



COAXIAL

Power Splitter/Combiner

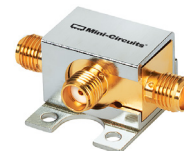
ZX10-2-20-S+

Mini-Circuits

2-Way 0° 50Ω 200 to 2000 MHz SMA Female

FEATURES

- Low Insertion Loss, 0.8 dB Typ.
- Excellent Amplitude Unbalance
- Very Good Phase Unbalance
- Small Size
- Low Cost
- Protected Under U.S. Patent 6,790,049 & 6,963,255



Generic photo used for illustration purposes only

APPLICATIONS

- PCN/PCS
- Cellular/GSM
- VHF/UHF Receivers/Transmitters

Model No.	ZX10-2-20-S+
Case Style	FL905
Connectors	SMA Female

+RoHS Compliant

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

ELECTRICAL SPECIFICATIONS AT +25 °C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		200		2000	MHz
Insertion Loss Above 3 dB	200-2000	-	0.8	2.2	dB
	800-1000	-	0.5	1.0	
	500-1500	-	0.5	1.5	
	1500-2000	-	1.6	2.2	
Isolation	200-2000	15.0	20	-	dB
	800-1000	16.0	22	-	
	500-1500	15.0	22	-	
	1500-2000	15.0	20	-	
Phase Unbalance	200-2000	-	-	9.0	Degree
	800-1000	-	-	3.0	
	500-1500	-	-	5.0	
	1500-2000	-	-	9.0	
Amplitude Unbalance	200-2000	-	0.4	0.6	dB
	800-1000	-	0.3	0.4	
	500-1500	-	0.4	0.6	
	1500-2000	-	0.4	0.6	

ABSOLUTE MAXIMUM RATINGS¹

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C
Power Input (as a Splitter)	0.5 W max.
Internal Dissipation (as a Combiner)	0.125 W max.

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

ELECTRICAL SCHEMATIC



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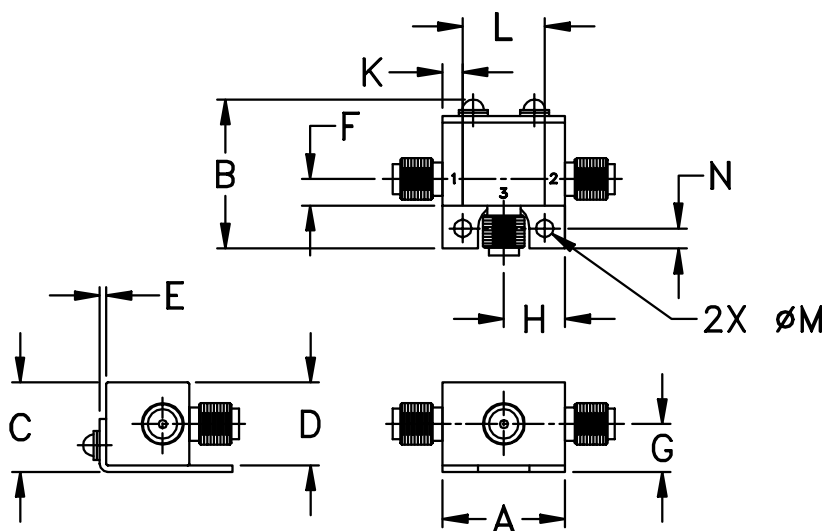
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2-Way 0° 50Ω 200 to 2000 MHz SMA Female

