Coaxial

High Power Combiner

ZA2CS-500-15W

2 Way-0° 50Ω 200 to 500 MHz

Maximum Ratings

Operating Temperature	-55°C to 90°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 15W input power
- wideband, 200 to 500 MHz
- high isolation, 31 dB typ.

Applications

- communication systems
- VHF transmitters

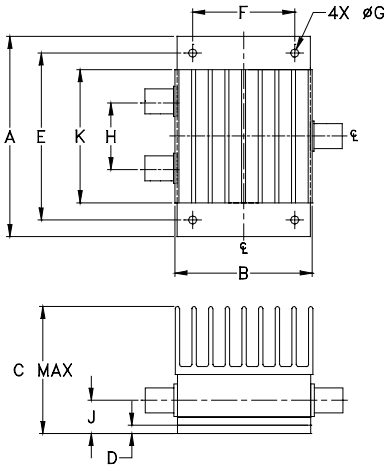
Generic photo used for illustration purposes only

BNC version shown

CASE STYLE: AW254

Connectors	Model
BNC	ZA2CS-500-15W
N-TYPE	ZA2CS-500-15W-N
SMA	ZA2CS-500-15W-S

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

High Power Combiner Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 3.0 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		POWER INPUT[1] (W)	
									as combiner[2]	as splitter
f_L-f_U	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.
200-500	31	20	0.3	1.0	0.3	3.0	0.10	0.4	15	15

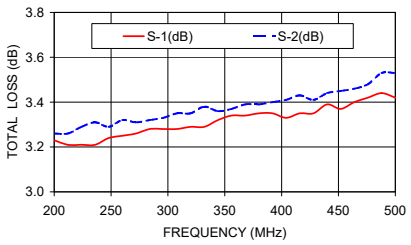
1. Over -55°C to +55°C. Derate linearly to 20% of rating at 90°C
2. As a combiner of non-coherent signals, max. power per port is power rating divided by number of ports.

Typical Performance Data

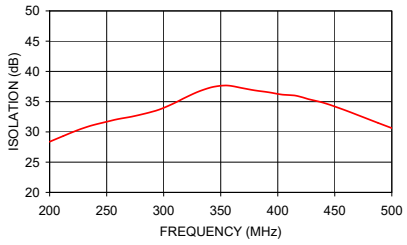
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
200.00	3.23	3.26	0.03	28.38	0.31	1.15	1.14	1.13
212.00	3.21	3.26	0.06	29.33	0.50	1.11	1.13	1.11
224.00	3.21	3.29	0.09	30.25	0.19	1.04	1.12	1.10
248.00	3.24	3.29	0.05	31.59	0.27	1.10	1.09	1.08
272.00	3.26	3.31	0.05	32.52	0.20	1.10	1.07	1.06
296.00	3.28	3.33	0.05	33.68	0.29	1.10	1.06	1.04
320.00	3.29	3.35	0.06	35.77	0.36	1.08	1.06	1.04
344.00	3.32	3.36	0.04	37.47	0.44	1.14	1.06	1.04
368.00	3.34	3.39	0.06	37.28	0.29	1.12	1.06	1.05
392.00	3.35	3.40	0.05	36.55	0.41	1.12	1.07	1.06
416.00	3.35	3.43	0.08	35.98	0.09	1.03	1.09	1.07
440.00	3.39	3.44	0.05	34.82	0.24	1.04	1.10	1.09
464.00	3.40	3.46	0.05	33.24	0.33	1.11	1.12	1.10
488.00	3.44	3.53	0.09	31.48	0.35	1.12	1.14	1.12
500.00	3.42	3.53	0.10	30.63	0.30	1.12	1.14	1.13

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

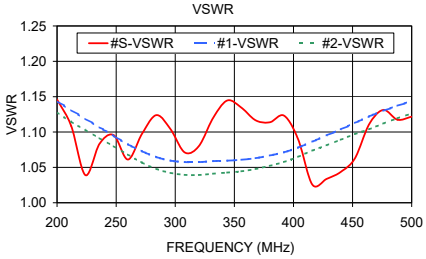
ZA2CS-500-15W
TOTAL LOSS



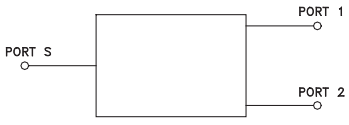
ZA2CS-500-15W
ISOLATION



ZA2CS-500-15W
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° Power Splitter/Combiner ZA2CS-500-15W

