

Coaxial Power Splitter/Combiner

8 Way-0° 50Ω 0.5 to 175 MHz

ZFSC-8-1+ ZFSC-8-1



Generic photo used for illustration purposes only

CASE STYLE: R29

Connectors	Model
BNC	ZFSC-8-1+
SMA	ZFSC-8-1-S(+)

+RoHS Compliant

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

Maximum Ratings

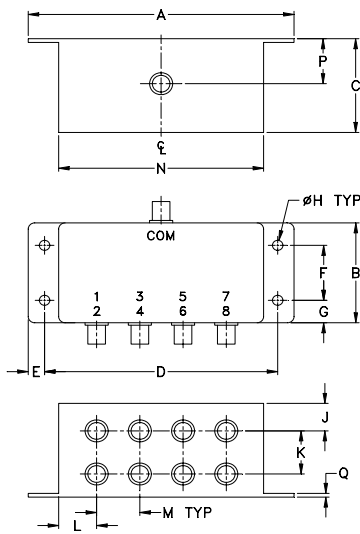
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.62W max.

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

Coaxial Connections

SUM PORT	S(COM)
PORT 1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
4.06	1.60	1.57	3.56	.24	.88	.36	.160
103.12	40.64	39.88	90.42	6.10	22.35	9.14	4.06
J	K	L	M	N	P	Q	wt.
.43	.69	.58	.66	3.13	.79	.13	grams
10.92	17.53	14.73	16.76	79.50	20.07	3.30	200

Features

- low insertion loss, 0.8 dB typ.
- high isolation, 30 dB typ.
- excellent amplitude unbalance, 0.2 dB typ.
- rugged shielded case

Applications

- HF/VHF
- radio communication
- instrumentation

Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)			INSERTION LOSS (dB) ABOVE 9.0 dB			PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)								
	L		M	U		L	M	U	L	M	U	L	M	U				
	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.				
f_L - f_U	30	25	30	20	25	18	0.8	1.2	0.8	1.2	1.0	1.6	1.0	2.5	5.0	0.2	0.2	0.3
0.5-175																		

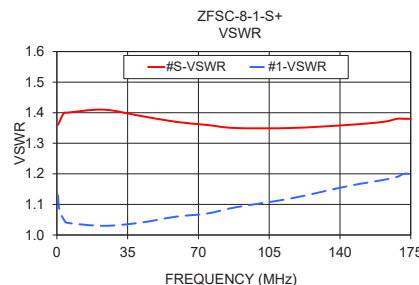
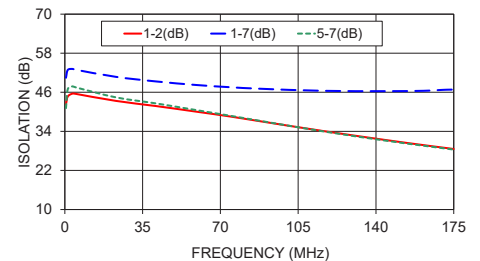
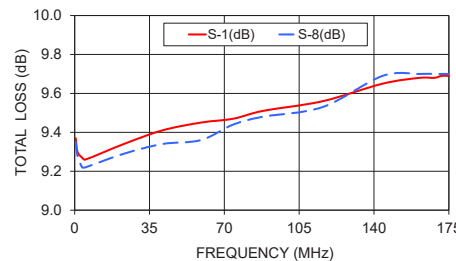
L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]

