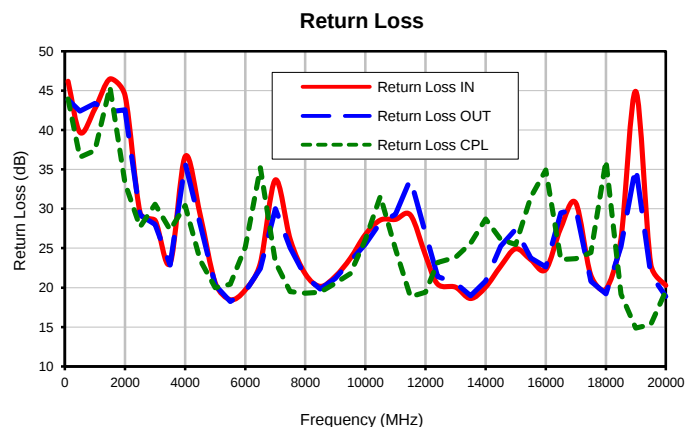
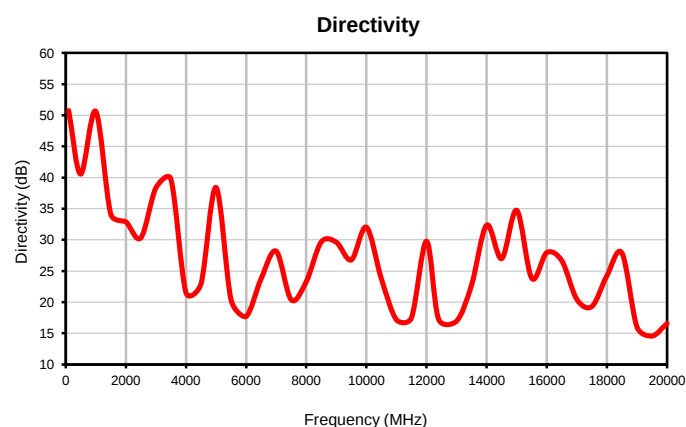
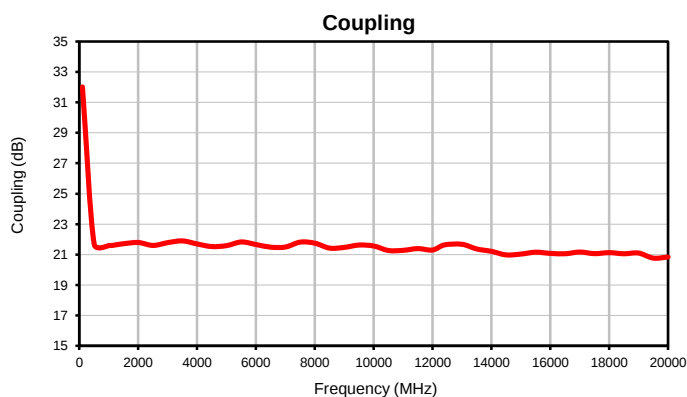
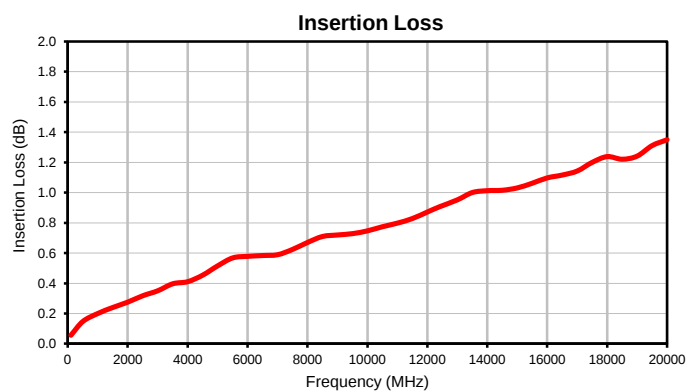
Ultra-Wideband, DC Pass Directional Coupler

