

High Power Combiner

ZB6CS-150-12W

6 Way-0° 50Ω 50 to 150 MHz

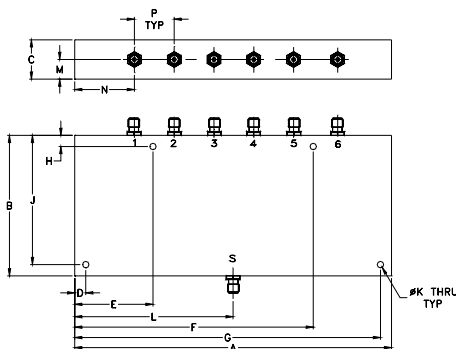
Maximum Ratings

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
PORT 3	3
PORT 4	4
PORT 5	5
PORT 6	6

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	
7.06	3.13	.88	.250	1.750	5.310	6.810	.250	
179.32	79.50	22.35	6.35	44.45	134.87	172.97	6.35	
J	K	L	M	N	P		wt	
2.875	.144	3.53	.44	1.31	.89		grams	
73.03	3.66	89.66	11.18	33.27	22.61		800	

Features

- input power, up to 12W input power
- low insertion loss, 0.5 dB typ.
- high isolation, 32 dB typ.

Applications

- VHF
- instrumentation



BNC version shown
CASE STYLE: Z259

Connectors	Model
BNC	ZB6CS-150-12W
N-TYPE	ZB6CS-150-12W-N
SMA	ZB6CS-150-12W-S

High Power Combiner Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 7.8 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.
50-150	32	20	0.5	1.2	3.0	9.0	0.15	0.5	12	10

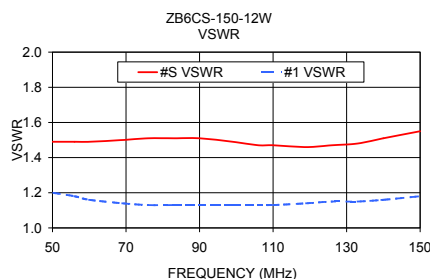
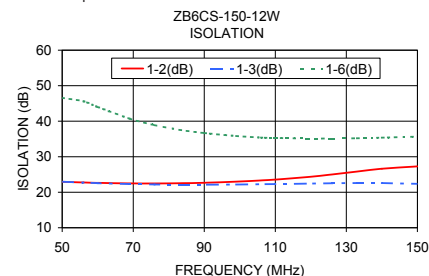
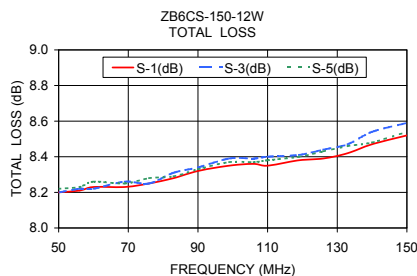
1. Over -55°C to +55°C. Derate linearly to 20% of rating at 90°C

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)			Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbalance (deg.)	VSWR S	VSWR 1
	S-1	S-3	S-5		1-2	1-3	1-6			
50.00	8.20	8.20	8.22	0.03	22.93	22.96	46.56	1.45	1.49	1.20
56.00	8.21	8.22	8.23	0.04	22.74	22.72	45.60	1.47	1.49	1.18
60.00	8.23	8.22	8.26	0.06	22.64	22.56	44.01	1.62	1.49	1.16
69.00	8.23	8.26	8.25	0.04	22.49	22.30	40.71	1.84	1.50	1.14
76.00	8.25	8.25	8.28	0.05	22.47	22.18	38.91	1.99	1.51	1.13
83.00	8.28	8.31	8.29	0.05	22.53	22.13	37.59	2.26	1.51	1.13
90.00	8.32	8.34	8.33	0.05	22.67	22.13	36.68	2.45	1.51	1.13
99.00	8.35	8.39	8.37	0.07	22.98	22.17	35.84	2.68	1.49	1.13
106.00	8.36	8.39	8.37	0.07	23.32	22.25	35.39	2.90	1.47	1.13
110.00	8.35	8.40	8.38	0.07	23.56	22.30	35.27	2.97	1.47	1.13
119.00	8.38	8.41	8.40	0.08	24.28	22.43	35.13	3.27	1.46	1.14
126.00	8.39	8.44	8.43	0.08	25.01	22.54	35.12	3.59	1.47	1.15
133.00	8.42	8.47	8.46	0.09	25.82	22.60	35.20	3.94	1.48	1.15
140.00	8.47	8.54	8.48	0.11	26.61	22.60	35.36	4.37	1.51	1.16
150.00	8.52	8.59	8.54	0.12	27.29	22.35	35.67	4.63	1.55	1.18

