

DC Pass

Bi-Directional Coupler

ZABDC20-2400-S+

50Ω Up to 10W 1500 to 2400 MHz



Generic photo used for illustration purposes only

CASE STYLE: DD477

Connectors Model
SMA ZABDC20-2400-S+

+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
DC Current	1.0A

* Case temperature is defined as temperature on ground leads.
Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

INPUT	1
OUTPUT	4
COUPLED (forward)	2
COUPLED (reverse)	3

Features

- excellent directivity, 25 dB typ.
- low mainline loss, 0.3 dB typ.
- high power, up to 10W
- rugged shielded case
- DC current through input to output 1.0A Max. at 1.0 watt RF input power.

Applications

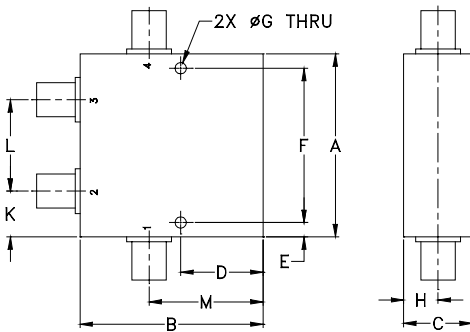
- PCS/DCS/UMTS
- power leveling & monitoring
- VSWR measurement

Bi-Directional Coupler Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
	Norm.	Flatness	Typ.	Max.	Typ.	Min.		
f_L - f_U								
1500-2400	19.5±1.0	±1.0	0.3	0.5	25	18	1.2	10

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

Outline Drawing



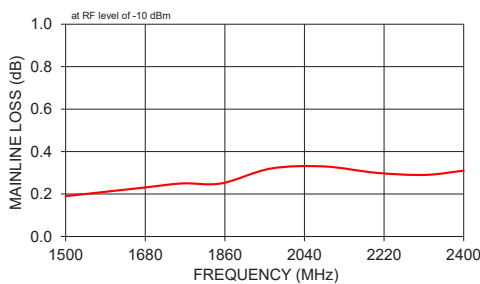
Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
2.00	2.00	.75	.90	.156	1.688	.125
50.80	50.80	19.05	22.86	3.96	42.88	3.18
H	J	K	L	M		wt
.38	---	.50	1.00	1.25		grams
9.65	---	12.70	25.40	31.75		145

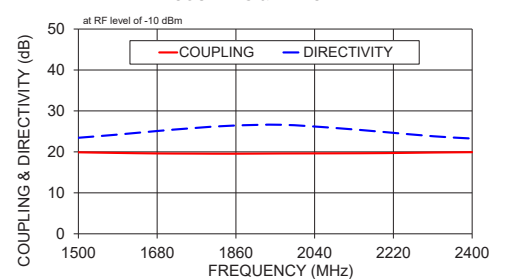
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB)	Directivity (dB)	Return Loss (dB)		
	In-Out	In-Cpl			In	Out	Cpl
1500.00	0.19	19.90	19.90	23.45	27.51	28.35	24.98
1588.00	0.21	19.75	19.75	24.21	28.25	29.14	25.69
1676.00	0.23	19.63	19.63	25.06	29.19	30.06	26.19
1764.00	0.25	19.59	19.59	25.82	30.29	31.05	26.11
1852.00	0.25	19.56	19.56	26.41	31.74	32.30	25.22
1964.00	0.32	19.62	19.62	26.62	34.28	34.41	23.34
2084.00	0.33	19.65	19.65	25.86	38.45	37.76	21.21
2202.00	0.30	19.71	19.71	24.82	43.89	43.16	19.38
2312.00	0.29	19.85	19.85	23.81	42.07	48.30	18.05
2400.00	0.31	19.93	19.93	23.26	38.87	48.51	17.31

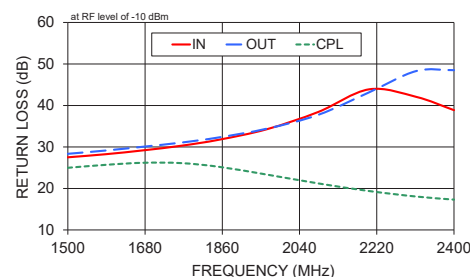
ZABDC20-2400-S+ MAINLINE LOSS



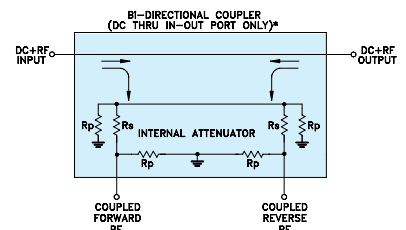
ZABDC20-2400-S+ COUPLING & DIRECTIVITY



ZABDC20-2400-S+ RETURN LOSS



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL ATTENUATORS AT COUPLING PORTS.

