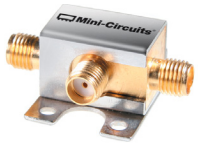
DC Pass

Power Splitter/Combiner ZX10-2-852-S+

2 Way-0° 50Ω 500 to 8500 MHz

The Big Deal

- Ultra-Wideband, 500 to 8500 MHz
- Good VSWR, 1.4:1 typ.
- Low unbalance, 0.1 dB
- Rugged unibody case



CASE STYLE: FL2227

Product Overview

Mini-Circuits' ZX10-2-852-S+ is a coaxial, ultra-wideband 2-way 0˚ splitter combiner providing RF input power handling up to 2.5W as a splitter for an wide range of applications from 500 to 8500 MHz. The splitter/combiner comes housed in a rugged, compact case with SMA connectors.

Key Features

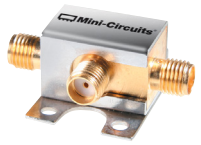
Feature	Advantages
Ultra-wideband, 500 to 8500 MHz	ZX10-2-852-S+ supports bandwidth requirements for a wide variety of applications including broadband applications such as instrumentation and defense.
Good VSWR, 1.4:1	Provides excellent thru-path transmission with minimal signal reflection.
Low amplitude unbalance, 0.1 dB	Produces nearly equal output signals, ideal for parallel path / multichannel systems.
DC passing up to 0.4 A	Supports applications where DC power is needed through the RF line.
Rugged, unibody construction	Mini-Circuits' unibody construction integrates the RF connector into the case body, providing high reliability and excellent survivability in critical applications.

DC Pass

Power Splitter/Combiner

ZX10-2-852-S+

2 Way-0° 50Ω 500 to 8500 MHz



CASE STYLE: FL2227

Connectors	Model
SMA	ZX10-2-852-S+

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

Maximum Ratings

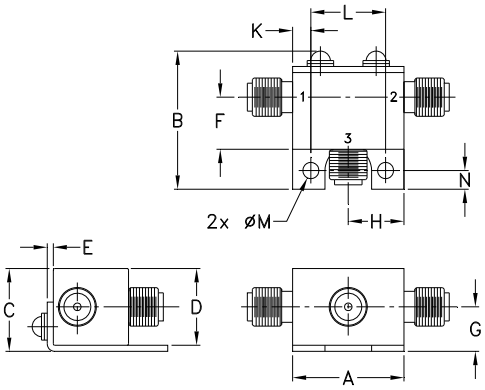
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	2.5W[1] max. at 25°C
Internal Dissipation	1.7W[2] max. at 25°C
DC Current	0.4 A max.

Permanent damage may occur if any of these limits are exceeded.
1. Derate linearly to 1.25W at 85°C
2. Derate linearly to 1.1W at 85°C

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	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

Features

- wide bandwidh, 500 to 8500 MHz
- excellent amplitude unbalance, 0.1 dB typ.
- small size
- high ESD level*
- DC passing
- protected under US patent 6,790,049

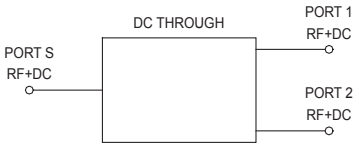
Applications

- WIMAX
- ISM
- instrumentation
- radar
- WLAN
- satellite communications
- LTE

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency		500		8500	MHz
Insertion Loss (above theoretical 3.0 dB)	500 - 3000	—	1.1	1.5	dB
	3000 - 6000	—	1.9	2.2	
	6000 - 8500	—	3.0	3.4	
Isolation	500 - 3000	6.3	9.4	—	dB
	3000 - 6000	16.8	20.6	—	
	6000 - 8500	12.4	18.2	—	
Phase Unbalance	500 - 3000	—	2.0	4	Degree
	3000 - 6000	—	2.0	7	
	6000 - 8500	—	4.0	8	
Amplitude Unbalance	500 - 3000	—	0.1	0.3	dB
	3000 - 6000	—	0.2	0.5	
	6000 - 8500	—	0.3	0.9	
VSWR (Port S)	500 - 3000	—	1.5	—	:1
	3000 - 6000	—	1.3	—	
	6000 - 8500	—	1.5	—	
VSWR (Port 1-2)	500 - 3000	—	1.25	—	:1
	3000 - 6000	—	1.4	—	
	6000 - 8500	—	1.7	—	