ZUDC20-183+

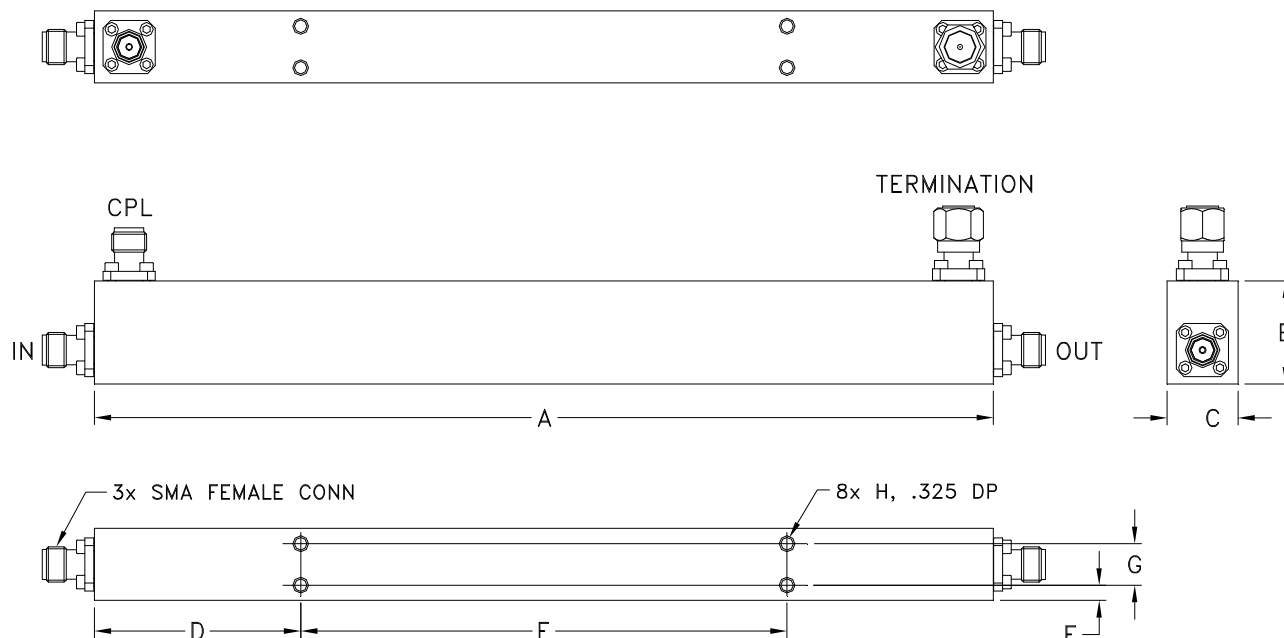
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS (dB)		
				IN	OUT	CPL
100.0	0.06	32.02	50.75	46.19	43.87	43.94
500.0	0.15	21.67	40.56	39.68	42.41	36.54
1000.0	0.20	21.59	50.63	42.74	43.35	37.40
1500.0	0.24	21.71	34.13	46.49	42.32	45.45
2000.0	0.27	21.79	32.91	44.34	42.57	33.26
2500.0	0.32	21.60	30.33	29.49	29.19	27.72
3000.0	0.35	21.78	38.34	28.50	28.04	30.58
3500.0	0.40	21.90	39.74	23.10	22.86	27.31
4000.0	0.41	21.69	21.52	36.63	35.77	30.42
4500.0	0.45	21.52	22.94	29.22	28.01	23.46
5000.0	0.52	21.58	38.42	20.58	20.29	19.99
5500.0	0.57	21.83	20.37	18.45	18.25	20.42
6000.0	0.58	21.66	17.70	19.69	19.48	25.13
6500.0	0.58	21.48	23.77	23.05	22.43	35.22
7000.0	0.59	21.49	28.18	33.65	30.00	23.23
7500.0	0.62	21.82	20.39	26.06	25.05	19.51
8000.0	0.67	21.75	23.29	21.72	21.46	19.29
8500.0	0.71	21.42	29.67	20.14	19.84	19.40
9000.0	0.72	21.47	29.63	21.42	21.17	20.55
9500.0	0.73	21.62	26.79	23.70	23.35	21.75
10000.0	0.75	21.56	32.03	26.72	25.49	26.07
10500.0	0.77	21.26	23.73	28.56	28.25	31.58
11000.0	0.80	21.28	17.17	28.64	29.26	24.95
11500.0	0.83	21.39	17.49	29.19	33.80	18.83
12000.0	0.87	21.30	29.80	24.10	26.90	19.43
12400.0	0.91	21.63	17.28	20.44	21.41	23.20
13000.0	0.95	21.67	16.96	20.03	20.60	23.84
13500.0	1.00	21.36	22.78	18.60	18.96	25.64
14000.0	1.01	21.21	32.37	20.04	20.82	28.72
14500.0	1.02	20.98	26.99	22.68	25.26	26.09
15000.0	1.03	21.03	34.75	24.91	27.40	25.47
15500.0	1.06	21.15	23.84	23.54	23.76	31.49
16000.0	1.10	21.08	27.96	22.26	22.63	34.91
16500.0	1.12	21.05	26.65	27.52	29.49	23.56
17000.0	1.14	21.16	20.44	30.74	30.00	23.66
17500.0	1.20	21.06	19.31	21.60	20.80	24.45
18000.0	1.24	21.12	24.26	19.73	19.19	36.12
18500.0	1.22	21.05	27.87	25.96	25.20	19.19
19000.0	1.24	21.10	16.00	44.90	35.39	14.84
19500.0	1.31	20.76	14.56	22.95	21.70	15.31
20000.0	1.35	20.83	16.58	20.26	18.89	19.56



Typical Performance Curves

Outline Dimensions



CASE #	A	B	C	D	E	F	G	H	J	K
HT1967	6.47 (164.34)	.73 (18.54)	.51 (12.95)	1.48 (37.59)	3.500 (88.90)	.11 (2.76)	.293 (7.44)	#4-40 UNC-2B	-- --	-- --

CASE #	L	M	WT. GRAM
HT1967	--	--	120.0

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish: Painted Blue, Pantone 286 crinkle.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C