

Power Splitter/Combiner

6 Way-0° 50Ω 1 to 500 MHz

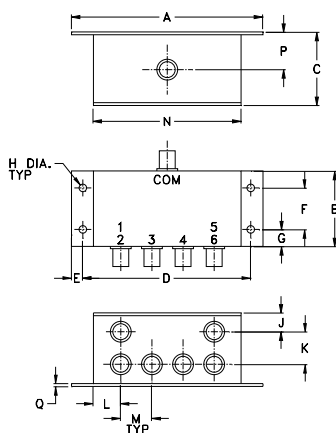
Maximum Ratings

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

- wideband, 1 to 500 MHz
- low insertion loss, 0.6 dB typ.
- good isolation, 26 dB typ.
- good amplitude unbalance, 0.3 dB typ.
- rugged shielded case

Applications

- VHF/UHF
- instrumentation
- receivers and transmitters

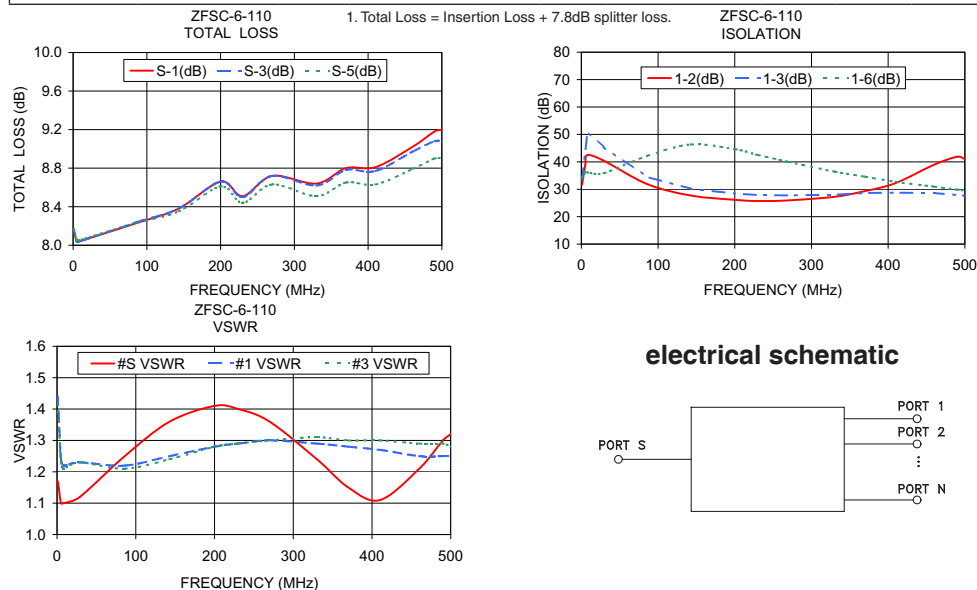
Electrical Specifications

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.
1-500	35	25	26	20	25	20	0.5	0.8	0.6	1.1	1.0	1.7	2	6	12	0.3	0.3	0.8	—	—	—

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	8.15	8.16	8.17	0.09	31.66	33.32	34.39	0.14	1.17	1.44	1.42
5.00	8.04	8.04	8.05	0.05	38.59	43.62	36.18	0.06	1.10	1.24	1.23
8.00	8.04	8.04	8.05	0.04	42.48	50.99	36.16	0.13	1.10	1.22	1.21
29.00	8.09	8.09	8.10	0.03	40.47	45.41	35.86	0.46	1.12	1.23	1.23
86.00	8.23	8.24	8.23	0.02	31.86	34.47	42.20	1.19	1.25	1.22	1.21
143.00	8.38	8.38	8.35	0.03	27.71	30.17	46.32	1.82	1.36	1.25	1.24
200.00	8.66	8.66	8.61	0.05	26.16	28.45	44.64	2.49	1.41	1.28	1.28
230.00	8.51	8.50	8.44	0.08	25.72	27.87	42.52	2.74	1.40	1.29	1.29
270.00	8.72	8.72	8.63	0.09	25.94	27.77	40.02	3.18	1.36	1.30	1.30
330.00	8.64	8.62	8.51	0.13	27.24	27.99	36.44	3.53	1.24	1.29	1.31
370.00	8.80	8.78	8.65	0.15	29.33	28.64	34.61	4.09	1.15	1.28	1.30
410.00	8.81	8.77	8.63	0.18	32.29	28.75	32.70	4.20	1.11	1.27	1.30
460.00	9.02	8.97	8.79	0.23	38.99	28.62	30.93	4.51	1.21	1.25	1.29
490.00	9.18	9.08	8.90	0.27	41.87	27.89	29.83	4.49	1.30	1.25	1.29
500.00	9.20	9.08	8.90	0.29	41.00	27.62	29.50	4.38	1.32	1.25	1.28