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-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/WCLStore/terms.jsp



Bi-Directional Coupler

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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN (dB)	OUT (dB)	CPL
1500.0	0.19	19.90	23.45	27.51	28.35	24.98
1522.0	0.18	19.81	23.58	27.66	28.50	25.10
1544.0	0.20	19.82	23.76	27.88	28.72	25.27
1566.0	0.25	19.80	23.97	28.11	28.98	25.46
1588.0	0.21	19.75	24.21	28.25	29.14	25.69
1610.0	0.21	19.73	24.44	28.38	29.29	25.85
1632.0	0.20	19.67	24.61	28.56	29.45	25.96
1654.0	0.23	19.69	24.83	28.87	29.72	26.06
1676.0	0.23	19.63	25.06	29.19	30.06	26.19
1698.0	0.23	19.66	25.33	29.46	30.31	26.29
1720.0	0.21	19.63	25.53	29.64	30.47	26.33
1742.0	0.23	19.61	25.73	29.91	30.69	26.23
1764.0	0.25	19.59	25.82	30.29	31.05	26.11
1786.0	0.24	19.60	26.05	30.71	31.43	25.95
1808.0	0.24	19.62	26.28	31.06	31.75	25.80
1830.0	0.25	19.58	26.46	31.32	32.02	25.55
1852.0	0.25	19.56	26.41	31.74	32.30	25.22
1874.0	0.29	19.59	26.56	32.21	32.73	24.85
1896.0	0.26	19.62	26.55	32.78	33.21	24.47
1918.0	0.29	19.61	26.73	33.22	33.56	24.14
1940.0	0.26	19.57	26.60	33.67	33.94	23.81
1964.0	0.32	19.62	26.62	34.28	34.41	23.34
1988.0	0.30	19.63	26.44	35.09	35.08	22.84
2012.0	0.30	19.63	26.34	35.85	35.68	22.42
2036.0	0.32	19.65	26.25	36.58	36.32	22.04
2060.0	0.29	19.65	26.07	37.37	36.89	21.63
2084.0	0.33	19.65	25.86	38.45	37.76	21.21
2108.0	0.28	19.65	25.65	39.74	38.84	20.78
2132.0	0.30	19.72	25.39	41.08	39.78	20.39
2156.0	0.29	19.71	25.30	42.02	40.64	20.04
2180.0	0.30	19.67	25.01	43.04	41.75	19.71
2202.0	0.30	19.71	24.82	43.89	43.16	19.38
2224.0	0.28	19.78	24.60	44.87	44.60	19.06
2246.0	0.33	19.80	24.47	45.04	45.43	18.78
2268.0	0.25	19.71	24.20	44.56	45.99	18.54
2290.0	0.33	19.78	24.06	43.31	46.98	18.30
2312.0	0.29	19.85	23.81	42.07	48.30	18.05
2334.0	0.33	19.87	23.68	41.08	49.04	17.82
2356.0	0.29	19.84	23.56	40.48	48.66	17.61
2378.0	0.31	19.86	23.45	39.74	48.09	17.44
2400.0	0.31	19.93	23.26	38.87	48.51	17.31