Electrical Schematic



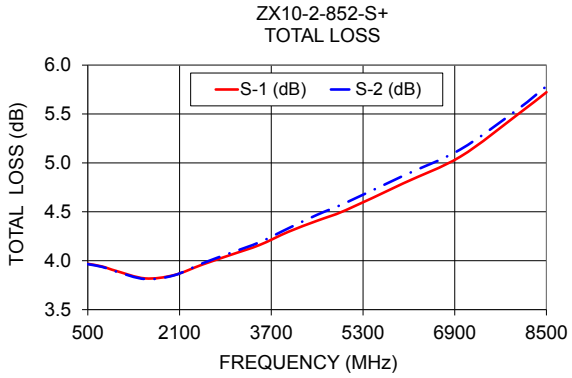
* ESD rating
Human body model (HBM): Class 2 (1800 to 4000V) inaccordance with ANSI / ESD 5.1-2007.
Machine model (MM). Class M3 (200 to <400V) in accordance with ANSI / ESD 5.2-2009

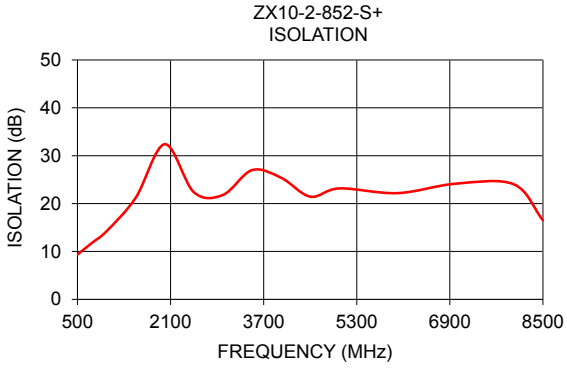
Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

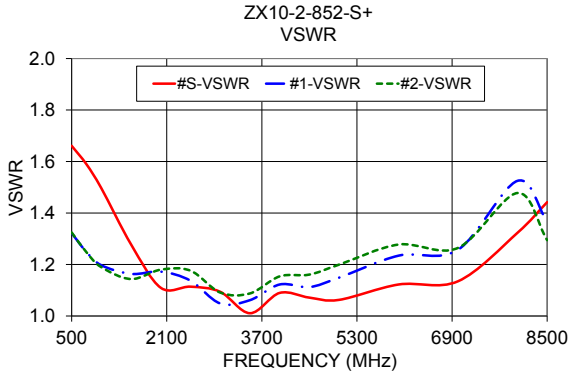
Typical Performance Data

Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
500	3.97	3.96	0.00	9.36	0.25	1.66	1.32	1.32
750	3.94	3.94	0.00	11.80	0.36	1.59	1.25	1.25
1000	3.89	3.89	0.01	14.23	0.49	1.50	1.20	1.19
1500	3.82	3.81	0.01	21.20	0.73	1.28	1.16	1.14
2000	3.85	3.85	0.00	32.40	0.95	1.11	1.17	1.18
2500	3.96	3.97	0.01	22.37	1.20	1.11	1.14	1.18
3000	4.06	4.08	0.02	21.80	1.55	1.09	1.05	1.09
3500	4.16	4.19	0.03	26.99	1.84	1.01	1.06	1.09
4000	4.30	4.33	0.04	25.40	2.11	1.09	1.12	1.15
4500	4.41	4.47	0.06	21.45	2.40	1.07	1.11	1.16
5000	4.52	4.59	0.08	23.17	2.83	1.06	1.15	1.20
6000	4.79	4.87	0.08	22.18	3.50	1.12	1.23	1.28
7000	5.06	5.14	0.07	24.16	4.27	1.13	1.26	1.26
8000	5.50	5.55	0.05	24.03	4.54	1.32	1.52	1.48
8500	5.72	5.78	0.06	16.52	4.78	1.44	1.37	1.29

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







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2 Way-0° Power Splitter/Combiner ZX10-2-852-S+

