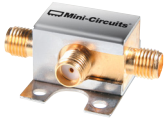
Coaxial

Power Splitter/Combiner

2 Way-0° Resistive 50Ω DC to 10000 MHz

ZX10R-14-S+



CASE STYLE: FL905

Connectors	Model
SMA	ZX10R-14-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
Power Input (as a splitter)	0.16W max.
Internal Dissipation	0.08W max.

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

Coaxial Connections

SUM PORT	3
PORT 1	1
PORT 2	2

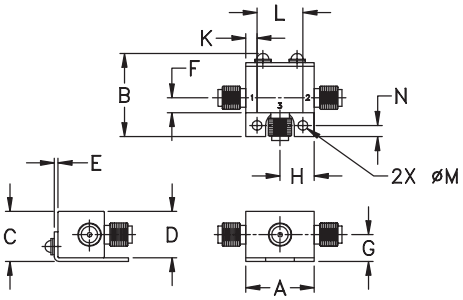
Features

- very wideband, DC to 10000 MHz
- very good phase unbalance, 1 deg. typ.
- excellent amplitude unbalance, 0.02 dB typ.
- rugged shielded case

Applications

- laboratory
- test set-ups

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

Electrical Specifications T_{AMB}=25°C

FREQ. RANGE (MHz)	ISOLATION (dB)			INSERTION LOSS (dB) ABOVE 6.0 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)		
	L	M	U	L		M		U		L	M	U	L	M	U
f_L-f_U	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
DC-10000	6.0	6.0	6.0	0.1	0.2	0.5	1.0	1.5	1.8	1	3	6	0.1	0.2	0.3

L = low range [DC-1000 MHz] M = mid range [1000 MHz to f_U/2] U= upper range [f_U/2 to f_U]

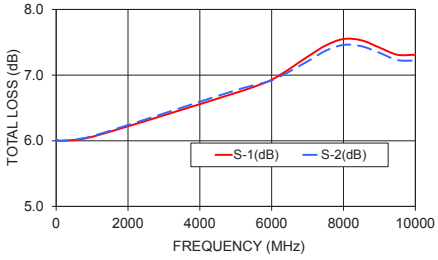
This is a resistive power divider to enable frequency coverage from dc to the highest rated frequency. Since resistive power divider do not provide a high degree of isolation (basically isolation equals the insertion loss between ports), an amplifier such as Mini-Circuits' ZFL series is recommended when high isolation is required. Matched power rating 0.16W, internal load dissipation 0.08W.

Typical Performance Data

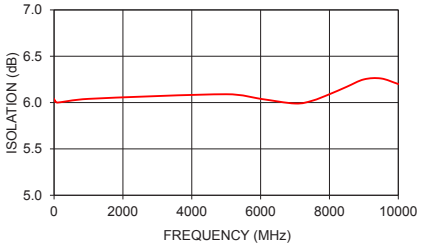
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
0.03	6.03	6.02	0.01	6.04	0.09	1.00	1.00	1.00
0.10	6.01	6.01	0.00	6.02	0.01	1.00	1.00	1.00
1.00	6.00	6.01	0.01	6.01	0.00	1.00	1.00	1.00
10.00	6.02	6.02	0.00	6.03	0.14	1.02	1.02	1.02
100.00	6.00	6.00	0.00	6.00	0.06	1.00	1.00	1.01
1000.00	6.06	6.07	0.01	6.04	0.44	1.01	1.01	1.00
5000.00	6.73	6.77	0.04	6.09	1.20	1.22	1.17	1.16
6000.00	6.93	6.92	0.01	6.04	1.34	1.25	1.21	1.20
7000.00	7.28	7.21	0.06	5.99	1.78	1.26	1.19	1.21
7500.00	7.45	7.37	0.08	6.02	2.08	1.24	1.19	1.21
8000.00	7.55	7.46	0.09	6.09	2.39	1.22	1.20	1.22
8500.00	7.53	7.44	0.09	6.17	2.70	1.20	1.21	1.24
9000.00	7.42	7.34	0.08	6.25	2.91	1.19	1.21	1.24
9500.00	7.31	7.23	0.08	6.26	3.06	1.20	1.17	1.22
10000.00	7.31	7.22	0.09	6.20	3.18	1.23	1.12	1.17

