

Coaxial Directional Coupler

50Ω 6dB 500 to 1200 MHz

ZNDC-6-122-S+



Generic photo used for illustration purposes only

CASE STYLE: FM587

Connectors Model No.

SMA ZNDC-6-122-S+

+RoHS Compliant

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

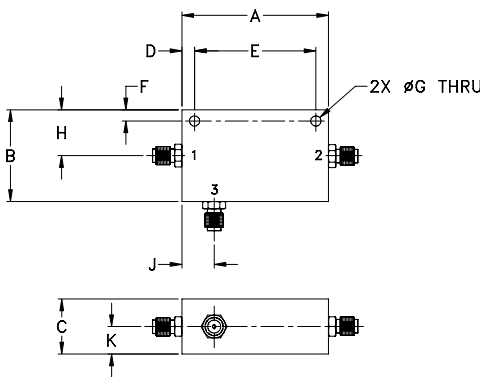
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power input	2W Max.
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

INPUT	1
OUTPUT	2
COUPLED	3

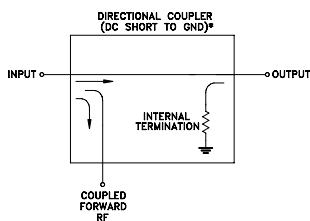
Outline Drawing



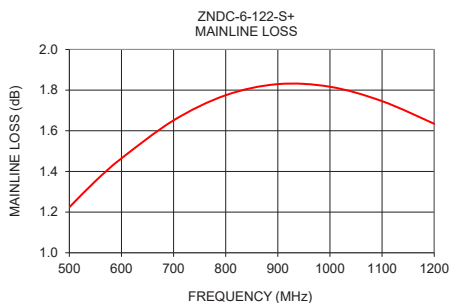
Outline Dimensions (inch/mm)

A	B	C	D	E	F
2.00	1.25	0.75	0.17	1.656	0.15
50.80	31.75	19.05	4.32	42.06	3.81
G	H	J	K		wt
0.14	0.63	0.44	0.38		grams
3.56	16.00	11.18	9.65		57.0

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) 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/MCLStore/terms.jsp

Features

- excellent mainline loss, 0.5 dB typ.
- very good directivity, 20 dB typ.

Applications

- cellular
- PDC
- CDMA

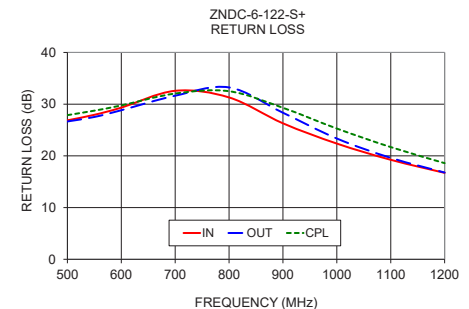
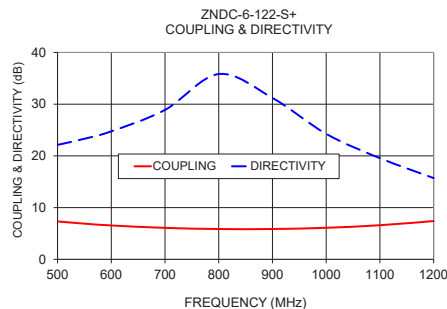
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		500		1200	MHz
Mainline Loss (above theoretical 1.20 dB)	500	—	0.1	0.3	dB
	550	—	0.2	0.6	
	700	—	0.5	0.9	
	1200	—	0.6	0.9	
Nominal Coupling	600-1000	—	6±0.5	—	dB
	500-1200	—	6.5±1	—	
Coupling Flatness(±)	600-1000	—	0.5	0.7	dB
	500-1200	—	0.9	1.2	
Directivity	600-1000	19	25	—	dB
	500-1200	13	18	—	
Return Loss (Input)	500-1200	14	20	—	dB
Return Loss (Output)	500-1200	14	20	—	dB
Return Loss (Coupled)	500-1200	15	20	—	dB

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Cpl
500	1.22	7.33	22.13	26.87	26.66	27.88
550	1.35	6.90	23.31	27.94	27.52	28.74
600	1.46	6.55	24.75	29.33	28.83	29.75
700	1.65	6.08	28.89	32.58	31.63	32.05
800	1.77	5.86	35.82	31.30	33.24	32.50
900	1.83	5.87	31.21	26.29	28.34	29.29
1000	1.82	6.10	24.26	22.38	23.35	25.28
1100	1.75	6.60	19.56	19.24	19.61	21.70
1200	1.63	7.40	15.71	16.71	16.78	18.59