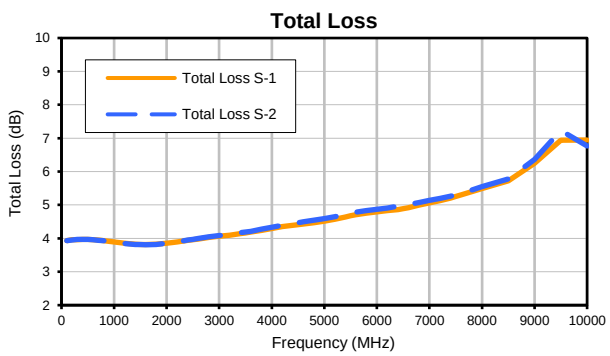
Typical Performance Data

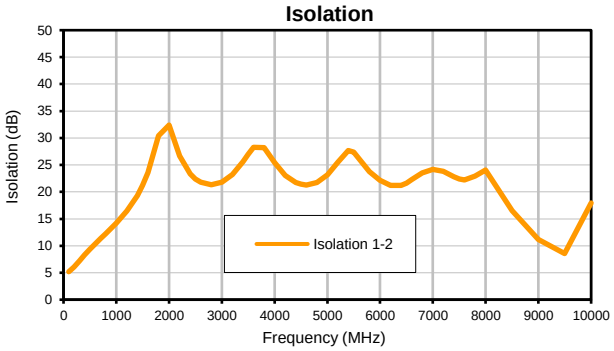
FREQUENCY (MHz)	TOTAL LOSS[1] (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)	PHASE UNBALANCE (deg.)	FREQUENCY (MHz)	VSWR (:1)		
	S-1	S-2		1-2			S	1	2
100	3.93	3.93	0.00	5.18	0.09	100	1.75	1.51	1.51
200	3.96	3.95	0.01	6.07	0.06	200	1.73	1.46	1.46
300	3.96	3.97	0.00	7.17	0.16	300	1.71	1.40	1.41
400	3.97	3.97	0.00	8.30	0.21	400	1.68	1.36	1.36
500	3.97	3.96	0.00	9.36	0.25	500	1.66	1.32	1.32
600	3.96	3.96	0.00	10.36	0.30	600	1.63	1.29	1.29
700	3.95	3.95	0.00	11.32	0.34	700	1.61	1.26	1.26
800	3.93	3.93	0.00	12.27	0.40	800	1.57	1.24	1.23
900	3.91	3.91	0.01	13.24	0.45	900	1.53	1.21	1.21
1000	3.89	3.89	0.01	14.23	0.49	1000	1.50	1.20	1.19
1200	3.85	3.85	0.01	16.46	0.59	1200	1.41	1.17	1.15
1400	3.83	3.82	0.01	19.32	0.68	1400	1.32	1.16	1.14
1500	3.82	3.81	0.01	21.20	0.73	1500	1.28	1.16	1.14
1600	3.81	3.81	0.01	23.57	0.77	1600	1.24	1.17	1.15
1800	3.82	3.82	0.01	30.43	0.86	1800	1.16	1.17	1.16
2000	3.85	3.85	0.00	32.40	0.95	2000	1.11	1.17	1.18
2200	3.89	3.89	0.00	26.65	1.04	2200	1.09	1.17	1.19
2400	3.94	3.95	0.01	23.32	1.13	2400	1.11	1.15	1.18
2500	3.96	3.97	0.01	22.37	1.20	2500	1.11	1.14	1.18
2600	3.98	4.00	0.02	21.78	1.27	2600	1.12	1.12	1.16
2800	4.02	4.04	0.02	21.34	1.41	2800	1.11	1.09	1.13
3000	4.06	4.08	0.02	21.80	1.55	3000	1.09	1.05	1.09
3200	4.10	4.12	0.02	23.20	1.66	3200	1.06	1.03	1.07
3400	4.14	4.17	0.03	25.59	1.78	3400	1.02	1.05	1.07
3500	4.16	4.19	0.03	26.99	1.84	3500	1.01	1.06	1.09
3600	4.19	4.21	0.03	28.29	1.92	3600	1.02	1.08	1.11
3800	4.24	4.27	0.03	28.21	2.02	3800	1.06	1.11	1.14
4000	4.30	4.33	0.04	25.40	2.11	4000	1.09	1.12	1.15
4200	4.35	4.39	0.05	23.05	2.20	4200	1.09	1.12	1.16
4400	4.39	4.45	0.06	21.77	2.34	4400	1.08	1.11	1.16
4500	4.41	4.47	0.06	21.45	2.40	4500	1.07	1.11	1.16
4600	4.43	4.49	0.07	21.28	2.48	4600	1.05	1.11	1.17
4800	4.47	4.54	0.08	21.71	2.66	4800	1.02	1.12	1.18
5000	4.52	4.59	0.08	23.17	2.83	5000	1.06	1.15	1.20
5200	4.58	4.65	0.08	25.53	2.93	5200	1.11	1.19	1.23
5400	4.64	4.72	0.07	27.66	3.10	5400	1.17	1.23	1.26
5500	4.67	4.75	0.08	27.37	3.16	5500	1.19	1.24	1.28
5600	4.70	4.78	0.08	26.22	3.23	5600	1.20	1.24	1.29
5800	4.75	4.83	0.08	23.77	3.37	5800	1.18	1.25	1.29
6000	4.79	4.87	0.08	22.18	3.50	6000	1.12	1.23	1.28
6200	4.83	4.91	0.08	21.20	3.54	6200	1.07	1.23	1.25
6400	4.86	4.96	0.10	21.20	3.70	6400	1.00	1.21	1.25
6500	4.89	4.98	0.09	21.63	3.80	6500	1.03	1.20	1.24
6600	4.92	5.02	0.10	22.28	3.98	6600	1.07	1.22	1.26
6800	4.99	5.08	0.08	23.55	4.20	6800	1.12	1.24	1.27
7000	5.06	5.14	0.07	24.16	4.27	7000	1.13	1.26	1.26
7200	5.13	5.19	0.06	23.82	4.29	7200	1.11	1.29	1.27
7400	5.20	5.26	0.06	22.82	4.45	7400	1.03	1.32	1.29
7500	5.25	5.31	0.05	22.38	4.52	7500	1.03	1.35	1.30
7600	5.30	5.35	0.05	22.21	4.55	7600	1.08	1.38	1.33
7800	5.40	5.44	0.05	22.93	4.56	7800	1.20	1.47	1.41
8000	5.50	5.55	0.05	24.03	4.54	8000	1.32	1.52	1.48
8500	5.72	5.78	0.06	16.52	4.78	8500	1.44	1.37	1.29
9000	6.25	6.36	0.11	11.20	4.66	9000	1.80	1.55	1.33
9500	6.94	7.23	0.29	8.55	6.47	9500	2.31	1.82	1.72
10000	6.94	6.76	0.18	17.93	6.62	10000	1.76	1.78	1.42