1. Total Loss = Insertion Loss + 6dB splitter loss.

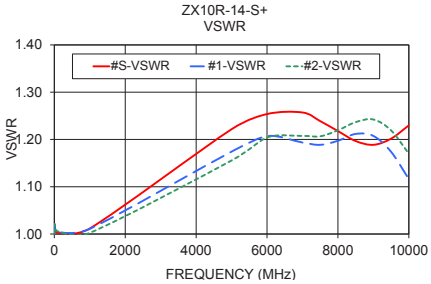
ZX10R-14-S+
TOTAL LOSS



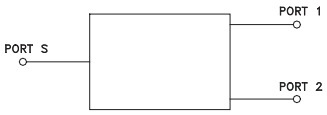
ZX10R-14-S+
ISOLATION



ZX10R-14-S+
VSWR



electrical schematic



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-Circuit's 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/MCLStore/terms.jsp

2 Way-0° Resistive Power Splitter/Combiner ZX10R-14+

Typical Performance Data

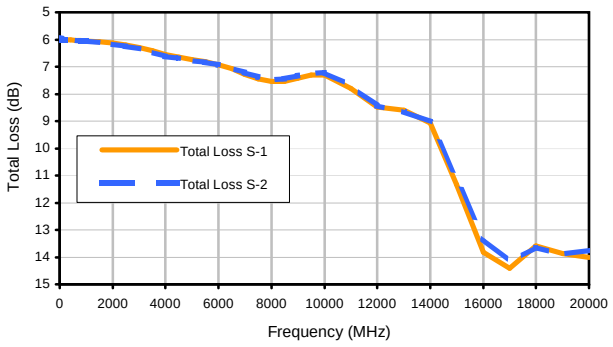
FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	TOTAL LOSS[1] (dB) S-2	AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1) S	VSWR (:1) 1	VSWR (:1) 2
0.0	6.03	6.02	0.01	6.04	0.09	0.0	1.00	1.00	1.00
1.0	6.00	6.01	0.01	6.01	0.00	1.0	1.00	1.00	1.00
2.0	6.03	6.02	0.01	6.01	0.08	2.0	1.00	1.00	1.00
3.0	6.02	6.01	0.01	6.02	0.01	3.0	1.00	1.00	1.00
4.0	6.01	6.01	0.00	6.00	0.06	4.0	1.00	1.00	1.00
5.0	6.01	6.02	0.01	6.01	0.06	5.0	1.00	1.00	1.00
6.0	6.00	6.01	0.00	6.01	0.12	6.0	1.00	1.00	1.00
7.0	6.01	6.02	0.01	6.01	0.06	7.0	1.00	1.00	1.00
8.0	6.01	6.02	0.01	6.01	0.03	8.0	1.00	1.00	1.00
9.0	6.02	6.02	0.00	6.02	0.02	9.0	1.00	1.00	1.00
10.0	6.02	6.02	0.00	6.03	0.14	10.0	1.02	1.02	1.02
40.0	6.01	6.00	0.01	6.01	0.12	40.0	1.01	1.01	1.01
80.0	5.99	5.99	0.00	5.98	0.03	80.0	1.00	1.00	1.01
100.0	6.00	6.00	0.00	6.00	0.06	100.0	1.00	1.00	1.01
140.0	6.00	6.00	0.00	6.00	0.06	140.0	1.00	1.00	1.01
180.0	6.01	6.01	0.00	6.00	0.09	180.0	1.00	1.00	1.00
200.0	6.01	6.01	0.01	6.01	0.10	200.0	1.00	1.00	1.00
400.0	6.02	6.02	0.00	6.02	0.18	400.0	1.00	1.00	1.00
600.0	6.03	6.03	0.00	6.02	0.29	600.0	1.00	1.00	1.00
800.0	6.04	6.05	0.01	6.03	0.38	800.0	1.01	1.01	1.00
