

# Coaxial Directional Coupler

50Ω 5 to 1200 MHz

ZX30-9-4-S+



Generic photo used for illustration purposes only

CASE STYLE: FL905

Connectors Model  
SMA ZX30-9-4-S+

**+RoHS Compliant**

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

## Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

## Coaxial Connections

INPUT	1
OUTPUT	2
COUPLED	3

## Features

- very flat coupling
- very broad, multi-octave
- all welded construction
- protected by U.S Patents 6,140,887 & 6,784,521 & 6,790,049

## Applications

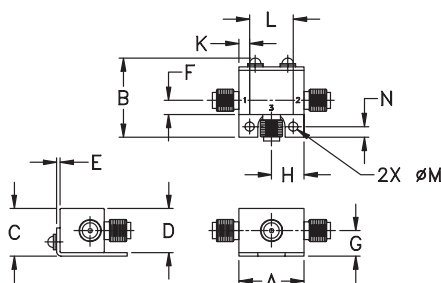
- VHF/UHF
- communications receivers & transmitters
- cellular
- instrumentation

## Directional Coupler Electrical Specifications (T<sub>AMB</sub> = 25°C)

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W		
	Nom.	Typ. Flatness	L		M		U		L		M		U			Typ.	L	MU
f <sub>L</sub> -f <sub>U</sub>			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.	
5-1200	8.9±0.5	±0.1	1.1	1.4	1.1	1.4	1.3	1.8	21	19	20	15	16	12	1.2	0.5	1.0	

L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]  
1. Mainline loss includes theoretical power loss at coupled port.

## Outline Drawing



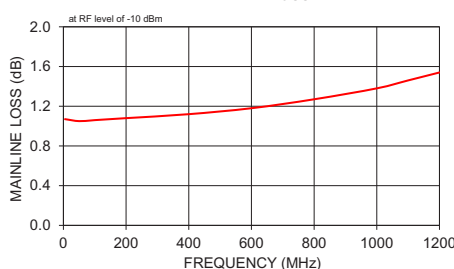
## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.74	.90	.54	.50	.04	.16	.29
18.80	22.86	13.72	12.70	1.02	4.06	7.37
H	J	K	L	M	N	wt
.37	--	.122	.496	.106	.122	grams
9.40	--	3.10	12.60	2.69	3.10	20.0

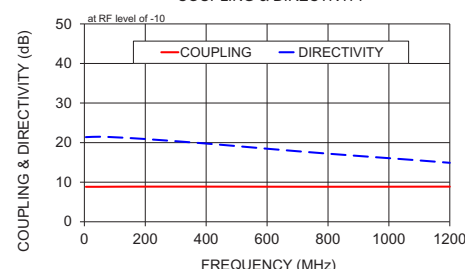
## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	1.07	8.84	21.39	19.47	31.15	19.43
50.00	1.05	8.84	21.49	20.10	33.43	20.04
100.00	1.06	8.86	21.35	20.20	32.64	19.97
200.00	1.08	8.88	20.91	20.25	30.27	19.49
400.00	1.12	8.88	19.77	19.93	26.11	17.56
600.00	1.18	8.86	18.46	19.22	23.13	15.39
800.00	1.27	8.85	17.21	18.44	20.89	13.50
1000.00	1.38	8.86	16.07	17.66	19.30	11.99
1100.00	1.46	8.87	15.50	17.40	18.78	11.37
1200.00	1.54	8.88	14.90	17.03	18.14	10.77

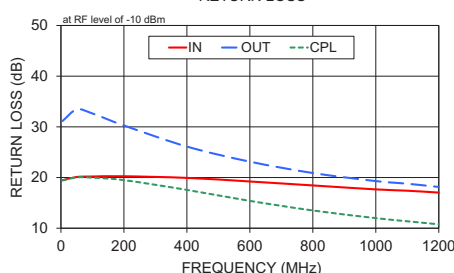
ZX30-9-4-S+ MAINLINE LOSS



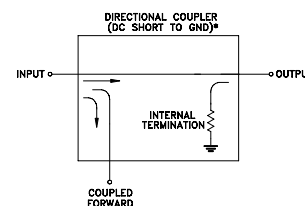
ZX30-9-4-S+ COUPLING & DIRECTIVITY



ZX30-9-4-S+ RETURN LOSS



## Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TERMINATION 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-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](http://www.minicircuits.com/WCLStore/terms.jsp)