Mainline Loss = Theoretical Loss + Insertion Loss



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Directional Coupler

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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS (dB)		
				IN	OUT	CPL
400	0.95	8.52	20.26	25.88	25.97	27.04
450	1.09	7.87	21.14	26.22	26.28	27.32
500	1.22	7.33	22.13	26.87	26.66	27.88
510	1.25	7.24	22.36	27.07	26.81	28.03
520	1.28	7.15	22.59	27.26	26.99	28.19
530	1.30	7.06	22.82	27.46	27.11	28.37
540	1.33	6.98	23.06	27.68	27.28	28.54
550	1.35	6.90	23.31	27.94	27.52	28.74
560	1.38	6.82	23.57	28.18	27.74	28.92
570	1.40	6.75	23.86	28.49	27.98	29.15
580	1.42	6.68	24.14	28.76	28.22	29.34
600	1.46	6.55	24.75	29.33	28.83	29.75
620	1.51	6.44	25.45	30.06	29.40	30.21
640	1.55	6.33	26.21	30.80	29.91	30.71
660	1.58	6.24	26.99	31.38	30.56	31.18
680	1.62	6.16	27.90	32.10	30.98	31.68
700	1.65	6.08	28.89	32.58	31.63	32.05
720	1.68	6.02	30.01	33.09	32.28	32.45
740	1.71	5.97	31.37	33.41	32.88	32.70
760	1.73	5.92	32.82	32.89	33.50	32.79
780	1.76	5.89	34.45	32.30	33.56	32.79
800	1.77	5.86	35.82	31.30	33.24	32.50
820	1.79	5.85	36.63	30.28	32.44	32.07
840	1.81	5.84	36.44	29.29	31.48	31.46
860	1.82	5.84	34.76	28.22	30.48	30.78
880	1.82	5.85	32.97	27.21	29.40	30.04
900	1.83	5.87	31.21	26.29	28.34	29.29
920	1.83	5.89	29.52	25.43	27.27	28.49
940	1.83	5.93	28.06	24.62	26.25	27.68
960	1.83	5.98	26.69	23.85	25.27	26.83
980	1.82	6.04	25.40	23.14	24.27	26.05
1000	1.82	6.10	24.26	22.38	23.35	25.28
1020	1.81	6.18	23.20	21.65	22.45	24.54
1040	1.79	6.27	22.25	20.97	21.65	23.82
1060	1.78	6.36	21.32	20.39	20.93	23.09
1080	1.76	6.48	20.42	19.80	20.25	22.37
1100	1.75	6.60	19.56	19.24	19.61	21.70
1150	1.69	6.95	17.58	17.88	18.12	20.10
1200	1.63	7.40	15.71	16.71	16.78	18.59
1250	1.57	7.95	13.94	15.63	15.63	17.26
1300	1.51	8.60	12.24	14.67	14.64	16.02



