

DC Pass

High Power Combiner

ZB3CS-920-15W

3 Way-0° 50Ω 825 to 920 MHz

Maximum Ratings

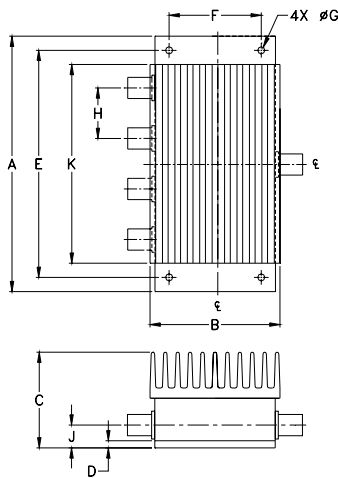
Operating Temperature	-55°C to 90°C
Storage Temperature	-55°C to 100°C
DC Current	600 A (200mA for each port)

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2
PORT 3	3

Outline Drawing



Outline Dimensions (inch/mm)

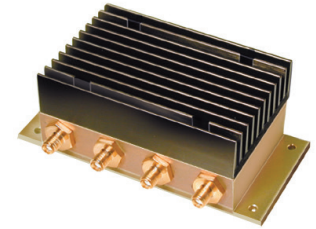
A	B	C	D	E	F	
4.50	2.25	1.69	.125	4.000	1.625	
114.30	57.15	42.93	3.18	101.60	41.28	
G	H	J	K			wt
.144	.890	.44	3.50			grams
3.66	22.61	11.18	88.90			500

Features

- high power, up to 15W input power
- low insertion loss, 0.2 dB typ.
- high isolation, 27 dB typ.

Applications

- cellular
- UHF



CASE STYLE: AW256

Connectors Model
SMA ZB3CS-920-15W-S

High Power Combiner Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 4.8 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		POWER INPUT ¹ (W)	
f_L - f_U	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	as combiner ² Max.	as splitter Max.
825-920	27	17	0.2	0.8	1.7	6.0	0.11	0.5	15	15

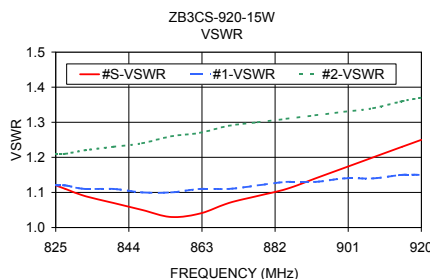
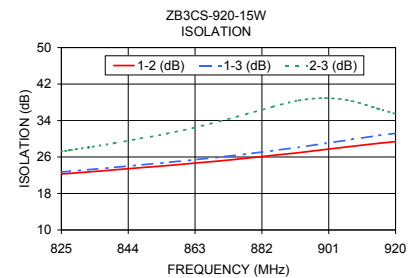
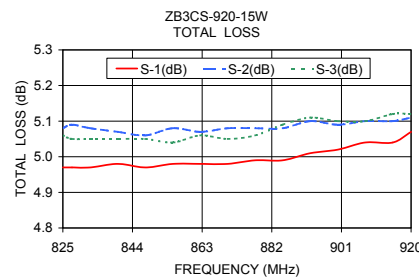
1. Over -55°C to +55°C. Derate linearly to 20% of rating at 90°C

2. As a combiner of non-coherent signals, max. power per port is power rating divided by number of ports.

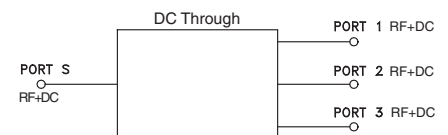
Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)			Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3
	S-1	S-2	S-3		1-2	1-3	2-3					
825.00	4.97	5.08	5.06	0.11	22.28	22.71	27.23	1.74	1.12	1.12	1.21	1.15
827.50	4.97	5.09	5.05	0.12	22.42	22.87	27.51	1.80	1.11	1.12	1.21	1.15
832.50	4.97	5.08	5.05	0.11	22.72	23.20	28.09	1.73	1.09	1.11	1.22	1.15
840.00	4.98	5.07	5.05	0.10	23.19	23.72	29.03	1.93	1.07	1.11	1.23	1.16
847.50	4.97	5.06	5.05	0.09	23.66	24.25	30.07	1.91	1.05	1.10	1.24	1.16
855.00	4.98	5.08	5.04	0.10	24.12	24.79	31.13	1.92	1.03	1.10	1.26	1.17
862.50	4.98	5.07	5.06	0.09	24.64	25.37	32.39	1.96	1.04	1.11	1.27	1.18
870.00	4.98	5.08	5.05	0.10	25.14	25.97	33.82	2.07	1.07	1.11	1.29	1.18
877.50	4.99	5.08	5.06	0.10	25.73	26.66	35.38	2.09	1.09	1.12	1.30	1.19
885.00	4.99	5.08	5.09	0.10	26.36	27.39	37.01	2.25	1.11	1.13	1.31	1.20
892.50	5.01	5.10	5.11	0.09	26.95	28.14	38.41	2.34	1.14	1.13	1.32	1.20
900.00	5.02	5.09	5.10	0.07	27.64	28.98	38.93	2.42	1.17	1.14	1.33	1.21
907.50	5.04	5.10	5.10	0.06	28.34	29.85	38.29	2.38	1.20	1.14	1.34	1.21
915.00	5.04	5.10	5.12	0.08	28.99	30.71	36.60	2.45	1.23	1.15	1.36	1.22
920.00	5.07	5.11	5.12	0.06	29.38	31.21	35.47	2.53	1.25	1.15	1.37	1.22

