

Power Splitter/Combiner

ZFSC-6-1+

6 Way-0° 50Ω 1 to 175 MHz

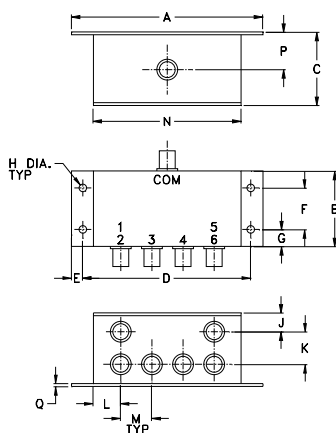
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.5W max.
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

SUM PORT	S
PORT 1,2,3,4,5,6	1,2,3,4,5,6

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	.8	.125	grams
10.92	17.53	14.73	16.76	79.50	20.32	3.18	190.0

Features

- low insertion loss, 0.75 dB typ.
- good isolation, 26 dB typ.
- rugged shielded case

Applications

- VHF
- receivers and transmitters



Generic photo used for illustration purposes only

CASE STYLE: Q28

Connectors	Model
BNC	ZFSC-6-1+
SMA	ZFSC-6-1-S+

+RoHS Compliant

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

Electrical Specifications

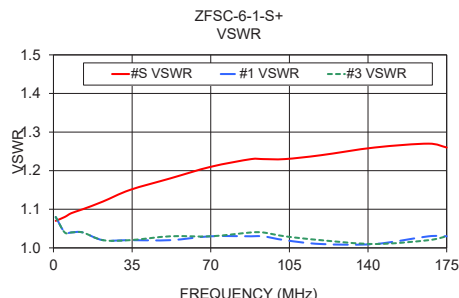
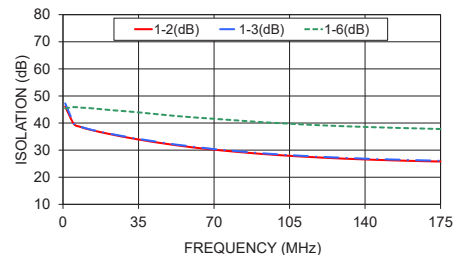
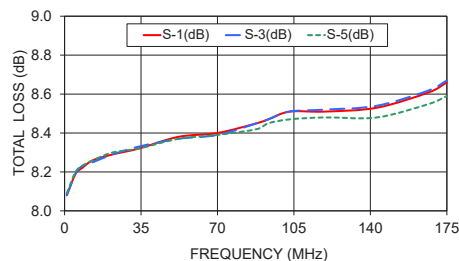
FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 7.8 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)			VSWR (:1)			
	L		M		U		L		M		U		L		M		U		S		OUT	
f_L - f_U	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Typ.	Max.	Typ.	Max.
1-175	27	22	26	20	26	20	0.75	1.0	0.75	1.2	0.8	1.2	2	6	12	0.2	0.4	0.6	—	—	—	—

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

Frequency (MHz)	Total Loss ¹ (dB)			Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 3
	S-1	S-2	S-3		1-2	1-3	1-6				
1.00	8.08	8.08	8.09	0.03	46.12	47.26	45.41	0.06	1.07	1.08	1.08
5.00	8.19	8.19	8.20	0.03	39.73	39.76	45.89	0.06	1.08	1.04	1.04
8.00	8.22	8.23	8.23	0.03	38.61	38.66	45.69	0.07	1.09	1.04	1.04
13.00	8.26	8.25	8.26	0.03	37.46	37.56	45.47	0.24	1.10	1.04	1.04
22.00	8.29	8.29	8.30	0.03	35.88	36.04	44.79	0.24	1.12	1.02	1.02
34.00	8.32	8.33	8.32	0.03	34.07	34.26	44.03	0.38	1.15	1.02	1.02
52.00	8.38	8.37	8.37	0.03	31.86	32.09	42.63	0.61	1.18	1.02	1.03
70.00	8.40	8.39	8.39	0.02	30.17	30.40	41.57	0.74	1.21	1.03	1.03
88.00	8.45	8.45	8.42	0.03	28.88	29.12	40.56	0.93	1.23	1.03	1.04
93.25	8.47	8.47	8.45	0.03	28.55	28.80	40.28	1.01	1.23	1.03	1.04
103.00	8.51	8.51	8.47	0.04	28.02	28.28	39.85	1.12	1.23	1.02	1.03
119.00	8.51	8.52	8.48	0.04	27.29	27.54	39.19	1.32	1.24	1.01	1.02
143.00	8.53	8.54	8.48	0.06	26.48	26.77	38.49	1.46	1.26	1.01	1.01
167.00	8.61	8.62	8.55	0.08	25.94	26.24	37.97	1.76	1.27	1.03	1.02
175.00	8.66	8.67	8.59	0.08	25.82	26.13	37.80	1.91	1.26	1.03	1.03