Typical Performance Data

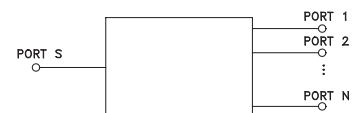
Freq. (MHz)	Total Loss ¹ (dB)						Amplitude Unbalance (dB)	Isolation (dB)				VSWR S	VSWR 1	VSWR 8
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-7	3-4	5-7			
0.50	9.37	9.37	9.37	9.38	9.37	9.35	0.05	42.28	50.46	40.88	41.14	1.36	1.13	1.15
1.30	9.30	9.29	9.31	9.31	9.29	9.28	0.03	44.69	52.85	45.42	46.94	1.37	1.08	1.09
3.50	9.27	9.25	9.26	9.26	9.25	9.22	0.05	45.61	53.16	46.49	47.81	1.40	1.05	1.05
5.00	9.26	9.25	9.27	9.25	9.24	9.22	0.05	45.50	52.91	46.27	47.48	1.40	1.04	1.04
23.00	9.34	9.32	9.35	9.32	9.34	9.29	0.05	43.35	50.73	43.83	44.43	1.41	1.03	1.03
41.00	9.41	9.33	9.41	9.35	9.39	9.34	0.07	41.77	49.33	42.26	42.58	1.39	1.04	1.04
59.00	9.45	9.34	9.45	9.35	9.42	9.36	0.11	40.06	48.24	40.68	40.54	1.37	1.06	1.06
74.20	9.47	9.38	9.48	9.37	9.48	9.44	0.11	38.58	47.56	39.14	38.81	1.36	1.07	1.08
88.00	9.51	9.41	9.50	9.39	9.52	9.48	0.13	37.09	47.08	37.71	37.21	1.35	1.09	1.09
116.00	9.56	9.45	9.58	9.42	9.57	9.53	0.17	34.12	46.45	34.64	34.02	1.35	1.12	1.13
144.00	9.65	9.57	9.67	9.55	9.71	9.69	0.16	31.37	46.34	31.78	31.18	1.36	1.16	1.17
161.40	9.68	9.59	9.69	9.56	9.73	9.70	0.17	29.77	46.45	30.13	29.59	1.37	1.18	1.19
168.20	9.68	9.59	9.70	9.56	9.73	9.70	0.17	29.17	46.67	29.49	29.00	1.38	1.19	1.20
171.60	9.69	9.60	9.71	9.57	9.74	9.70	0.17	28.88	46.78	29.18	28.70	1.38	1.20	1.20
175.00	9.69	9.61	9.72	9.58	9.73	9.70	0.16	28.57	46.82	28.88	28.40	1.38	1.20	1.21

ZFSC-8-1-S+ 1. Total Loss = Insertion Loss + 9dB splitter loss.

ZFSC-8-1-S+ ISOLATION



electrical schematic



Notes

- 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.
- 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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8 Way-0° Power Splitter/Combiner