1. Total Loss = Insertion Loss + 4.8dB splitter loss.



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



www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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ZB3CS-920-15W
ED-4679
HY/TD/CP/AM
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3 Way-0° Power Splitter/Combiner

ZB3CS-920-15W

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-3		1-2	1-3	2-3			S	1	2	3
825.0	4.97	5.08	5.06	0.11	22.28	22.71	27.23	1.74	825.0	1.12	1.12	1.21	1.15
826.0	4.97	5.09	5.06	0.11	22.33	22.76	27.31	1.77	826.0	1.12	1.12	1.21	1.15
827.5	4.97	5.09	5.05	0.12	22.42	22.87	27.51	1.80	827.5	1.11	1.12	1.21	1.15
830.0	4.98	5.08	5.04	0.10	22.57	23.03	27.81	1.79	830.0	1.10	1.11	1.22	1.15
832.5	4.97	5.08	5.05	0.11	22.72	23.20	28.09	1.73	832.5	1.09	1.11	1.22	1.15
835.0	4.97	5.08	5.04	0.11	22.87	23.35	28.38	1.78	835.0	1.09	1.11	1.22	1.15
837.5	4.96	5.07	5.05	0.11	23.04	23.54	28.68	1.80	837.5	1.08	1.11	1.23	1.15
840.0	4.98	5.07	5.05	0.10	23.19	23.72	29.03	1.93	840.0	1.07	1.11	1.23	1.16
842.5	4.96	5.07	5.05	0.11	23.33	23.89	29.38	1.92	842.5	1.06	1.10	1.23	1.16
845.0	4.96	5.08	5.06	0.12	23.52	24.07	29.70	1.85	845.0	1.05	1.10	1.24	1.16
847.5	4.97	5.06	5.05	0.09	23.66	24.25	30.07	1.91	847.5	1.05	1.10	1.24	1.16
850.0	4.97	5.07	5.05	0.10	23.80	24.42	30.41	1.95	850.0	1.04	1.10	1.25	1.16
852.5	4.97	5.08	5.05	0.10	23.98	24.60	30.76	1.95	852.5	1.03	1.10	1.25	1.17
855.0	4.98	5.08	5.04	0.10	24.12	24.79	31.13	1.92	855.0	1.03	1.10	1.26	1.17
857.5	4.97	5.07	5.05	0.09	24.29	24.97	31.58	1.98	857.5	1.03	1.11	1.26	1.17
860.0	4.97	5.07	5.04	0.11	24.45	25.18	32.03	2.02	860.0	1.04	1.11	1.27	1.17
862.5	4.98	5.07	5.06	0.09	24.64	25.37	32.39	1.96	862.5	1.04	1.11	1.27	1.18
865.0	4.99	5.08	5.05	0.09	24.78	25.56	32.84	2.01	865.0	1.05	1.11	1.28	1.18
867.5	4.98	5.08	5.05	0.09	24.97	25.77	33.29	2.12	867.5	1.06	1.11	1.28	1.18
870.0	4.98	5.08	5.05	0.10	25.14	25.97	33.82	2.07	870.0	1.07	1.11	1.29	1.18
872.5	4.99	5.07	5.06	0.08	25.36	26.17	34.36	2.00	872.5	1.08	1.12	1.29	1.19
875.0	4.99	5.08	5.07	0.09	25.55	26.41	34.86	2.02	875.0	1.08	1.12	1.30	1.19
877.5	4.99	5.08	5.06	0.10	25.73	26.66	35.38	2.09	877.5	1.09	1.12	1.30	1.19
880.0	4.99	5.09	5.08	0.10	25.95	26.87	35.86	2.11	880.0	1.10	1.12	1.31	1.19
882.5	4.99	5.09	5.09	0.09	26.15	27.14	36.45	2.08	882.5	1.10	1.12	1.31	1.19
885.0	4.99	5.08	5.09	0.10	26.36	27.39	37.01	2.25	885.0	1.11	1.13	1.31	1.20
887.5	5.00	5.09	5.09	0.09	26.54	27.58	37.52	2.18	887.5	1.12	1.13	1.32	1.20
890.0	4.99	5.10	5.10	0.11	26.77	27.90	37.93	2.17	890.0	1.13	1.13	1.32	1.20
892.5	5.01	5.10	5.11	0.09	26.95	28.14	38.41	2.34	892.5	1.14	1.13	1.32	1.20
895.0	5.02	5.09	5.09	0.07	27.16	28.41	38.73	2.22	895.0	1.15	1.13	1.33	1.20
897.5	5.02	5.10	5.10	0.09	27.39	28.72	38.87	2.26	897.5	1.16	1.14	1.33	1.20
900.0	5.02	5.09	5.10	0.07	27.64	28.98	38.93	2.42	900.0	1.17	1.14	1.33	1.21
902.5	5.03	5.09	5.11	0.07	27.84	29.23	38.77	2.24	902.5	1.18	1.14	1.34	1.21
905.0	5.03	5.09	5.10	0.07	28.05	29.55	38.47	2.35	905.0	1.19	1.14	1.34	1.21
907.5	5.04	5.10	5.10	0.06	28.34	29.85	38.29	2.38	907.5	1.20	1.14	1.34	1.21
910.0	5.02	5.10	5.11	0.09	28.51	30.16	37.69	2.27	910.0	1.21	1.15	1.35	1.21
912.5	5.04	5.10	5.11	0.07	28.77	30.45	37.14	2.49	912.5	1.22	1.15	1.35	1.21
915.0	5.04	5.10	5.12	0.08	28.99	30.71	36.60	2.45	915.0	1.23	1.15	1.36	1.22
917.5	5.05	5.12	5.12	0.07	29.18	31.03	36.11	2.45	917.5	1.24	1.15	1.36	1.22
919.0	5.06	5.11	5.11	0.06	29.32	31.14	35.75	2.55	919.0	1.25	1.15	1.36	1.22
920.0	5.07	5.11	5.12	0.06	29.38	31.21	35.47	2.53	920.0	1.25	1.15	1.37	1.22