COAXIAL CONNECTIONS

Sum Port	3
Port 1-2	1-2

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





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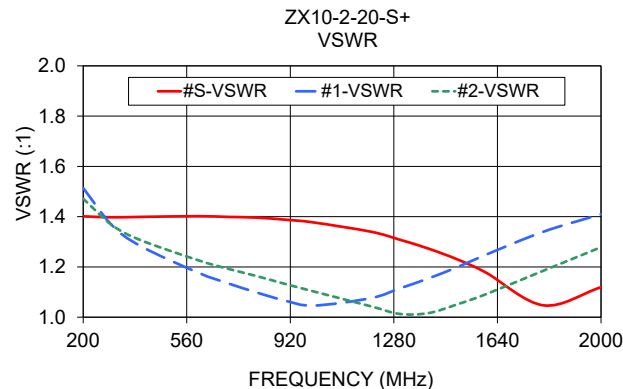
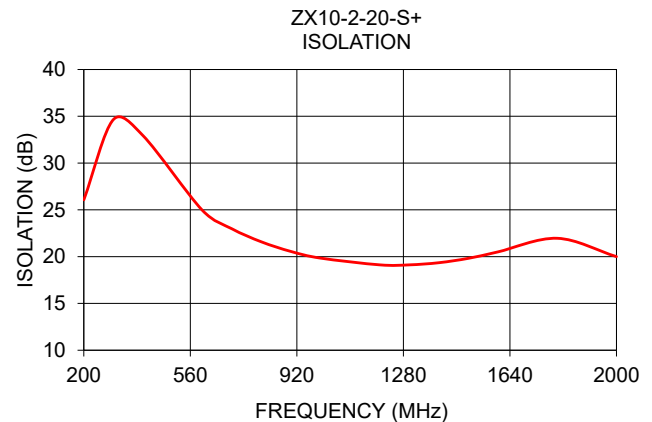
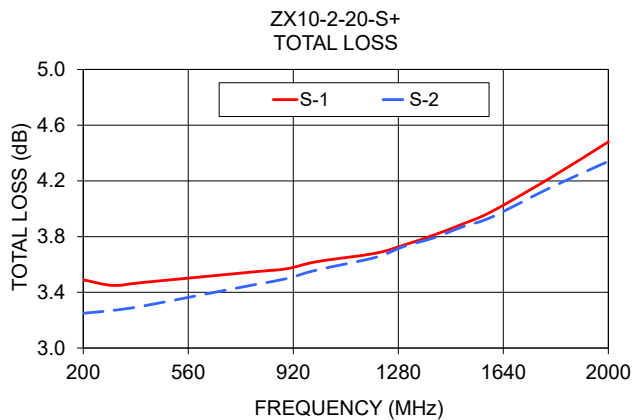
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2-Way 0° 50Ω 200 to 2000 MHz SMA Female

TYPICAL PERFORMANCE DATA

Freq. (MHz)	Insertion Loss ² (dB)		Ampl. Unbal. (dB)	Isolation (dB)	Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
200.00	3.49	3.25	0.25	26.07	1.50	1.40	1.51	1.47
300.00	3.45	3.27	0.19	34.65	0.82	1.40	1.37	1.37
400.00	3.47	3.30	0.17	32.93	0.41	1.40	1.28	1.31
600.00	3.51	3.38	0.14	24.97	0.06	1.40	1.18	1.23
700.00	3.53	3.42	0.11	22.98	0.20	1.40	1.14	1.19
800.00	3.55	3.46	0.10	21.58	0.31	1.40	1.10	1.16
900.00	3.57	3.50	0.07	20.55	0.37	1.39	1.07	1.13
1000.00	3.62	3.56	0.06	19.84	0.41	1.38	1.05	1.10
1200.00	3.68	3.65	0.03	19.12	0.51	1.34	1.08	1.04
1300.00	3.74	3.73	0.01	19.12	0.56	1.31	1.11	1.01
1400.00	3.81	3.79	0.01	19.35	0.38	1.27	1.15	1.02
1500.00	3.89	3.87	0.02	19.82	0.11	1.23	1.20	1.05
1600.00	3.98	3.94	0.02	20.51	0.14	1.18	1.25	1.09
1800.00	4.22	4.15	0.07	21.96	0.89	1.05	1.34	1.19
2000.00	4.48	4.34	0.14	20.00	2.24	1.12	1.41	1.28

2. Total Loss = Insertion Loss + 3 dB splitter loss.



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-Circuits' applicable established test performance criteria and measurement instructions.
- C. 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/terms/viewterm.html