Typical Performance Data

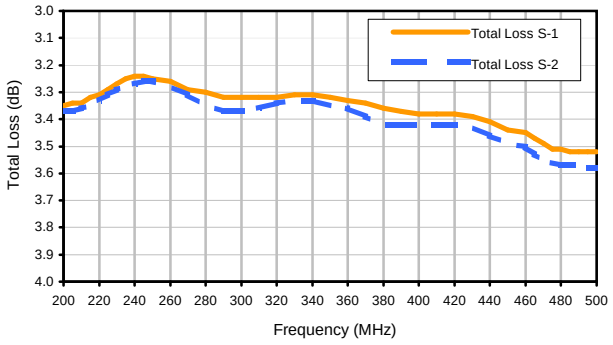
FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	TOTAL LOSS[1] (dB) S-2	AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1) S	VSWR (:1) 1	VSWR (:1) 2
200.0	3.35	3.37	0.02	26.56	0.23	200.0	1.30	1.31	1.29
205.0	3.34	3.37	0.03	26.61	0.22	205.0	1.30	1.30	1.28
210.0	3.34	3.36	0.03	26.62	0.21	210.0	1.30	1.28	1.26
215.0	3.32	3.35	0.03	26.60	0.22	215.0	1.29	1.26	1.24
220.0	3.31	3.33	0.02	26.57	0.26	220.0	1.28	1.24	1.22
225.0	3.29	3.31	0.02	26.52	0.27	225.0	1.26	1.22	1.20
230.0	3.27	3.29	0.02	26.45	0.27	230.0	1.25	1.20	1.19
235.0	3.25	3.28	0.02	26.35	0.28	235.0	1.23	1.20	1.18
240.0	3.24	3.27	0.02	26.27	0.30	240.0	1.22	1.19	1.17
245.0	3.24	3.26	0.02	26.17	0.27	245.0	1.22	1.19	1.17
250.0	3.25	3.26	0.02	26.06	0.27	250.0	1.22	1.20	1.18
260.0	3.26	3.28	0.01	25.86	0.30	260.0	1.23	1.21	1.18
270.0	3.29	3.31	0.02	25.71	0.30	270.0	1.26	1.21	1.19
280.0	3.30	3.35	0.05	25.58	0.29	280.0	1.28	1.20	1.18
290.0	3.32	3.37	0.06	25.46	0.30	290.0	1.29	1.18	1.16
300.0	3.32	3.37	0.05	25.32	0.33	300.0	1.28	1.16	1.14
310.0	3.32	3.36	0.04	25.18	0.34	310.0	1.27	1.14	1.12
320.0	3.32	3.34	0.02	25.08	0.35	320.0	1.25	1.12	1.11
330.0	3.31	3.33	0.02	25.03	0.37	330.0	1.23	1.11	1.09
340.0	3.31	3.33	0.02	24.98	0.40	340.0	1.22	1.09	1.08
350.0	3.32	3.35	0.03	24.96	0.41	350.0	1.22	1.08	1.07
360.0	3.33	3.36	0.03	25.01	0.40	360.0	1.22	1.08	1.07
370.0	3.34	3.39	0.04	25.06	0.43	370.0	1.23	1.07	1.06
380.0	3.36	3.42	0.06	25.14	0.44	380.0	1.24	1.07	1.06
390.0	3.37	3.42	0.06	25.28	0.41	390.0	1.25	1.06	1.07
400.0	3.38	3.42	0.05	25.42	0.43	400.0	1.24	1.05	1.07
410.0	3.38	3.42	0.04	25.58	0.46	410.0	1.22	1.04	1.07
420.0	3.38	3.42	0.04	25.81	0.48	420.0	1.20	1.04	1.07
430.0	3.39	3.43	0.03	26.09	0.52	430.0	1.20	1.04	1.07
440.0	3.41	3.46	0.04	26.42	0.51	440.0	1.21	1.04	1.07
450.0	3.44	3.49	0.05	26.78	0.54	450.0	1.23	1.05	1.08
460.0	3.45	3.50	0.06	27.13	0.55	460.0	1.24	1.06	1.09
465.0	3.47	3.53	0.06	27.33	0.55	465.0	1.25	1.07	1.10
470.0	3.49	3.55	0.06	27.57	0.58	470.0	1.25	1.08	1.11
475.0	3.51	3.56	0.06	27.76	0.55	475.0	1.25	1.09	1.12
480.0	3.51	3.57	0.06	28.00	0.57	480.0	1.25	1.10	1.13
485.0	3.52	3.57	0.06	28.24	0.58	485.0	1.25	1.12	1.14
490.0	3.52	3.57	0.06	28.47	0.58	490.0	1.26	1.13	1.15
495.0	3.52	3.58	0.06	28.73	0.60	495.0	1.27	1.14	1.16
500.0	3.52	3.58	0.06	28.95	0.62	500.0	1.28	1.15	1.17

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

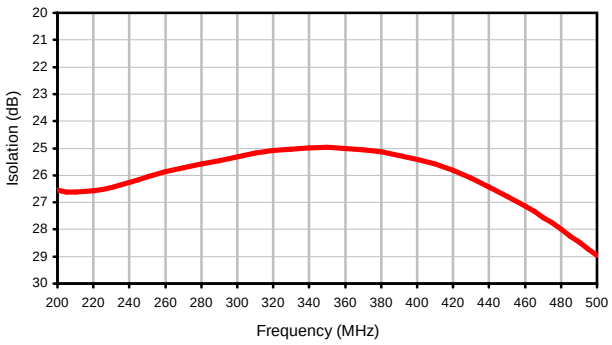
2 Way-0° Power Splitter/Combiner ZA2CS-500-15W