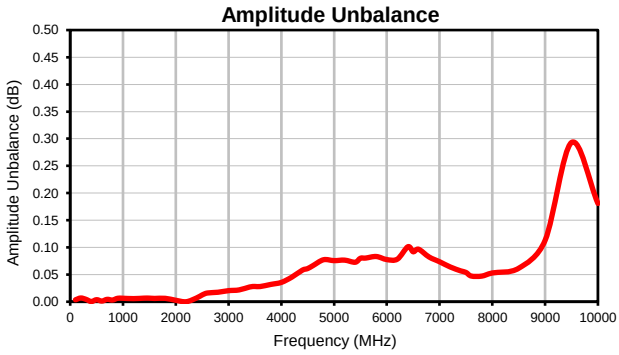
[1]Total Loss = Insertion Loss + 3dB Splitter Loss

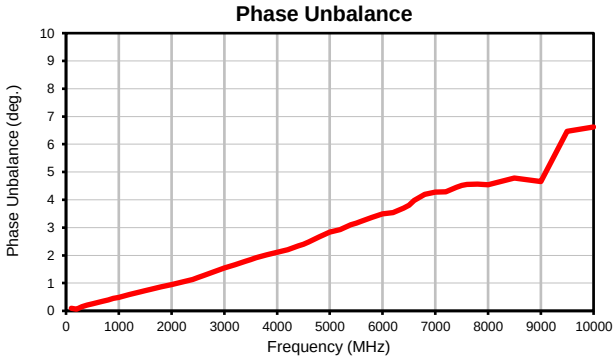
2 Way-0° Power Splitter/Combiner ZX10-2-852-S+