ZFSC-8-1+

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-6	S-8		1-3	1-8	2-4	6-8			S	1	8
0.5	9.37	9.37	9.37	9.38	9.37	9.35	0.05	42.28	50.46	40.88	41.14	0.38	0.5	1.36	1.13	1.15
0.9	9.33	9.33	9.32	9.34	9.33	9.31	0.04	43.69	52.10	43.89	44.90	0.25	0.9	1.36	1.10	1.11
1.3	9.30	9.29	9.31	9.31	9.29	9.28	0.03	44.69	52.85	45.42	46.94	0.25	1.3	1.37	1.08	1.09
1.7	9.29	9.28	9.28	9.28	9.27	9.26	0.04	45.19	53.11	45.99	47.64	0.27	1.7	1.38	1.07	1.07
2.1	9.27	9.27	9.28	9.27	9.26	9.24	0.04	45.45	53.25	46.36	47.99	0.22	2.1	1.39	1.06	1.06
2.5	9.27	9.26	9.27	9.27	9.25	9.23	0.05	45.58	53.19	46.51	48.10	0.23	2.5	1.39	1.06	1.06
3.0	9.26	9.25	9.27	9.26	9.24	9.22	0.04	45.62	53.34	46.58	47.94	0.18	3.0	1.40	1.05	1.05
3.5	9.27	9.25	9.26	9.26	9.25	9.22	0.05	45.61	53.16	46.49	47.81	0.25	3.5	1.40	1.05	1.05
4.0	9.27	9.25	9.27	9.26	9.24	9.21	0.06	45.60	53.07	46.47	47.75	0.14	4.0	1.40	1.04	1.04
4.5	9.26	9.25	9.26	9.26	9.24	9.22	0.05	45.59	52.95	46.38	47.63	0.15	4.5	1.40	1.04	1.04
5.0	9.26	9.25	9.27	9.25	9.24	9.22	0.05	45.50	52.91	46.27	47.48	0.13	5.0	1.40	1.04	1.04
11.0	9.29	9.27	9.29	9.27	9.27	9.23	0.06	44.65	52.03	45.22	46.08	0.13	11.0	1.41	1.03	1.03
17.0	9.32	9.30	9.31	9.30	9.31	9.27	0.04	44.01	51.13	44.45	45.16	0.22	17.0	1.41	1.03	1.03
23.0	9.34	9.32	9.35	9.32	9.34	9.29	0.05	43.35	50.73	43.83	44.43	0.19	23.0	1.41	1.03	1.03
29.0	9.37	9.32	9.36	9.34	9.36	9.31	0.06	42.86	50.17	43.31	43.76	0.22	29.0	1.40	1.03	1.03
35.0	9.38	9.34	9.39	9.36	9.38	9.33	0.05	42.29	49.56	42.77	43.22	0.31	35.0	1.40	1.04	1.04
41.0	9.41	9.33	9.41	9.35	9.39	9.34	0.07	41.77	49.33	42.26	42.58	0.35	41.0	1.39	1.04	1.04
47.0	9.42	9.34	9.43	9.35	9.40	9.35	0.09	41.19	48.91	41.71	41.85	0.39	47.0	1.38	1.05	1.05
53.0	9.43	9.34	9.44	9.35	9.41	9.34	0.10	40.70	48.62	41.21	41.19	0.29	53.0	1.38	1.05	1.06
59.0	9.45	9.34	9.45	9.35	9.42	9.36	0.11	40.06	48.24	40.68	40.54	0.27	59.0	1.37	1.06	1.06
65.0	9.46	9.36	9.47	9.36	9.44	9.39	0.12	39.54	48.00	40.12	39.85	0.21	65.0	1.37	1.06	1.07
69.6	9.48	9.38	9.48	9.37	9.46	9.42	0.11	39.02	47.73	39.63	39.33	0.27	69.6	1.36	1.07	1.07
74.2	9.47	9.38	9.48	9.37	9.48	9.44	0.11	38.58	47.56	39.14	38.81	0.30	74.2	1.36	1.07	1.08
78.8	9.49	9.39	9.50	9.37	9.50	9.47	0.13	38.06	47.21	38.67	38.27	0.33	78.8	1.35	1.08	1.08
83.4	9.50	9.40	9.51	9.39	9.50	9.47	0.13	37.59	47.22	38.18	37.75	0.36	83.4	1.35	1.08	1.09
88.0	9.51	9.41	9.50	9.39	9.52	9.48	0.13	37.09	47.08	37.71	37.21	0.48	88.0	1.35	1.09	1.09
95.0	9.52	9.41	9.53	9.39	9.52	9.48	0.14	36.34	46.86	36.94	36.38	0.62	95.0	1.35	1.10	1.10
102.0	9.53	9.41	9.54	9.39	9.52	9.48	0.15	35.61	46.66	36.17	35.59	0.72	102.0	1.35	1.11	1.11
109.0	9.55	9.42	9.56	9.40	9.55	9.51	0.16	34.86	46.58	35.44	34.81	0.82	109.0	1.35	1.12	1.12
116.0	9.56	9.45	9.58	9.42	9.57	9.53	0.17	34.12	46.45	34.64	34.02	0.97	116.0	1.35	1.12	1.13
123.0	9.58	9.47	9.60	9.44	9.61	9.58	0.17	33.38	46.29	33.90	33.27	0.99	123.0	1.35	1.13	1.14
130.0	9.60	9.51	9.63	9.48	9.65	9.63	0.17	32.70	46.27	33.19	32.55	1.18	130.0	1.35	1.14	1.15
137.0	9.64	9.54	9.64	9.52	9.69	9.67	0.16	32.02	46.38	32.48	31.86	1.36	137.0	1.35	1.15	1.16
144.0	9.65	9.57	9.67	9.55	9.71	9.69	0.16	31.37	46.34	31.78	31.18	1.39	144.0	1.36	1.16	1.17
151.0	9.67	9.59	9.69	9.56	9.73	9.71	0.17	30.71	46.36	31.11	30.54	1.59	151.0	1.36	1.17	1.18
158.0	9.68	9.58	9.70	9.56	9.73	9.70	0.17	30.06	46.51	30.45	29.90	1.69	158.0	1.37	1.18	1.19
161.4	9.68	9.59	9.69	9.56	9.73	9.70	0.17	29.77	46.45	30.13	29.59	1.82	161.4	1.37	1.18	1.19
164.8	9.68	9.59	9.70	9.55	9.74	9.70	0.18	29.47	46.59	29.80	29.29	1.90	164.8	1.37	1.19	1.20
168.2	9.68	9.59	9.70	9.56	9.73	9.70	0.17	29.17	46.67	29.49	29.00	1.95	168.2	1.38	1.19	1.20
171.6	9.69	9.60	9.71	9.57	9.74	9.70	0.17	28.88	46.78	29.18	28.70	2.05	171.6	1.38	1.20	1.20
175.0	9.69	9.61	9.72	9.58	9.73	9.70	0.16	28.57	46.82	28.88	28.40	2.08	175.0	1.38	1.20	1.21