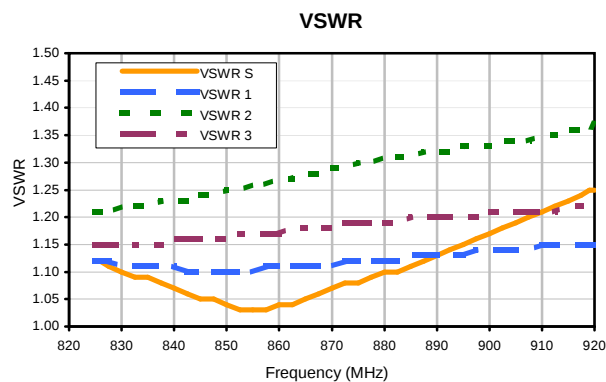
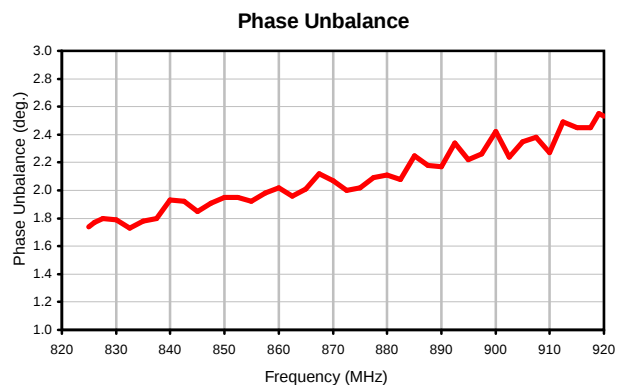
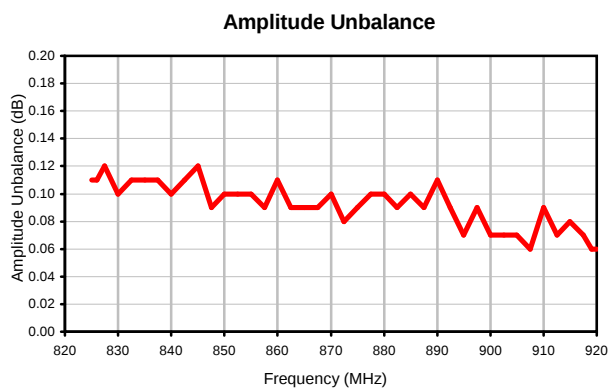
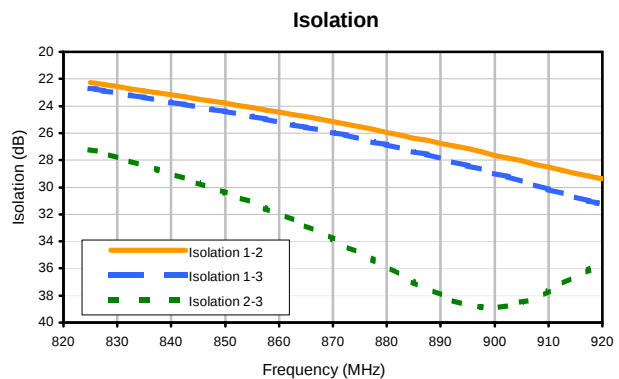
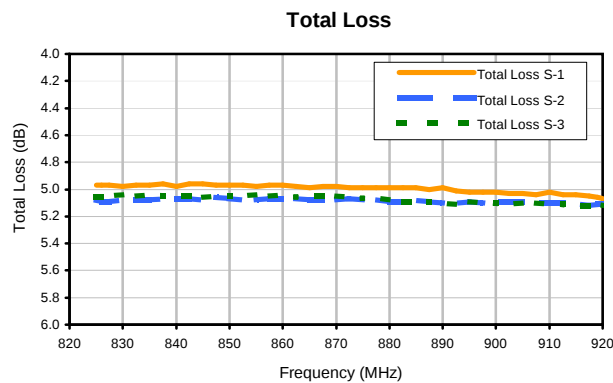
¹ Total Loss = Insertion Loss+ 4.8dB Splitter Loss