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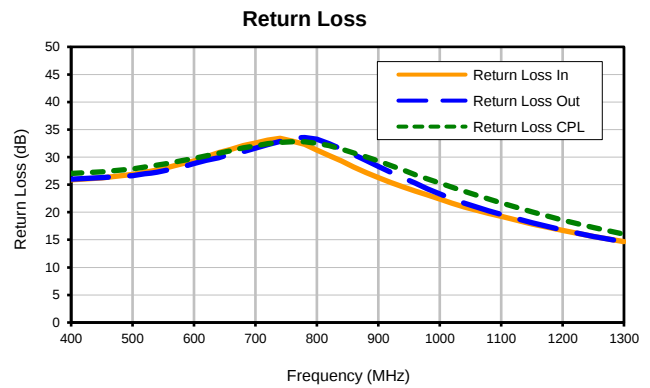
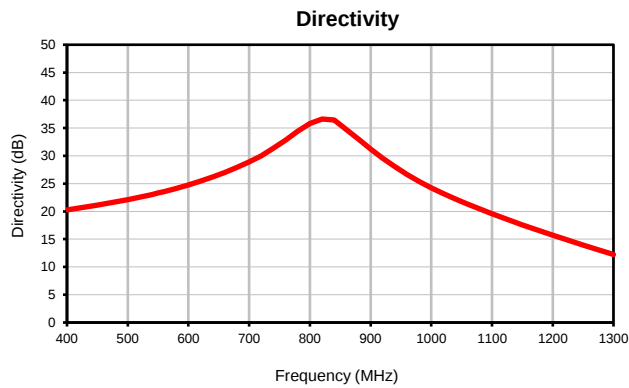
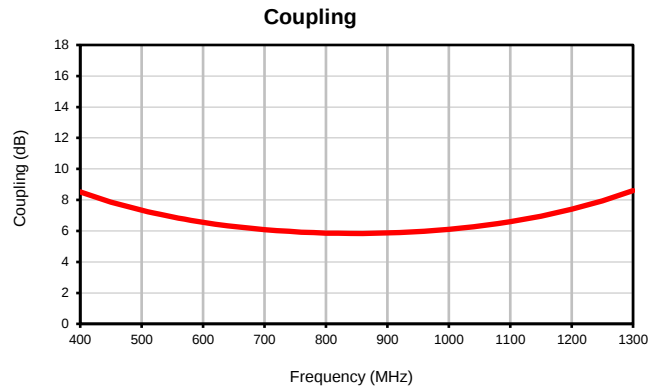
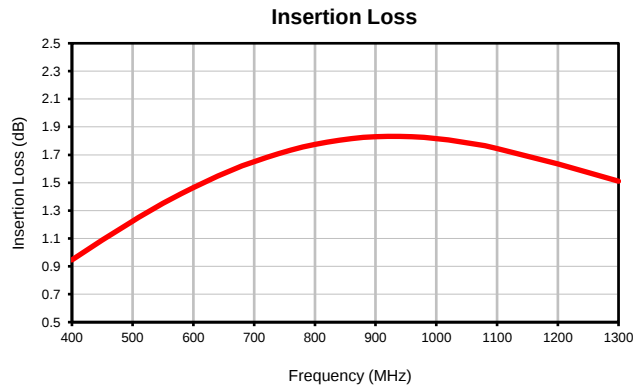
IF/RF MICROWAVE COMPONENTS

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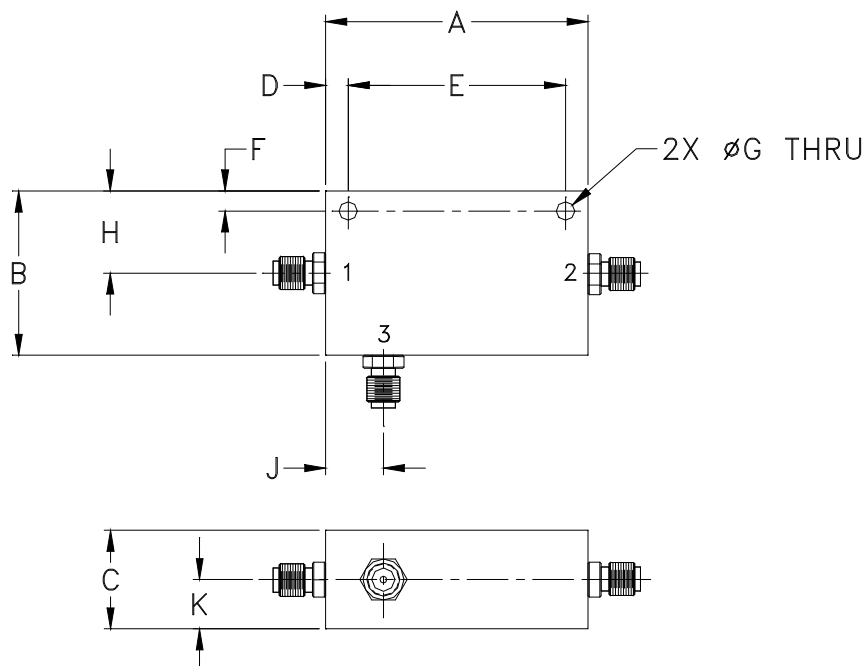
Directional Coupler

Typical Performance Curves

ZNDC-6-122-S+



Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	WT, GRAM
FM587	2.00 (50.80)	1.24 (31.50)	.75 (19.05)	.17 (4.32)	1.656 (42.06)	.15 (3.81)	.140 (3.56)	.62 (15.75)	.44 (11.18)	.38 (9.65)	57

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

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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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
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