1. Total Loss = Insertion Loss + 7.8dB 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.
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6 Way-0° Power Splitter/Combiner

ZB6CS-150-12W

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	S-4	S-5	S-6		1-2	1-3	1-6			S	1
50.0	8.20	8.19	8.20	8.22	8.22	8.20	0.03	22.93	22.96	46.56	1.45	50.0	1.49	1.20
53.0	8.22	8.20	8.22	8.23	8.23	8.21	0.03	22.84	22.84	46.46	1.52	53.0	1.49	1.19
56.0	8.21	8.19	8.22	8.22	8.23	8.20	0.04	22.74	22.72	45.60	1.47	56.0	1.49	1.18
59.0	8.22	8.20	8.22	8.23	8.24	8.22	0.03	22.66	22.60	44.25	1.66	59.0	1.49	1.17
60.0	8.23	8.22	8.22	8.24	8.26	8.20	0.06	22.64	22.56	44.01	1.62	60.0	1.49	1.16
63.0	8.24	8.22	8.25	8.24	8.26	8.22	0.04	22.58	22.48	42.76	1.75	63.0	1.50	1.16
66.0	8.24	8.23	8.25	8.23	8.25	8.21	0.04	22.53	22.40	41.71	1.76	66.0	1.50	1.15
69.0	8.23	8.24	8.26	8.24	8.25	8.22	0.04	22.49	22.30	40.71	1.84	69.0	1.50	1.14
70.0	8.23	8.23	8.24	8.23	8.25	8.21	0.04	22.47	22.29	40.38	1.74	70.0	1.51	1.14
73.0	8.25	8.24	8.26	8.26	8.26	8.24	0.02	22.47	22.24	39.54	1.98	73.0	1.51	1.14
76.0	8.25	8.25	8.25	8.27	8.28	8.23	0.05	22.47	22.18	38.91	1.99	76.0	1.51	1.13
79.0	8.26	8.27	8.28	8.28	8.27	8.25	0.04	22.49	22.16	38.26	2.01	79.0	1.51	1.13
80.0	8.28	8.28	8.29	8.28	8.28	8.25	0.04	22.50	22.15	38.09	2.12	80.0	1.51	1.13
83.0	8.28	8.29	8.31	8.29	8.29	8.26	0.05	22.53	22.13	37.59	2.26	83.0	1.51	1.13
86.0	8.29	8.30	8.33	8.31	8.32	8.27	0.05	22.59	22.11	37.18	2.24	86.0	1.51	1.13
89.0	8.31	8.32	8.33	8.34	8.33	8.28	0.06	22.64	22.12	36.75	2.37	89.0	1.51	1.13
90.0	8.32	8.32	8.34	8.34	8.33	8.30	0.05	22.67	22.13	36.68	2.45	90.0	1.51	1.13
93.0	8.32	8.34	8.35	8.34	8.34	8.30	0.06	22.76	22.12	36.34	2.46	93.0	1.50	1.13
96.0	8.34	8.34	8.39	8.35	8.36	8.30	0.09	22.86	22.13	36.04	2.50	96.0	1.49	1.13
99.0	8.35	8.35	8.39	8.37	8.37	8.31	0.07	22.98	22.17	35.84	2.68	99.0	1.49	1.13
100.0	8.34	8.35	8.37	8.38	8.36	8.31	0.07	23.00	22.17	35.77	2.75	100.0	1.49	1.13
103.0	8.37	8.38	8.39	8.40	8.38	8.33	0.07	23.17	22.20	35.60	2.88	103.0	1.48	1.13
106.0	8.36	8.38	8.39	8.39	8.37	8.32	0.07	23.32	22.25	35.39	2.90	106.0	1.47	1.13
109.0	8.36	8.37	8.39	8.40	8.37	8.32	0.08	23.51	22.28	35.29	2.94	109.0	1.47	1.13
110.0	8.35	8.38	8.40	8.38	8.38	8.33	0.07	23.56	22.30	35.27	2.97	110.0	1.47	1.13
113.0	8.37	8.38	8.41	8.39	8.39	8.34	0.07	23.79	22.36	35.18	3.21	113.0	1.46	1.14
116.0	8.36	8.39	8.41	8.40	8.40	8.34	0.08	24.02	22.38	35.14	3.32	116.0	1.46	1.14
119.0	8.38	8.38	8.41	8.41	8.40	8.34	0.08	24.28	22.43	35.13	3.27	119.0	1.46	1.14
120.0	8.38	8.40	8.43	8.41	8.41	8.36	0.07	24.39	22.46	35.10	3.46	120.0	1.46	1.14
123.0	8.38	8.40	8.43	8.42	8.42	8.37	0.07	24.68	22.51	35.14	3.57	123.0	1.46	1.14
126.0	8.39	8.42	8.44	8.43	8.43	8.37	0.08	25.01	22.54	35.12	3.59	126.0	1.47	1.15
129.0	8.40	8.44	8.47	8.45	8.44	8.39	0.08	25.35	22.58	35.17	3.76	129.0	1.47	1.15
130.0	8.42	8.45	8.47	8.47	8.44	8.38	0.09	25.48	22.59	35.22	3.84	130.0	1.48	1.15
133.0	8.42	8.46	8.47	8.47	8.46	8.38	0.09	25.82	22.60	35.20	3.94	133.0	1.48	1.15
136.0	8.45	8.49	8.50	8.50	8.48	8.42	0.08	26.19	22.62	35.28	4.17	136.0	1.49	1.16
139.0	8.46	8.50	8.51	8.49	8.49	8.41	0.10	26.51	22.61	35.32	4.18	139.0	1.51	1.16
140.0	8.47	8.50	8.54	8.52	8.48	8.43	0.11	26.61	22.60	35.36	4.37	140.0	1.51	1.16
144.0	8.50	8.52	8.56	8.54	8.51	8.46	0.10	27.00	22.53	35.50	4.39	144.0	1.53	1.17
146.0	8.50	8.54	8.57	8.56	8.53	8.47	0.10	27.15	22.49	35.56	4.55	146.0	1.53	1.17
150.0	8.52	8.55	8.59	8.58	8.54	8.48	0.12	27.29	22.35	35.67	4.63	150.0	1.55	1.18