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3 Way-0° Power Splitter/Combiner

ZB3CS-920-15W

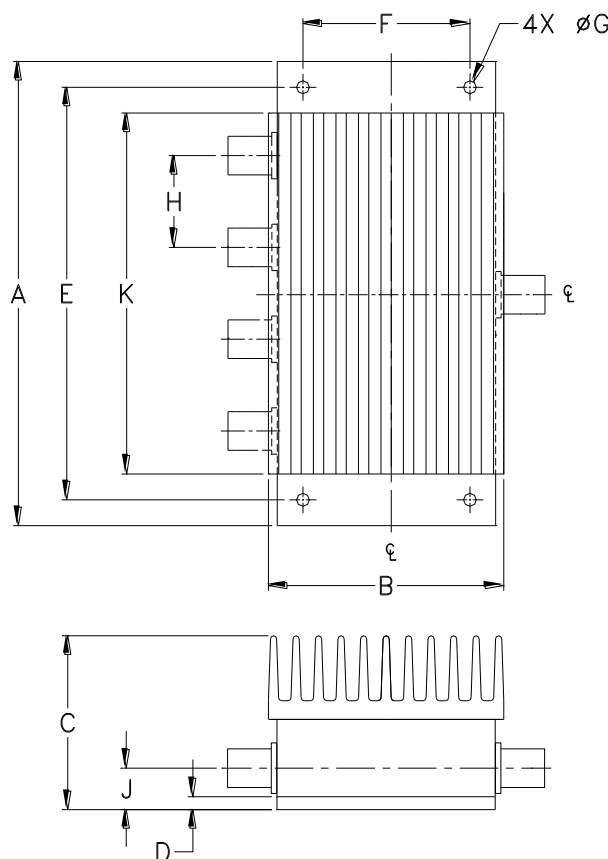
Typical Performance Curves



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Outline Dimensions

AW256



CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
AW256	4.50 (114.30)	2.25 (57.15)	1.69 (42.93)	.125 (3.18)	4.000 (101.60)	1.625 (41.28)	.144 (3.66)	.890 (22.61)	.44 (11.18)	3.50 (88.90)	500

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

Notes:

- Case material: Aluminum alloy.
- Case Finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Heat sink finish: Black anodize.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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RF/IF MICROWAVE COMPONENTS



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	-55° to 90° C Ambient Environment	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