Coaxial

High Power Combiner

ZA2CS-251-20W+

2 Way-0° 50Ω 10 to 250 MHz 20 Watt

The Big Deal

- High power, up to 20W as a combiner (each input port)
- Low insertion loss, 0.17 dB
- High isolation, 25 dB
- Low unbalance, 0.5˚/0.05 dB

CASE STYLE: AW254

Product Overview

Mini-Circuits' ZA2CS-251-20W+ is a 2-way 0˚ splitter/combiner providing 20W power handling and very low insertion loss across the 10 to 250 MHz band, covering applications including AM/FM radio, VHF/UHF, instrumentation and more. Its low intrinsic losses provide excellent signal fidelity from input to output, even to high-power signals. This model also provides high isolation and very low amplitude and phase unbalance. It features rugged construction with your choice of SMA or N-Type connectors and a heat sink for efficient cooling.

Key Features

Feature	Advantages
Feature 1 High power handling: • Up to 25W as a splitter • Up to 20W as a combiner	Suitable for many high power applications.
Very low insertion loss, 0.17 dB	Very low insertion loss minimizes intrinsic losses, making this model a suitable candidate for high power signal distribution applications where low loss is a requirement.
Very low unbalance: • 0.05 dB amplitude unbalance • 0.5˚ phase unbalance	ZA2CS-251-20+ produces nearly equal output signals, ideal for parallel path / multichannel systems.
Good isolation, 25 dB	Minimizes interference between input ports.
Excellent VSWR, 1.1:1 typ.	Provides excellent thru-path transmission with low signal reflection.

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Connectors	Model
N-TYPE	ZA2CS-251-20WN+
SMA	ZA2CS-251-20WS+

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 60°C
Storage Temperature	-55°C to 100°C

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2

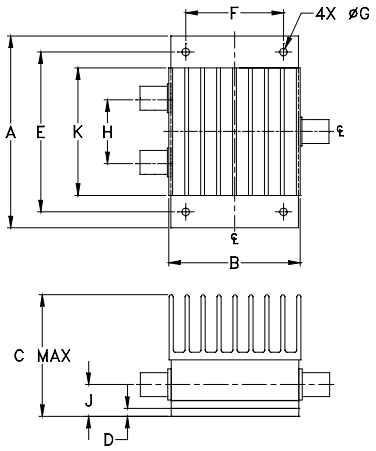
Features

- high power, up to 20W input power as combiner
- low insertion loss, .17 dB typ.
- high isolation, 30 dB typ.
- excellent VSWR, 1.1:1 typ.

Applications

- instrumentation
- VHF/UHF
- AM/FM RADIO

Outline Drawing

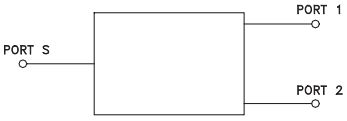


Outline Dimensions (inch / mm)

A	B	C	D	E	F
3.00	2.06	1.92	.100	2.500	1.525
76.20	52.32	48.77	2.54	63.50	38.74

G	H	J	K	wt
.125	1.000	.50	2.00	grams
3.18	25.40	12.70	50.80	330

Electrical Schematic



Electrical Specifications at 25°C

Parameter		Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range			10		250	MHz
Insertion Loss Above 3.0 dB		10 - 250 25 - 120	— —	0.25 0.17	0.5 0.4	dB
Isolation		10 - 250 25 - 120	15 20	20 25	— —	dB
Phase Unbalance		10 - 250	—	0.5	2	Degree
Amplitude Unbalance		10 - 250	—	.05	0.25	dB
VSWR (Port S)		10 - 250	—	1.15	1.5	:1
VSWR (Port 1-2)		10 - 250	—	1.20	1.6	:1
Power Input	**as combiner***	10 - 250 25 - 120	— —	— —	10 20	W
	as splitter	10 - 250 25 - 120	— —	— —	25 65	

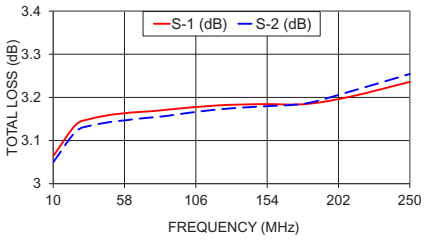
* Maximum Power Input for each port.

Typical Performance Data

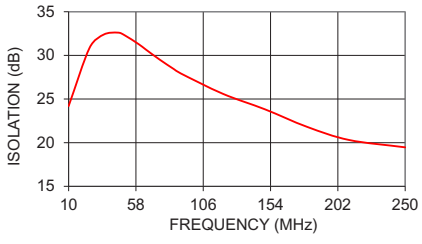
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
10	3.06	3.05	0.01	24.19	0.01	1.16	1.27	1.27
25	3.14	3.12	0.02	30.88	0.01	1.11	1.11	1.11
35	3.15	3.13	0.02	32.38	0.02	1.11	1.09	1.09
45	3.16	3.14	0.02	32.61	0.02	1.11	1.09	1.09
50	3.16	3.14	0.02	32.30	0.03	1.11	1.09	1.09
60	3.16	3.15	0.02	31.28	0.02	1.11	1.08	1.08
65	3.17	3.15	0.02	30.68	0.02	1.11	1.08	1.08
75	3.17	3.15	0.01	29.51	0.03	1.11	1.08	1.08
85	3.17	3.16	0.01	28.43	0.03	1.11	1.08	1.08
90	3.17	3.16	0.01	27.93	0.03	1.11	1.08	1.08
120	3.18	3.17	0.01	25.60	0.05	1.12	1.08	1.08
150	3.18	3.18	0.01	23.82	0.06	1.12	1.08	1.08
180	3.18	3.19	0.00	21.82	0.08	1.13	1.08	1.08
210	3.20	3.21	0.01	20.31	0.12	1.15	1.09	1.08
250	3.24	3.25	0.02	19.47	0.16	1.17	1.10	1.09

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

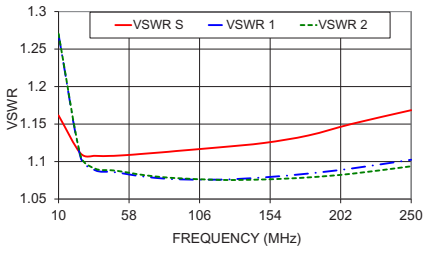
ZA2CS-251-20W+
TOTAL LOSS



ZA2CS-251-20W+
ISOLATION



ZA2CS-251-20W+
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