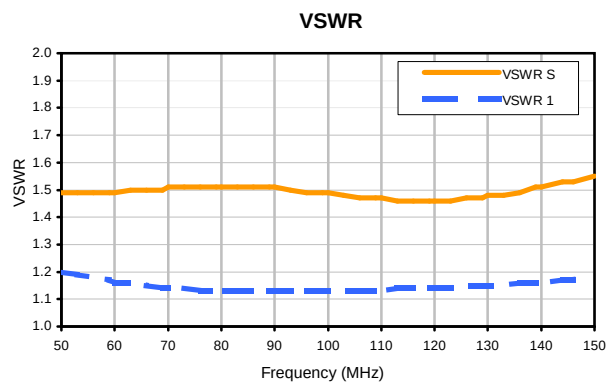
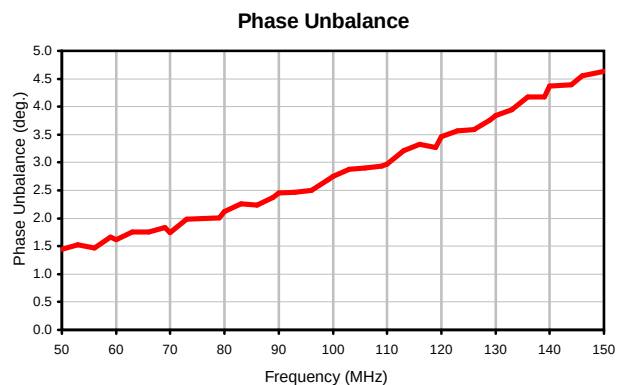
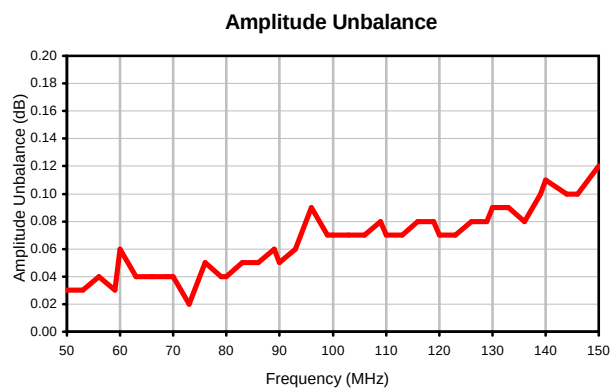
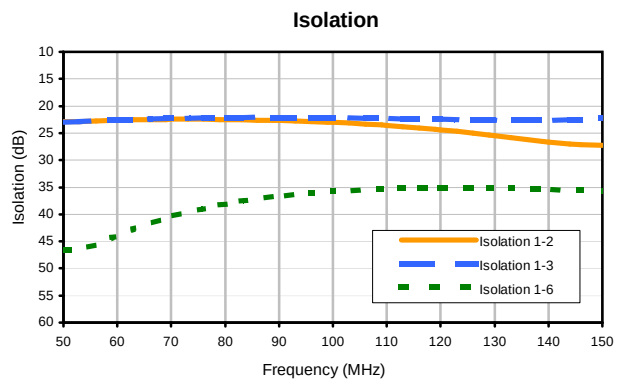
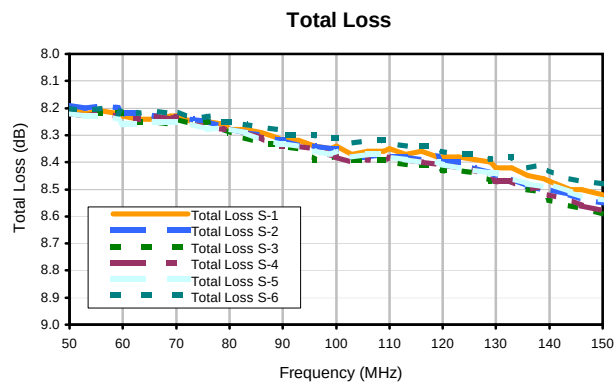
¹ Total Loss = Insertion Loss+ 7.8dB Splitter Loss