ZFSC-6-1-S+ 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

ZFSC-6-1+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹			AMP. UNBAL. (dB)	ISOLATION			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR		
	S-1	S-3	S-5		1-2	1-3	1-6			S	1	3
1.0	8.08	8.08	8.09	0.03	46.12	47.26	45.41	0.06	1.0	1.07	1.08	1.08
1.8	8.12	8.11	8.12	0.03	43.61	43.66	45.88	0.03	1.8	1.07	1.06	1.06
2.6	8.13	8.14	8.14	0.03	41.89	41.83	46.00	0.11	2.6	1.07	1.05	1.05
3.4	8.15	8.16	8.17	0.03	40.88	40.88	46.04	0.07	3.4	1.07	1.05	1.05
4.2	8.17	8.17	8.19	0.03	40.23	40.25	45.92	0.11	4.2	1.08	1.04	1.04
5.0	8.19	8.19	8.20	0.03	39.73	39.76	45.89	0.06	5.0	1.08	1.04	1.04
6.0	8.20	8.20	8.22	0.03	39.26	39.33	45.86	0.09	6.0	1.08	1.04	1.04
7.0	8.21	8.21	8.23	0.03	38.87	38.96	45.74	0.16	7.0	1.08	1.04	1.04
8.0	8.22	8.23	8.23	0.03	38.61	38.66	45.69	0.07	8.0	1.09	1.04	1.04
9.0	8.23	8.23	8.24	0.04	38.32	38.39	45.62	0.14	9.0	1.09	1.04	1.04
10.0	8.24	8.23	8.25	0.03	38.09	38.16	45.64	0.12	10.0	1.09	1.04	1.04
13.0	8.26	8.25	8.26	0.03	37.46	37.56	45.47	0.24	13.0	1.10	1.04	1.04
16.0	8.27	8.27	8.27	0.03	36.90	37.02	45.23	0.22	16.0	1.11	1.03	1.03
19.0	8.28	8.28	8.28	0.04	36.37	36.54	44.99	0.25	19.0	1.12	1.03	1.03
22.0	8.29	8.29	8.30	0.03	35.88	36.04	44.79	0.24	22.0	1.12	1.02	1.02
25.0	8.30	8.30	8.31	0.03	35.41	35.56	44.63	0.37	25.0	1.13	1.02	1.02
28.0	8.30	8.31	8.32	0.03	34.94	35.11	44.31	0.31	28.0	1.14	1.02	1.02
34.0	8.32	8.33	8.32	0.03	34.07	34.26	44.03	0.38	34.0	1.15	1.02	1.02
40.0	8.34	8.35	8.34	0.03	33.28	33.46	43.60	0.43	40.0	1.16	1.02	1.02
46.0	8.35	8.36	8.35	0.03	32.54	32.72	43.09	0.56	46.0	1.17	1.02	1.02
52.0	8.38	8.37	8.37	0.03	31.86	32.09	42.63	0.61	52.0	1.18	1.02	1.03
58.0	8.38	8.38	8.37	0.03	31.24	31.46	42.31	0.65	58.0	1.19	1.02	1.03
64.0	8.40	8.39	8.39	0.03	30.69	30.90	41.95	0.67	64.0	1.20	1.02	1.03
70.0	8.40	8.39	8.39	0.02	30.17	30.40	41.57	0.74	70.0	1.21	1.03	1.03
76.0	8.41	8.41	8.40	0.03	29.69	29.93	41.13	0.83	76.0	1.22	1.03	1.03
82.0	8.42	8.42	8.41	0.02	29.26	29.50	40.91	0.97	82.0	1.22	1.03	1.04
88.0	8.45	8.45	8.42	0.03	28.88	29.12	40.56	0.93	88.0	1.23	1.03	1.04
89.8	8.46	8.45	8.43	0.04	28.76	29.00	40.43	0.98	89.8	1.23	1.03	1.04
91.5	8.46	8.46	8.44	0.03	28.67	28.90	40.38	1.02	91.5	1.23	1.03	1.04
93.3	8.47	8.47	8.45	0.03	28.55	28.80	40.28	1.01	93.3	1.23	1.03	1.04
95.0	8.48	8.47	8.44	0.04	28.45	28.71	40.25	1.00	95.0	1.23	1.03	1.04
103.0	8.51	8.51	8.47	0.04	28.02	28.28	39.85	1.12	103.0	1.23	1.02	1.03
111.0	8.51	8.52	8.48	0.04	27.63	27.89	39.49	1.28	111.0	1.24	1.02	1.03
119.0	8.51	8.52	8.48	0.04	27.29	27.54	39.19	1.32	119.0	1.24	1.01	1.02
127.0	8.51	8.52	8.46	0.05	26.98	27.25	38.92	1.30	127.0	1.24	1.01	1.02
135.0	8.51	8.53	8.48	0.05	26.72	26.99	38.70	1.42	135.0	1.25	1.00	1.01
143.0	8.53	8.54	8.48	0.06	26.48	26.77	38.49	1.46	143.0	1.26	1.01	1.01
151.0	8.56	8.57	8.51	0.06	26.27	26.57	38.27	1.64	151.0	1.26	1.02	1.01
159.0	8.59	8.59	8.53	0.07	26.09	26.39	38.07	1.68	159.0	1.27	1.02	1.02
167.0	8.61	8.62	8.55	0.08	25.94	26.24	37.97	1.76	167.0	1.27	1.03	1.02
175.0	8.66	8.67	8.59	0.08	25.82	26.13	37.80	1.91	175.0	1.26	1.03	1.03