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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp



6 Way-0° Power Splitter/Combiner

ZFSC-6-110

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	8.15	8.16	8.17	0.09	31.66	33.32	34.39	0.14	1.0	1.17	1.44	1.42
1.8	8.11	8.11	8.12	0.07	32.94	35.78	35.49	0.05	1.8	1.14	1.35	1.33
2.6	8.07	8.08	8.08	0.06	34.31	37.81	35.87	0.03	2.6	1.12	1.30	1.29
3.4	8.06	8.06	8.06	0.05	35.77	39.75	36.06	0.15	3.4	1.11	1.27	1.26
4.2	8.04	8.05	8.05	0.05	37.26	41.79	36.13	0.06	4.2	1.11	1.25	1.24
5.0	8.04	8.04	8.05	0.05	38.59	43.62	36.18	0.06	5.0	1.10	1.24	1.23
6.0	8.04	8.04	8.05	0.04	40.14	46.08	36.18	0.07	6.0	1.10	1.23	1.22
7.0	8.04	8.05	8.05	0.05	41.45	48.52	36.18	0.13	7.0	1.10	1.23	1.22
8.0	8.04	8.04	8.05	0.04	42.48	50.99	36.16	0.13	8.0	1.10	1.22	1.21
9.0	8.03	8.04	8.05	0.05	43.29	53.49	36.14	0.12	9.0	1.10	1.22	1.21
10.0	8.04	8.04	8.05	0.04	43.89	55.93	36.13	0.14	10.0	1.10	1.22	1.21
29.0	8.09	8.09	8.10	0.03	40.47	45.41	35.86	0.46	29.0	1.12	1.23	1.23
48.0	8.14	8.15	8.15	0.03	37.77	41.42	37.90	0.73	48.0	1.16	1.22	1.22
67.0	8.19	8.19	8.19	0.02	34.32	37.17	40.10	0.90	67.0	1.20	1.22	1.21
86.0	8.23	8.24	8.23	0.02	31.86	34.47	42.20	1.19	86.0	1.25	1.22	1.21
105.0	8.34	8.33	8.33	0.02	30.11	32.67	44.10	1.45	105.0	1.29	1.23	1.22
124.0	8.39	8.40	8.36	0.03	28.77	31.25	45.49	1.65	124.0	1.33	1.24	1.23
143.0	8.38	8.38	8.35	0.03	27.71	30.17	46.32	1.82	143.0	1.36	1.25	1.24
162.0	8.40	8.41	8.37	0.05	26.93	29.33	46.35	2.12	162.0	1.38	1.26	1.25
181.0	8.54	8.54	8.50	0.04	26.44	28.81	45.63	2.28	181.0	1.40	1.27	1.27
200.0	8.66	8.66	8.61	0.05	26.16	28.45	44.64	2.49	200.0	1.41	1.28	1.28
210.0	8.63	8.62	8.57	0.06	26.00	28.25	43.97	2.63	210.0	1.41	1.29	1.28
220.0	8.56	8.56	8.49	0.09	25.83	28.04	43.19	2.66	220.0	1.41	1.29	1.29
230.0	8.51	8.50	8.44	0.08	25.72	27.87	42.52	2.74	230.0	1.40	1.29	1.29
240.0	8.50	8.50	8.43	0.07	25.67	27.75	41.84	2.87	240.0	1.40	1.30	1.29
250.0	8.54	8.54	8.46	0.08	25.67	27.68	41.11	2.96	250.0	1.39	1.30	1.30
270.0	8.72	8.72	8.63	0.09	25.94	27.77	40.02	3.18	270.0	1.36	1.30	1.30
290.0	8.78	8.77	8.67	0.10	26.35	27.93	38.90	3.35	290.0	1.33	1.30	1.31
310.0	8.60	8.58	8.48	0.12	26.67	27.91	37.65	3.43	310.0	1.29	1.30	1.31
330.0	8.64	8.62	8.51	0.13	27.24	27.99	36.44	3.53	330.0	1.24	1.29	1.31
350.0	8.73	8.71	8.59	0.14	28.13	28.28	35.46	3.78	350.0	1.19	1.29	1.31
370.0	8.80	8.78	8.65	0.15	29.33	28.64	34.61	4.09	370.0	1.15	1.28	1.30
390.0	8.78	8.75	8.62	0.16	30.68	28.78	33.66	4.19	390.0	1.12	1.28	1.30
410.0	8.81	8.77	8.63	0.18	32.29	28.75	32.70	4.20	410.0	1.11	1.27	1.30
430.0	8.88	8.84	8.68	0.20	34.48	28.76	31.89	4.22	430.0	1.14	1.26	1.29
450.0	8.95	8.89	8.72	0.23	37.35	28.72	31.23	4.38	450.0	1.18	1.26	1.29
460.0	9.02	8.97	8.79	0.23	38.99	28.62	30.93	4.51	460.0	1.21	1.25	1.29
470.0	9.09	9.04	8.85	0.24	40.56	28.43	30.56	4.55	470.0	1.24	1.25	1.29
480.0	9.15	9.06	8.88	0.26	41.76	28.19	30.20	4.58	480.0	1.27	1.25	1.29
490.0	9.18	9.08	8.90	0.27	41.87	27.89	29.83	4.49	490.0	1.30	1.25	1.29
500.0	9.20	9.08	8.90	0.29	41.00	27.62	29.50	4.38	500.0	1.32	1.25	1.28