1000.0	6.06	6.07	0.01	6.04	0.44	1000.0	1.01	1.01	1.00
1500.0	6.09	6.11	0.02	6.04	0.62	1500.0	1.03	1.02	1.01
2000.0	6.13	6.17	0.03	6.04	0.77	2000.0	1.05	1.04	1.02
2500.0	6.20	6.24	0.04	6.03	0.88	2500.0	1.08	1.06	1.04
3000.0	6.30	6.35	0.05	6.03	0.95	3000.0	1.11	1.09	1.07
3500.0	6.42	6.47	0.05	6.04	1.05	3500.0	1.14	1.11	1.09
4000.0	6.56	6.62	0.06	6.07	1.14	4000.0	1.17	1.13	1.11
4500.0	6.64	6.70	0.06	6.10	1.14	4500.0	1.20	1.15	1.13
5000.0	6.73	6.77	0.04	6.09	1.20	5000.0	1.22	1.17	1.16
5500.0	6.81	6.84	0.03	6.07	1.24	5500.0	1.24	1.19	1.18
6000.0	6.93	6.92	0.01	6.04	1.34	6000.0	1.25	1.21	1.20
6500.0	7.08	7.05	0.03	6.00	1.53	6500.0	1.26	1.20	1.21
7000.0	7.28	7.21	0.06	5.99	1.78	7000.0	1.26	1.19	1.21
7500.0	7.45	7.37	0.08	6.02	2.08	7500.0	1.24	1.19	1.21
8000.0	7.55	7.46	0.09	6.09	2.39	8000.0	1.22	1.20	1.22
8500.0	7.53	7.44	0.09	6.17	2.70	8500.0	1.20	1.21	1.24
9000.0	7.42	7.34	0.08	6.25	2.91	9000.0	1.19	1.21	1.24
9500.0	7.31	7.23	0.08	6.26	3.06	9500.0	1.20	1.17	1.22
10000.0	7.31	7.22	0.09	6.20	3.18	10000.0	1.23	1.12	1.17
11000.0	7.81	7.69	0.12	5.91	3.69	11000.0	1.26	1.04	1.04
12000.0	8.49	8.44	0.06	5.81	4.26	12000.0	1.19	1.11	1.05
13000.0	8.61	8.65	0.04	6.08	3.76	13000.0	1.14	1.23	1.11
14000.0	9.08	9.02	0.05	6.21	2.88	14000.0	1.10	1.59	1.41
15000.0	11.33	11.10	0.24	6.30	2.92	15000.0	1.23	1.89	1.75
16000.0	13.82	13.31	0.51	6.67	3.83	16000.0	1.44	1.84	1.75
17000.0	14.40	14.18	0.23	7.39	7.40	17000.0	1.50	1.97	1.97
18000.0	13.59	13.64	0.05	8.38	5.69	18000.0	1.59	2.46	2.56
19000.0	13.87	13.90	0.03	8.85	4.20	19000.0	1.72	2.96	3.13
20000.0	14.00	13.76	0.24	8.36	3.00	20000.0	1.68	3.17	3.45