¹ Total Loss = Insertion Loss+ 7.8dB Splitter Loss

REV. X2
ZFSC-6-1+
100627
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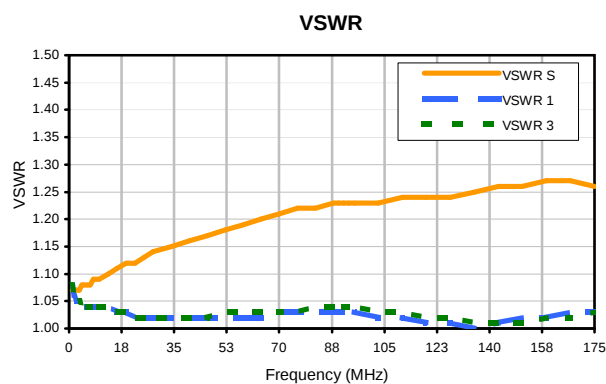
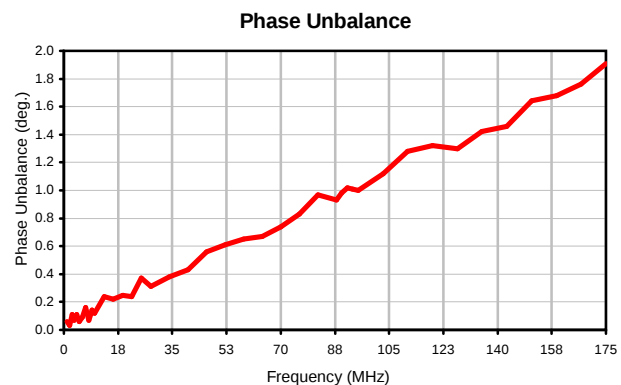
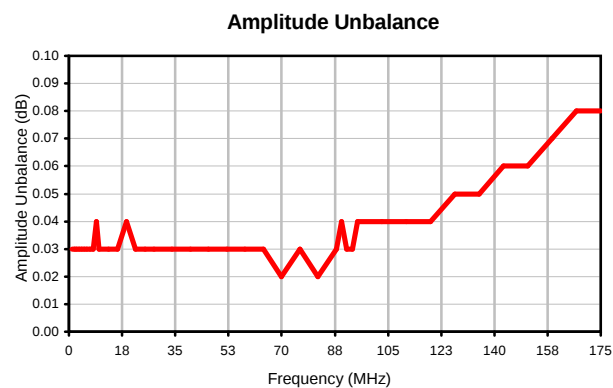
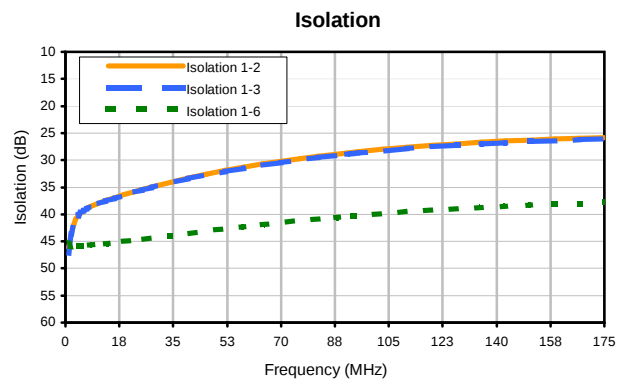
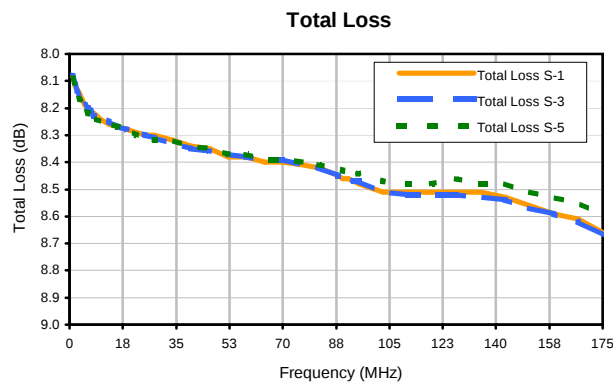