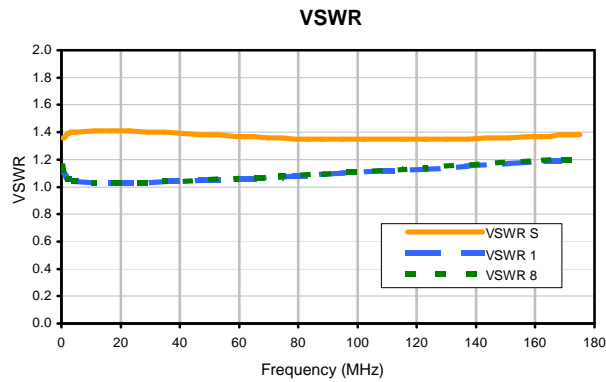
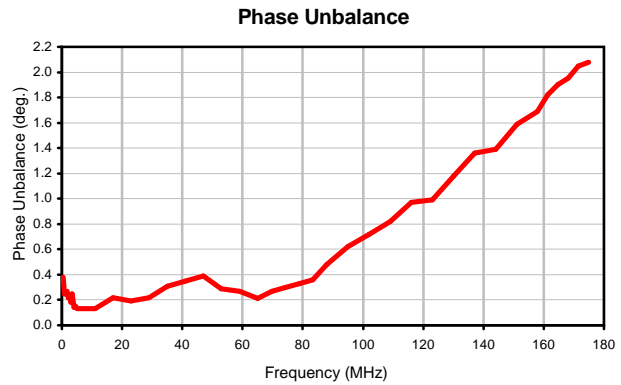
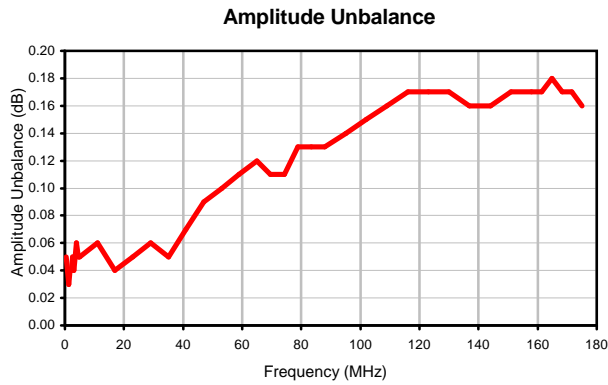
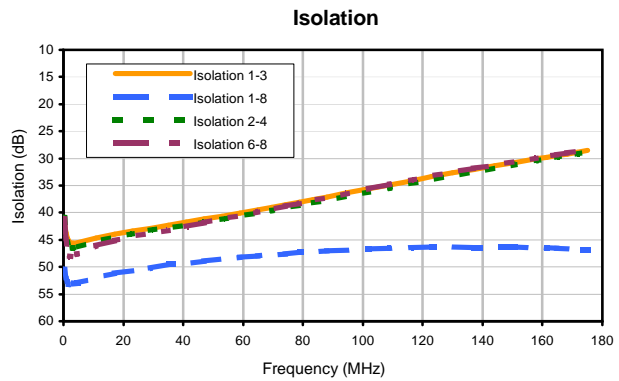
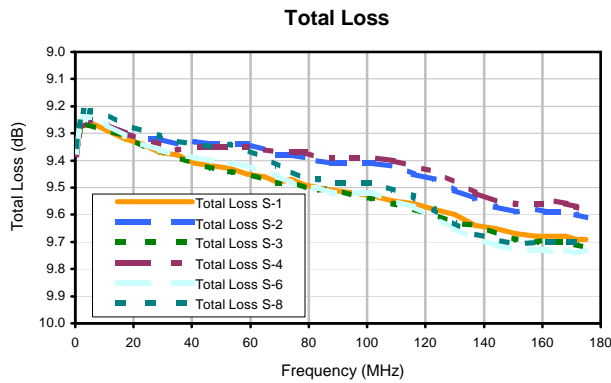
¹ Total Loss = Insertion Loss + 9dB Splitter Loss