2 Way-0° Power Splitter/Combiner

ZX10-2-20+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)		AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
200.0	3.50	3.25	0.25	25.09	1.69	200.0	1.37	1.60	1.52
260.0	3.51	3.31	0.21	30.35	1.38	260.0	1.37	1.49	1.44
320.0	3.48	3.29	0.19	37.46	1.07	320.0	1.37	1.42	1.38
380.0	3.48	3.31	0.16	37.74	0.89	380.0	1.37	1.37	1.34
440.0	3.51	3.35	0.16	32.15	0.79	440.0	1.38	1.33	1.31
500.0	3.49	3.35	0.14	28.64	0.65	500.0	1.38	1.29	1.29
560.0	3.49	3.37	0.13	26.28	0.54	560.0	1.38	1.26	1.26
620.0	3.53	3.40	0.12	24.59	0.44	620.0	1.39	1.23	1.24
680.0	3.52	3.41	0.11	23.24	0.42	680.0	1.39	1.20	1.22
740.0	3.54	3.44	0.10	22.18	0.42	740.0	1.40	1.18	1.20
800.0	3.54	3.45	0.10	21.29	0.38	800.0	1.41	1.16	1.18
840.0	3.58	3.51	0.07	20.83	0.42	840.0	1.41	1.15	1.16
880.0	3.55	3.47	0.08	20.34	0.30	880.0	1.41	1.14	1.15
920.0	3.60	3.53	0.07	19.99	0.44	920.0	1.41	1.13	1.14
960.0	3.59	3.54	0.05	19.65	0.44	960.0	1.42	1.13	1.13
1000.0	3.61	3.54	0.07	19.34	0.39	1000.0	1.42	1.12	1.12
1100.0	3.67	3.62	0.04	18.79	0.56	1100.0	1.42	1.13	1.09
1200.0	3.70	3.68	0.02	18.46	0.64	1200.0	1.42	1.15	1.08
1300.0	3.73	3.73	0.00	18.38	0.77	1300.0	1.42	1.20	1.09
1400.0	3.79	3.80	0.01	18.57	0.95	1400.0	1.42	1.25	1.11
1500.0	3.91	3.89	0.02	19.12	1.19	1500.0	1.41	1.31	1.14
1530.0	3.90	3.90	0.00	19.34	1.55	1530.0	1.41	1.33	1.16
1560.0	3.88	3.90	0.02	19.61	1.41	1560.0	1.41	1.35	1.17
1590.0	4.02	3.98	0.04	20.00	1.48	1590.0	1.41	1.38	1.18
1620.0	4.01	3.98	0.04	20.37	1.95	1620.0	1.40	1.40	1.20
1650.0	3.94	3.96	0.02	20.82	1.79	1650.0	1.40	1.42	1.21
1680.0	4.11	4.08	0.03	21.45	1.61	1680.0	1.40	1.44	1.23
1710.0	4.16	4.08	0.08	22.09	2.16	1710.0	1.40	1.46	1.25
1740.0	4.08	4.05	0.02	22.79	2.27	1740.0	1.40	1.49	1.26
1770.0	4.15	4.12	0.03	23.77	2.13	1770.0	1.41	1.51	1.28
1800.0	4.25	4.18	0.07	24.92	2.23	1800.0	1.41	1.54	1.30
1820.0	4.29	4.20	0.09	25.79	2.47	1820.0	1.42	1.55	1.31
1840.0	4.24	4.18	0.07	26.79	2.75	1840.0	1.42	1.57	1.32
1860.0	4.19	4.17	0.02	27.97	2.73	1860.0	1.43	1.59	1.33
1880.0	4.30	4.27	0.03	29.43	2.29	1880.0	1.44	1.61	1.34
1900.0	4.48	4.38	0.10	31.08	2.16	1900.0	1.44	1.62	1.36
1920.0	4.56	4.41	0.15	32.65	2.42	1920.0	1.46	1.64	1.37
1940.0	4.51	4.38	0.14	33.74	2.80	1940.0	1.47	1.65	1.38
1960.0	4.47	4.38	0.10	33.63	2.91	1960.0	1.48	1.67	1.40
1980.0	4.58	4.48	0.10	32.30	2.42	1980.0	1.50	1.68	1.41
2000.0	4.78	4.61	0.17	30.40	2.16	2000.0	1.52	1.70	1.42

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

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ZX10-2-20+
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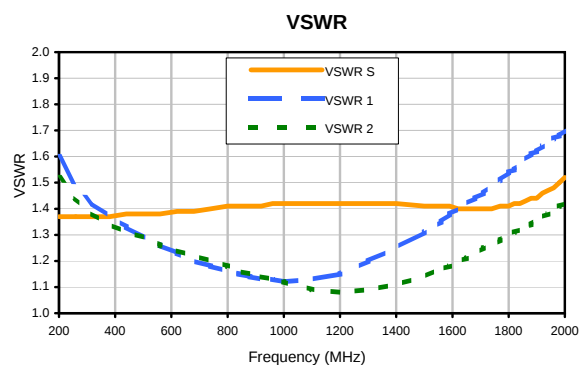
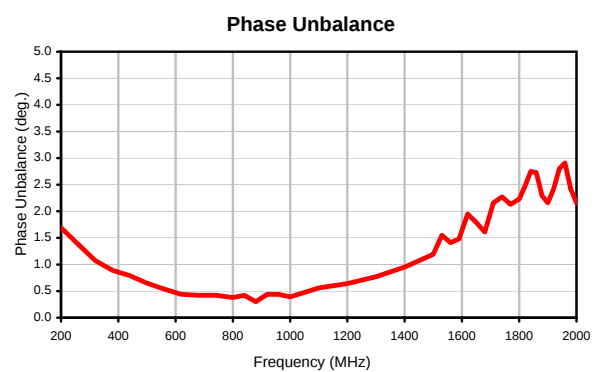
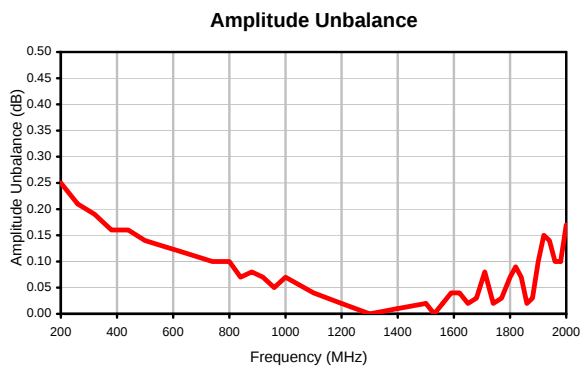
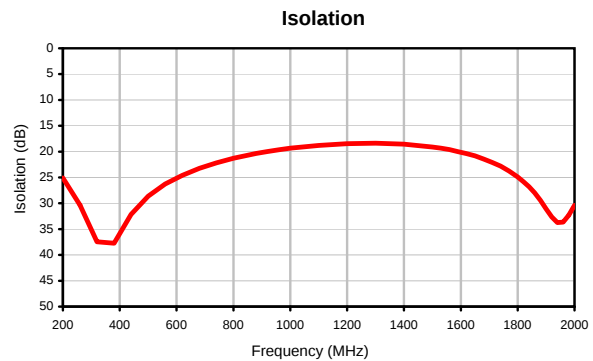
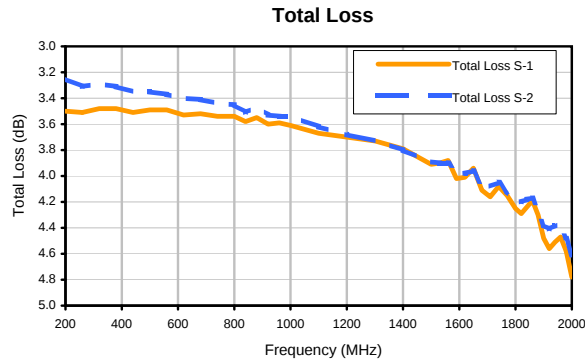
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2 Way-0° Power Splitter/Combiner

