

High Power

Bi-Directional Coupler

ZABDC50-51HP+

50Ω Up to 100W 1 to 50 MHz

Maximum Ratings

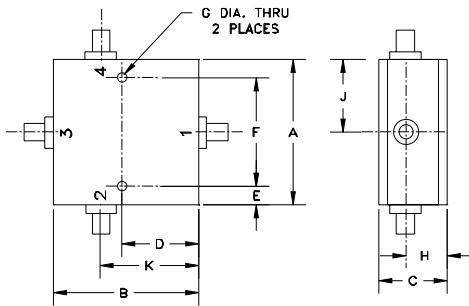
Operating Temperature	-55°C to 75°C
Storage Temperature	-55°C to 100°C

Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

INPUT	1 (N-Type)
OUTPUT	4 (N-Type)
COUPLED (forward)	2 (SMA)
COUPLED (reverse)	3 (SMA)

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F
2.00	2.00	.95	1.062	.125	1.75
50.80	50.80	24.13	26.97	3.18	44.45
G	H	J	K	wt	
.125	.575	1.00	1.35	grams	
3.18	14.61	25.40	34.29	200	

Features

- high directivity, 25 dB typ.
- excellent VSWR, 1.07:1 typ.
- high power, up to 100W
- extremely low insertion loss, 0.05 dB typ.

Applications

- HF radios
- AM radio, amateur radio, medical ultrasound
- military mobile
- instrumentation
- communication receivers & transmitters



Generic photo used for illustration purposes only

CASE STYLE: HHH141

Connectors	Model
N-Type/SMA	ZABDC50-51HP+

+RoHS Compliant

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

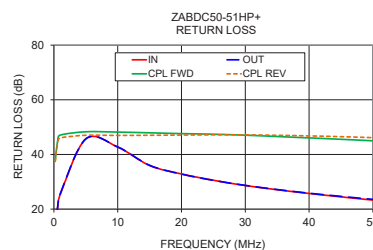
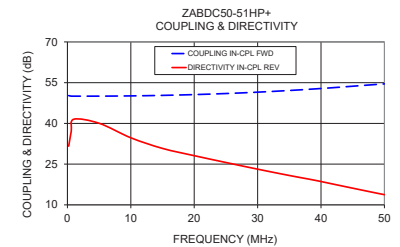
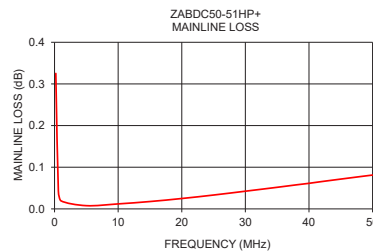
Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1	—	50	MHz
Mainline Loss¹	1-30	—	0.02	0.15	dB
	30-50	—	0.06	0.2	
Nominal Coupling	1-30	—	49.5±1	—	dB
	30-50	—	51.5±1.5	—	
Coupling Flatness(±)	1-30	—	0.8	1.5	dB
	30-50	—	1.5	2.0	
Directivity	1-30	17	30	—	dB
	30-50	10	20	—	
Return Loss (Input)	1-50	17	30	—	dB
Return Loss (Output)	1-50	17	30	—	dB
Return Loss (Coupling)	1-50	30	45	—	dB
Input Power²	1-30	—	—	100	W
	30-50	—	—	50	

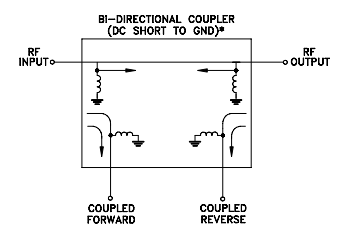
1. Include Coupling Loss.
2. At 25°C. Derate linearly to 60W (1-30MHz), 25W (30-50MHz) at 75°C.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
		In-Out	In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd
1.0	0.02	50.02	50.03	37.28	41.53	25.42	25.64	47.09	46.03
10.0	0.01	50.12	50.12	35.61	34.70	42.72	42.73	48.19	46.97
20.0	0.02	50.60	50.60	30.40	28.11	32.87	32.81	47.62	47.09
30.0	0.04	51.50	51.49	25.83	23.15	28.63	28.68	47.05	47.16
35.0	0.05	52.11	52.12	23.86	20.82	27.09	27.16	46.57	47.01
38.0	0.06	52.54	52.57	22.46	19.52	26.25	26.34	46.25	46.90
40.0	0.06	52.85	52.90	21.67	18.60	25.73	25.83	46.07	46.78
42.0	0.07	53.17	53.26	20.80	17.60	25.21	25.34	45.86	46.69
48.0	0.08	54.21	54.51	18.12	14.69	23.76	24.00	45.23	46.31
50.0	0.08	54.55	54.98	17.19	13.75	23.32	23.58	44.99	46.13



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMERS THAT ROUTES DC FROM RF PORTS TO GROUND.

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/WCLStore/terms.jsp



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

REV. A
ECO-000430
ED-18061902
ZABDC50-51HP+
YL/CP/AM
191031
Page 1 of 1