Typical Performance Curves

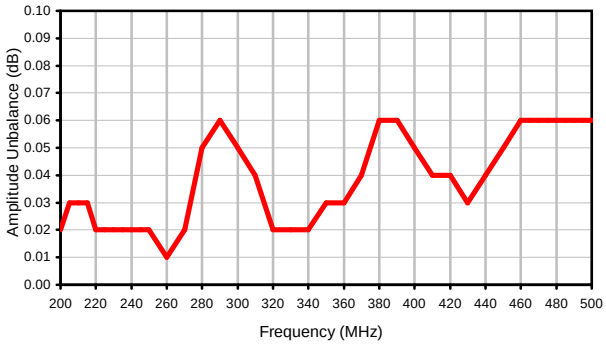
Total Loss



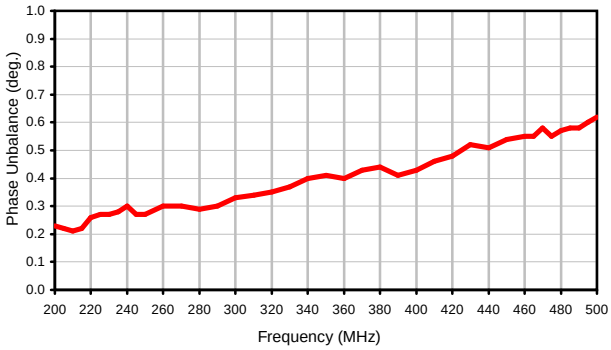
Isolation



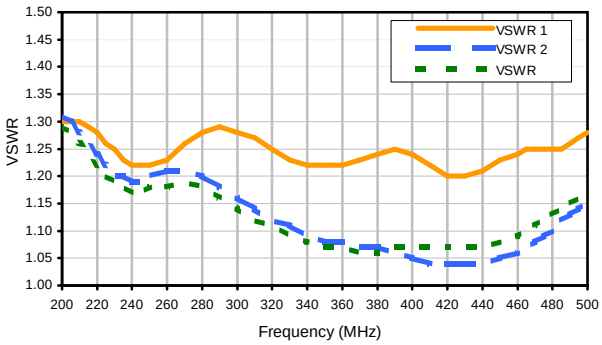
Amplitude Unbalance



Phase Unbalance



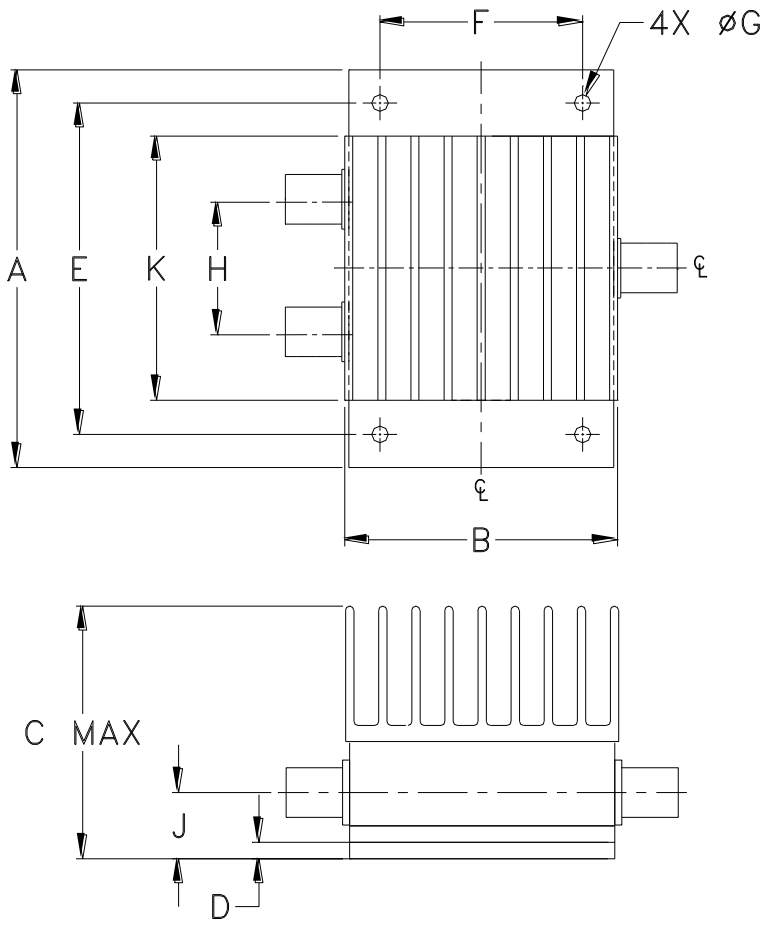
VSWR



Case Style AW

Outline Dimensions

AW254



CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
AW254	3.00 (76.20)	2.06 (52.32)	1.92 (48.77)	.100 (2.54)	2.500 (63.50)	1.525 (38.74)	.125 (3.18)	1.000 (25.40)	.50 (12.70)	2.00 (50.80)	330

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

Notes:

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

Mini-Circuits

Environmental Specifications **ENV28T9**

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