

# Ultra-Wideband, DC Pass Directional Coupler

## ZUDC30-183+

50Ω 30dB Up to 50W 0.5 to 18 GHz

### Maximum Ratings

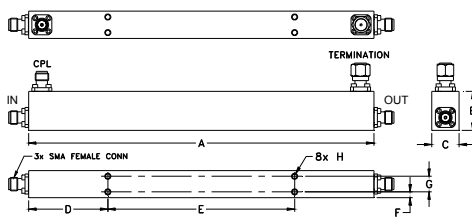
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	3A
Supplied Termination	1W

Permanent damage may occur if any of these limits are exceeded

### Coaxial Connections

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

### 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	

### Features

- ultra wide frequency range, 0.5 to 18 GHz
- good coupling flatness,  $\pm 0.4$  dB typ.
- good directivity, 23dB typ. to 4 GHz
- good VSWR, 1.3 typ.
- DC current pass through input to output

### Applications

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



CASE STYLE: HT1967  
Connectors Model  
SMA ZUDC30-183+

### +RoHS Compliant

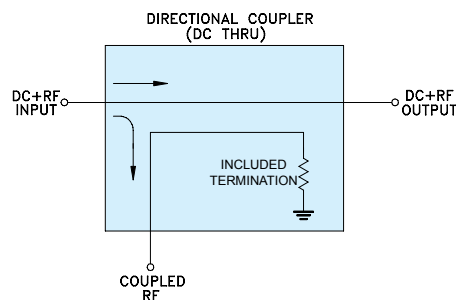
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### 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	—	30 $\pm$ 3	—	dB
Coupling Flatness	0.5 - 4	—	$\pm 0.3$	$\pm 0.7$	dB
	4 - 12.4	—	$\pm 0.4$	$\pm 0.8$	
Mainline Loss	12.4 - 18	—	$\pm 0.6$	$\pm 1.4$	dB
	0.5 - 4	—	0.4	0.7	
Directivity	4 - 12.4	—	0.9	1.2	dB
	12.4 - 18	—	1.2	1.55	
Return Loss (In & Out)	0.5 - 4	19	23	—	dB
	4 - 12.4	10	16	—	
	12.4 - 18	—	12	—	
Return Loss (Coupling)	0.5 - 4	—	22	—	dB
	4 - 12.4	—	18	—	
	12.4 - 18	—	17	—	
Input Power <sup>1,2</sup>	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

- 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's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

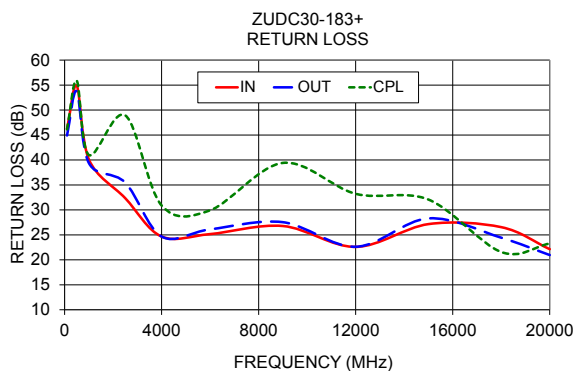
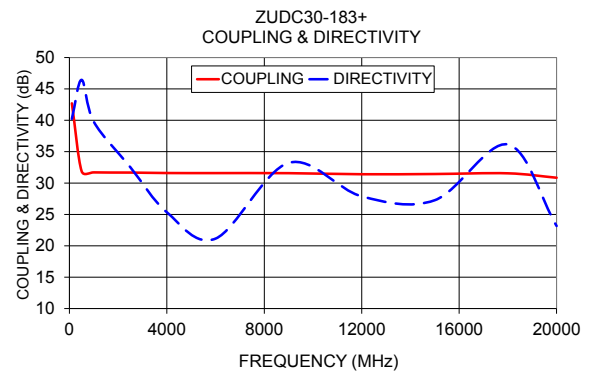
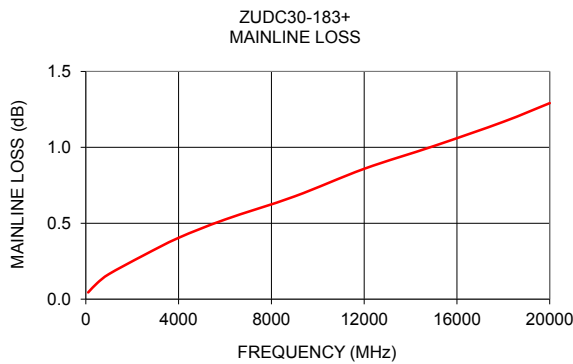


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ZUDC30-183+  
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160330  
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## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
100	0.04	42.70	40.24	46.19	44.90	46.12
500	0.11	31.90	46.44	54.85	53.75	55.88
1000	0.17	31.70	39.76	40.11	39.39	41.00
2500	0.29	31.67	32.52	32.34	35.46	48.94
4000	0.40	31.60	25.34	24.66	24.66	30.87
6000	0.52	31.58	21.15	25.16	26.10	29.92
9000	0.68	31.57	33.22	26.77	27.54	39.41
12400	0.86	31.58	22.33	27.81	27.09	24.50
15000	1.01	31.44	27.27	27.15	28.30	32.07
18000	1.17	31.55	36.15	26.55	24.43	21.56
20000	1.29	30.85	23.16	22.13	20.96	23.26



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