



COAXIAL

## Power Splitter/Combiner

ZX10R-2-183-S+

Mini-Circuits

2 Way -0° 50Ω DC to 18000 MHz

## THE BIG DEAL

- Wide bandwidth, DC to 18 GHz
- Excellent isolation, 20 dB typ. at 12 GHz
- Excellent amplitude unbalance, 0.1 dB typ. to 18 GHz
- Good phase unbalance, 3.3° at 12 GHz
- Patent pending
- Rugged unibody case

## APPLICATIONS

- WIMAX
- ISM
- Instrumentation
- Radar
- WLAN
- Satellite communications
- LTE

## PRODUCT OVERVIEW

Mini-Circuits' ZX10R-2-183-S+ is a coaxial 2-way 0° splitter/combiner designed for wideband operation from DC to 18 GHz supporting many applications requiring high performance across a wide frequency range including all the LTE bands through WiMax and WiFi, as well as instrumentation and more. This model provides excellent power handling up to 0.6W (as a splitter/combiner) with good isolation, and low phase and amplitude unbalance in a rugged, compact case 0.74 x 0.90 x 0.54" with SMA connectors.



Generic photo used for illustration purposes only

Model No.	ZX10R-2-183-S+
Case Style	FL2227
Connectors	SMA-Female

## +RoHS Compliant

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

## KEY FEATURES

Feature	Advantages
Wideband, DC to 18 GHz	One power splitter can be used in a HF thru, LTE bands, WiMax and WiFi, saving component count. Also ideal for wideband applications such as military and instrumentation.
High isolation, 20 dB typ. at 12 GHz Excellent power handling, 0.6W as a splitter / combiner	In power combiner applications, half the power is dissipated internally. ZX10R-2-183-S+ is designed to handle 0.6W internal dissipation as a combiner allowing reliable operation without excessive temperature rise.
Excellent Amplitude unbalance, 0.1 dB typ. Good phase unbalance, 3.3° typ. at 12 GHz	Ideal for Applications such as WMO & phased array radars
Rugged, unibody construction	Mini-Circuits' unibody construction integrates the RF connector into the case body, providing high reliability and excellent survivability in critical applications.

REV. OR  
ECO-009321  
ZX10R-2-183-S+  
MCL NY  
210819





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## MAXIMUM RATINGS

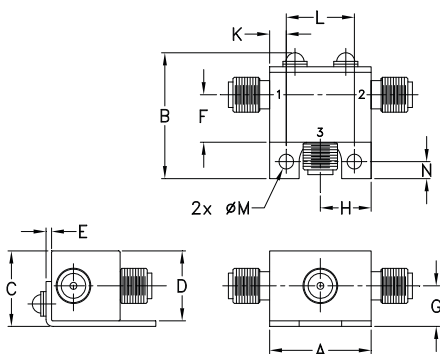
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.6W max. at 25°C
Internal Dissipation	0.6W max. at 25°C

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

## COAXIAL CONNECTIONS

Sum Port	S
Port 1-2	1-2

## OUTLINE DRAWING



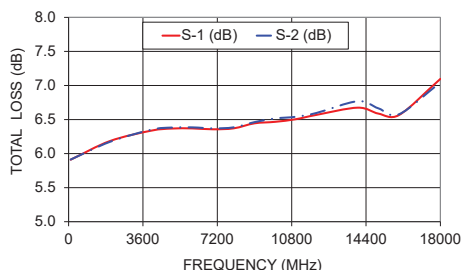
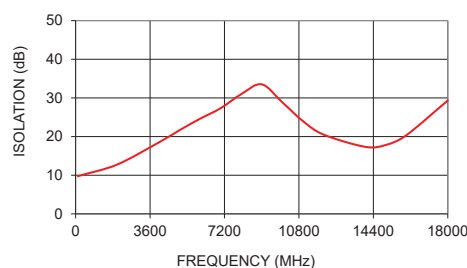
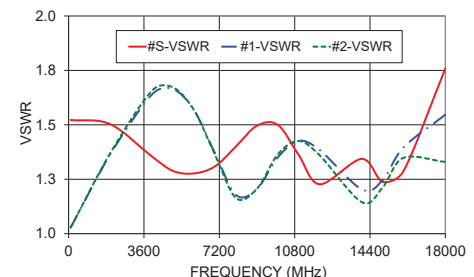
## OUTLINE DIMENSIONS (INCH/MM)

A	B	C	D	E	F	G
.74	.90	.54	.50	.04	.34	.29
18.80	22.86	13.72	12.70	1.02	8.64	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 SCHEMATIC

ZX10R-2-183-S+  
TOTAL LOSSZX10R-2-183-S+  
ISOLATIONZX10R-2-183-S+  
VSWR

## 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](http://www.minicircuits.com/MCLStore/terms.jsp)

## ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		18000	MHz
Insertion Loss Above 3 dB	DC-4 4-18	— —	3.3 3.9	4.0 4.5	dB
Isolation	DC-4 4-18	8 14	13 26	— —	dB
Phase Unbalance ( $\pm$ ) <sup>1</sup>	DC-4 4-18	— —	1 2	5 15	Degree
Amplitude Unbalance ( $\pm$ ) <sup>1</sup>	DC-4 4-18	— —	0.1 0.2	0.4 0.6	dB
VSWR (Port S)	DC-4 4-18	— —	1.5 1.3	— —	:1
VSWR (Port 1-2)	DC-4 4-18	— —	1.4 1.4	— —	:1

1. With reference to average.

## TYPICAL PERFORMANCE DATA

Freq. (MHz)	Insertion Loss (dB)		Ampl. Unbal. (dB)	Isolation (dB)	Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
100	5.91	5.91	0.00	9.74	0.02	1.52	1.03	1.03
2000	6.18	6.17	0.01	12.74	0.19	1.50	1.37	1.37
4000	6.34	6.35	0.01	18.41	0.30	1.35	1.64	1.66
5000	6.37	6.38	0.01	21.56	0.33	1.29	1.66	1.67
6000	6.37	6.38	0.02	24.57	0.38	1.28	1.57	1.57
7000	6.36	6.37	0.01	27.29	0.47	1.31	1.37	1.36
8000	6.37	6.39	0.01	30.94	0.60	1.40	1.18	1.16
9000	6.44	6.46	0.02	33.52	0.73	1.50	1.21	1.21
10000	6.47	6.52	0.05	28.85	0.64	1.50	1.35	1.36
11000	6.51	6.54	0.04	23.98	0.65	1.36	1.43	1.43
12000	6.57	6.60	0.03	20.49	0.76	1.23	1.38	1.36
14000	6.67	6.77	0.09	17.35	0.76	1.34	1.20	1.15
15000	6.59	6.66	0.08	17.83	0.40	1.24	1.25	1.21
16000	6.57	6.58	0.01	20.37	0.44	1.29	1.40	1.35
18000	7.10	7.05	0.05	29.34	1.38	1.76	1.55	1.33

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



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