8 Way-0° Power Splitter/Combiner

ZFSC-8-1+

Typical Performance Curves



REV. X2
ZFSC-8-1+
100721
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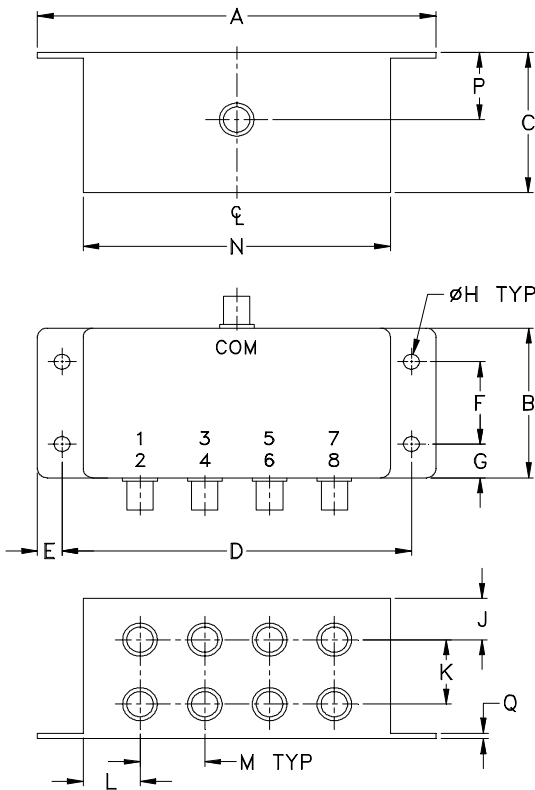
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Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
R29	4.06 (103.12)	1.60 (40.64)	1.57 (39.88)	3.56 (90.42)	.24 (6.10)	.88 (22.35)	.36 (9.14)	.160 (4.06)	.43 (10.92)	.69 (17.53)	.58 (14.73)	.66 (16.76)	3.13 (79.50)

CASE#	P	Q	WT. GRAMS
R29	.79 (20.07)	.13 (3.18)	200.0

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 100°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