[1] Total Loss = Insertion Loss + 6dB Splitter Loss

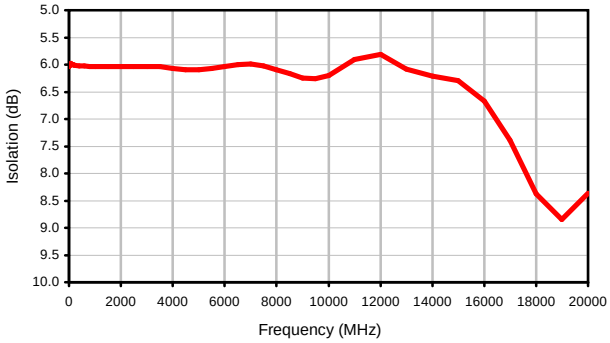
2 Way-0° Resistive Power Splitter/Combiner ZX10R-14+

Typical Performance Curves

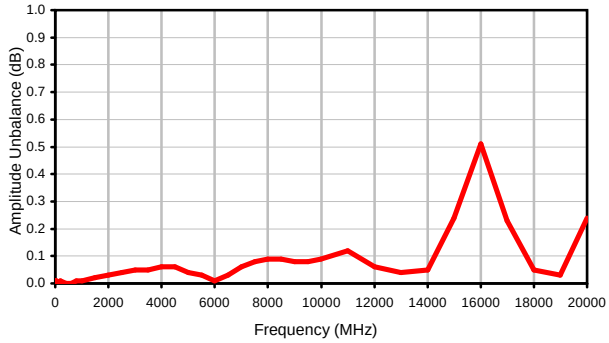
Total Loss



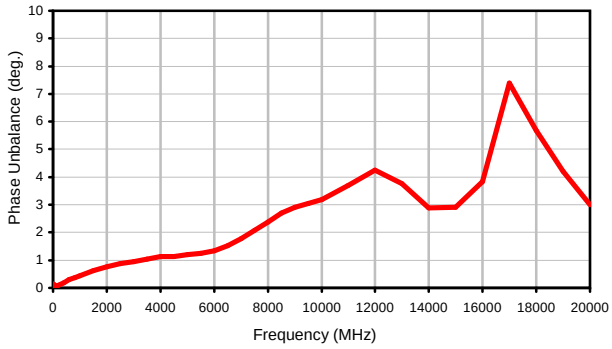
Isolation



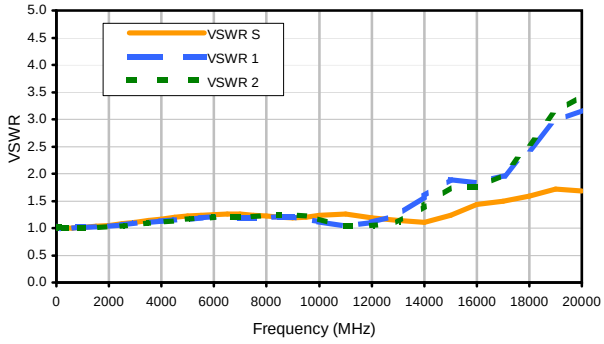
Amplitude Unbalance



Phase Unbalance



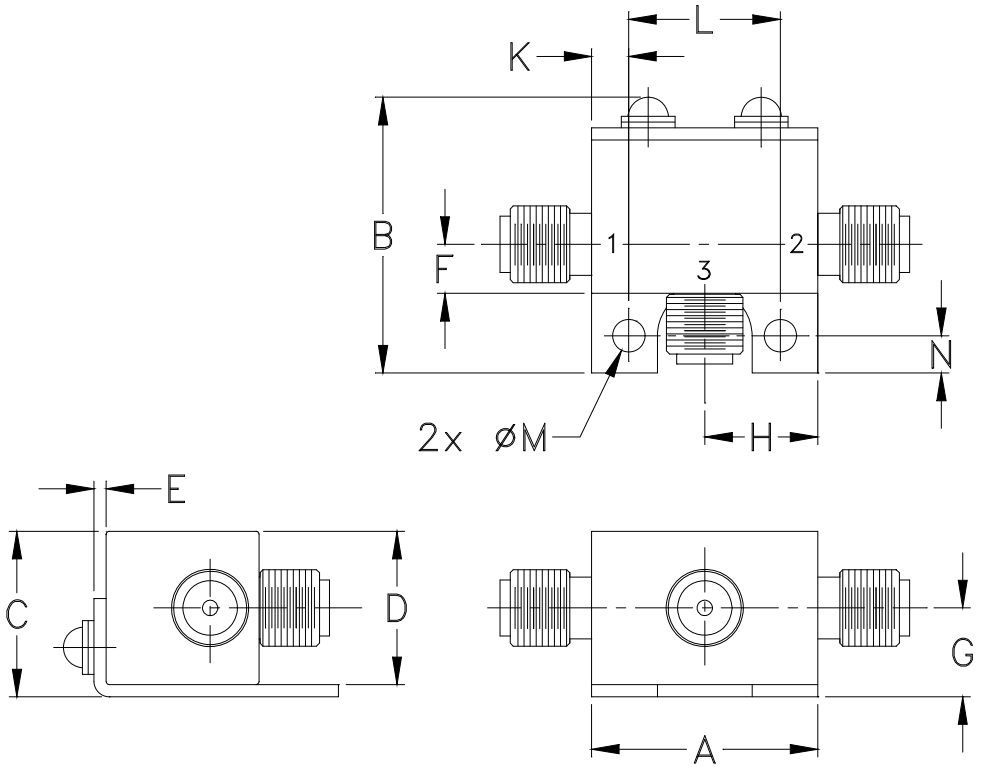
VSWR



Case Style FL

FL905

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. ± .03; 3Pl. ± .015.
Tolerance on hole size and interaxes dimensions to be ±.005.

Notes:

1. Case material: Brass.
2. Case finish: Nickel plate.

Mini-Circuits®
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Environmental Specifications **ENV28T5**

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