ZX10-2-20+

Typical Performance Curves



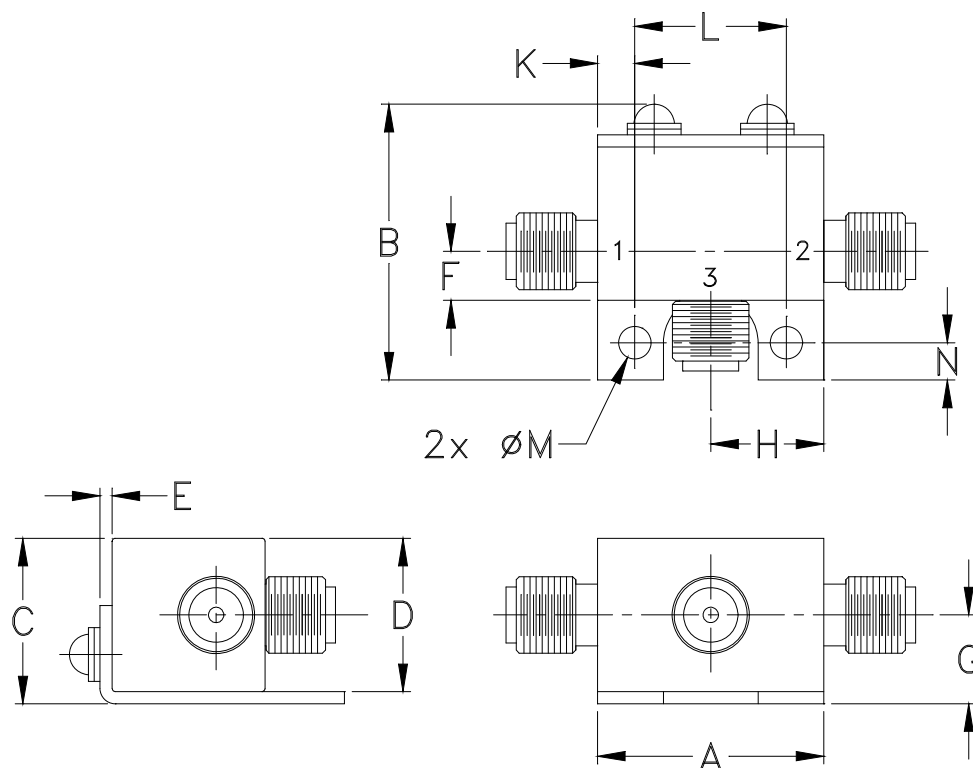
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Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
FL905	.74 (18.80)	.90 (22.86)	.54 (13.72)	.50 (12.70)	.04 (1.02)	.16 (4.06)	.29 (7.37)	.37 (9.40)	- -	.122 (3.10)	.496 (12.60)	.106 (2.69)	.122 (3.10)	20.0

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

Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Notes:

- Case material: Brass.
- Case finish: Nickel plate.



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Mini-Circuits ISO 9001 & ISO 14001 Certified



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	-40° to 85°C	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