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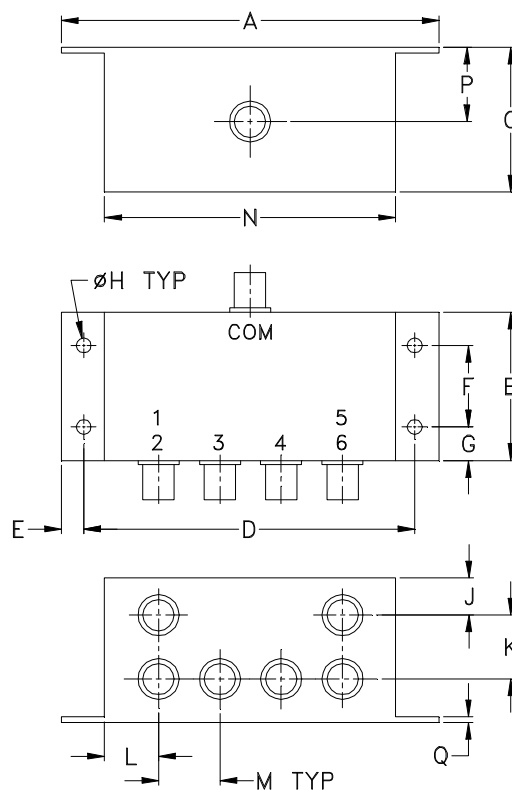
6 Way-0° Power Splitter/Combiner

ZFSC-6-1+

Typical Performance Curves



Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
Q28	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
Q28	.8 (20.32)	.125 (3.18)	190.0

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