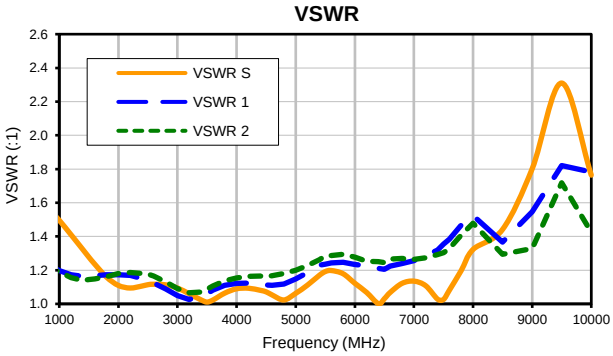
Typical Performance Curves







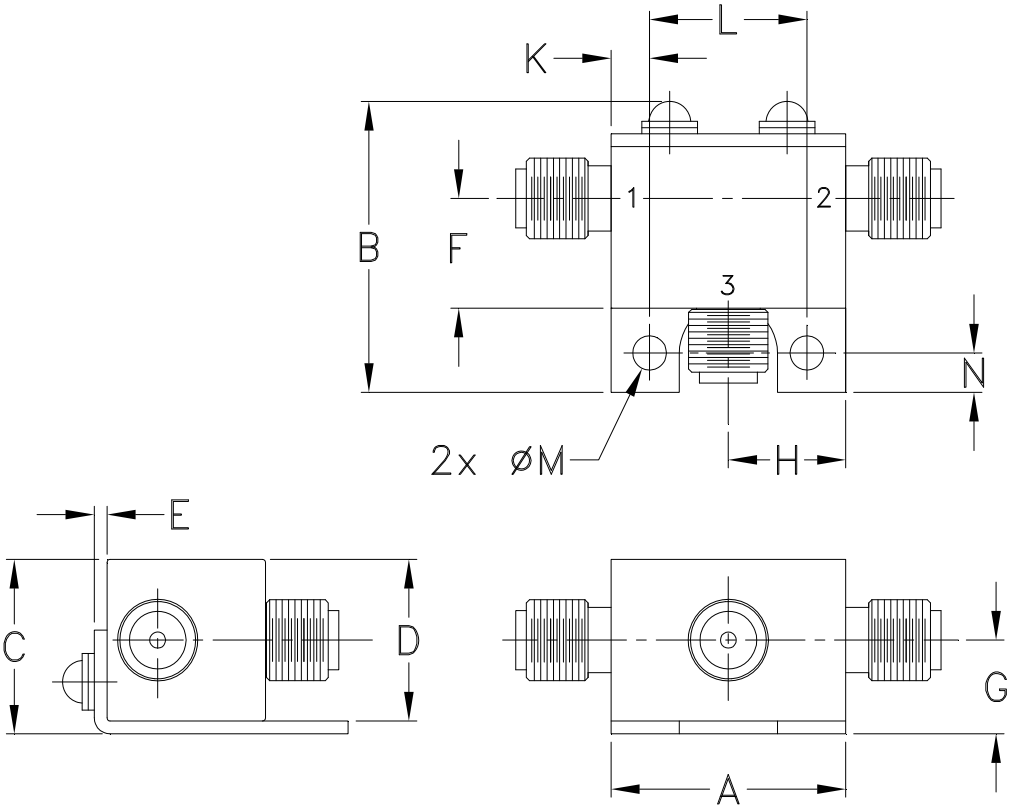




Case Style FL

FL2227

Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
FL2227	.74 (18.80)	.90 (22.86)	.54 (13.72)	.50 (12.70)	.04 (1.02)	.34 (8.64)	.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®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

Mini-Circuits

Environmental Specifications ENV08T1

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 Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C or -65° to 150° Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Mechanical Shock	1.5Kg, 0.5 ms, 5 shock pulses, Y1 direction only	MIL-STD-883, Method 2002, Condition B, except Y1 direction only
Vibration (Variable Frequency)	50g peak	MIL-STD-883, Method 2007, Condition B
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102, Condition C
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 260°C peak	J-STD-020
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether +	MIL-STD-202, Method 215

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
	monoethanolamine at 63°C to 70°C	