REV. X2
ZB6CS-150-12W
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Page 1 of 1

6 Way-0° Power Splitter/Combiner

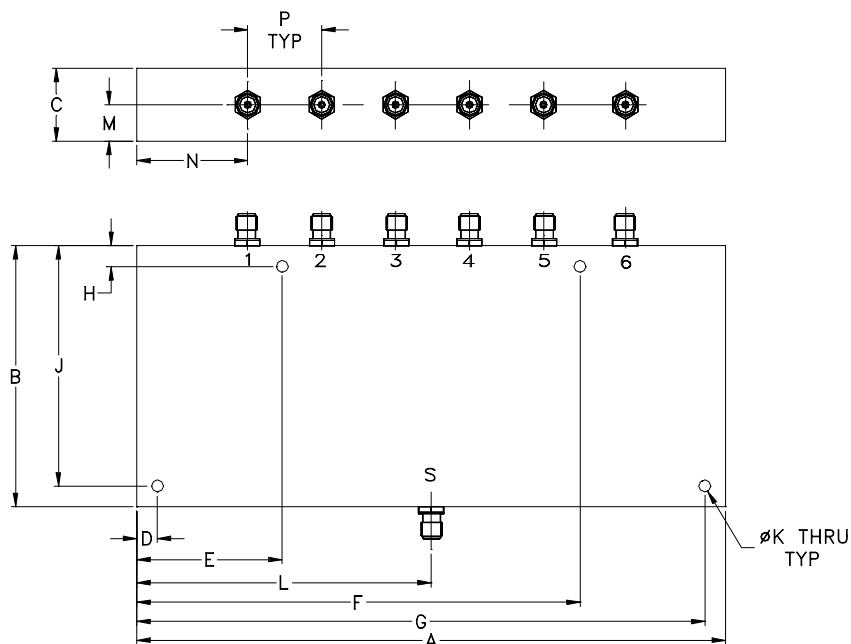
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Typical Performance Curves



REV. X2
ZB6CS-150-12W
100627
Page 1 of 1

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
Z259	7.06 (179.32)	3.13 (79.50)	.88 (22.35)	.250 (6.35)	1.750 (44.45)	5.310 (134.87)	6.810 (172.97)	.250 (6.35)	2.875 (73.03)	.144 (3.66)	3.53 (89.66)	.44 (11.18)	1.31 (33.27)

CASE#	P	WT.GRAMS
Z259	.89 (22.61)	800

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

Notes:

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



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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