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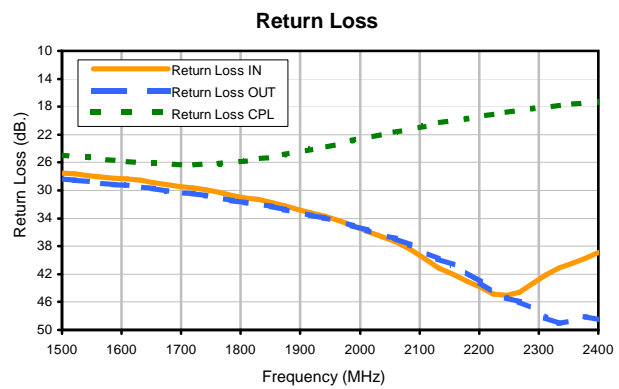
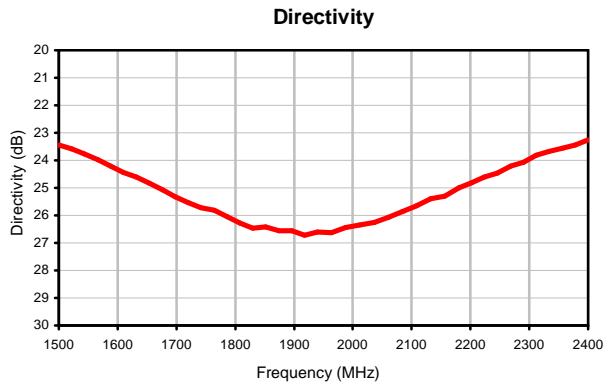
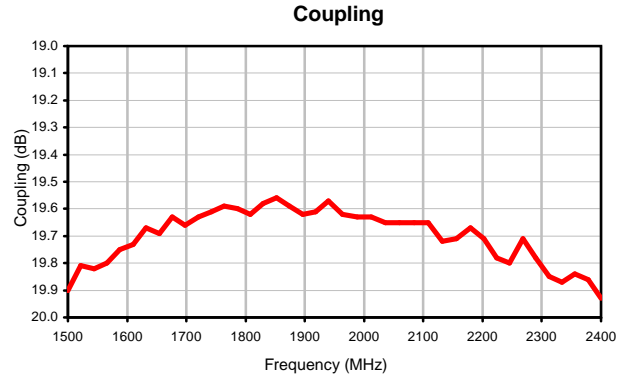
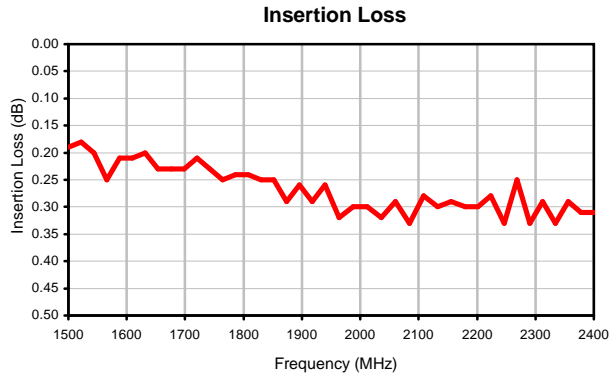
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Typical Performance Curves



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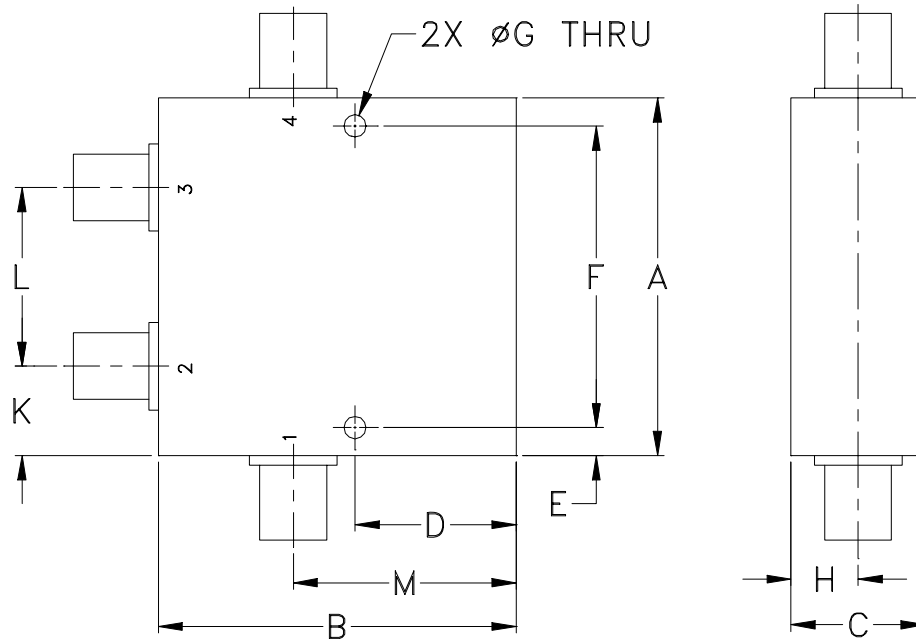
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Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT, GRAM
DD477	2.00 (50.80)	2.00 (50.80)	.75 (19.05)	.90 (22.86)	.156 (3.96)	1.688 (42.88)	.125 (3.18)	.38 (9.65)	-- --	.50 (12.70)	1.00 (25.40)	1.25 (31.75)	145

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.



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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
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I