¹ Total Loss = Insertion Loss+ 7.8dB Splitter Loss

REV. X2
ZFSC-6-110
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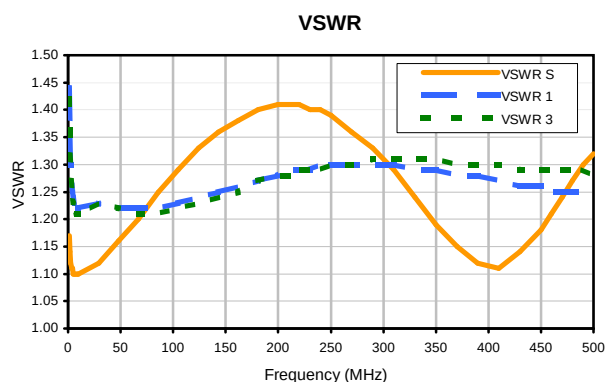
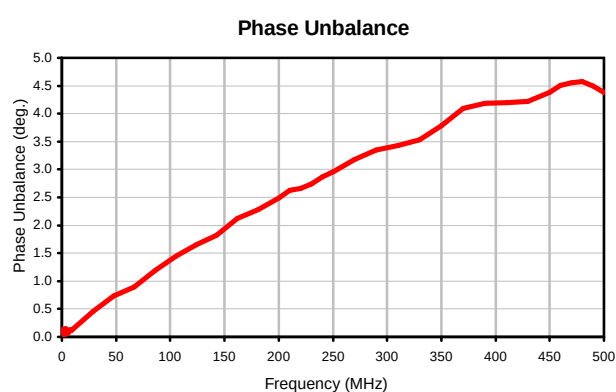
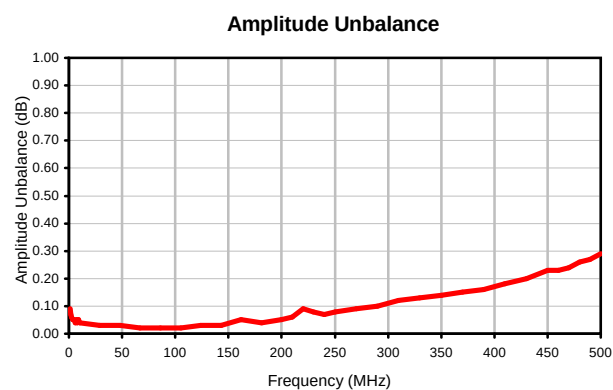
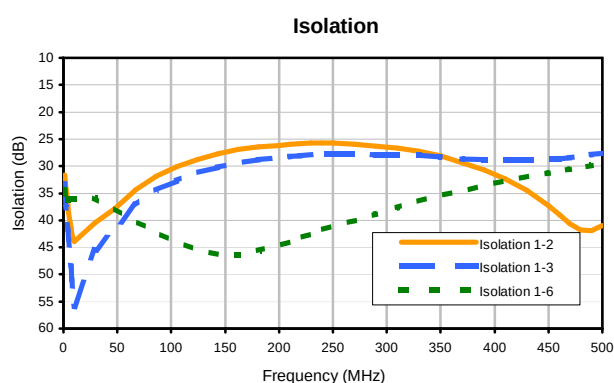
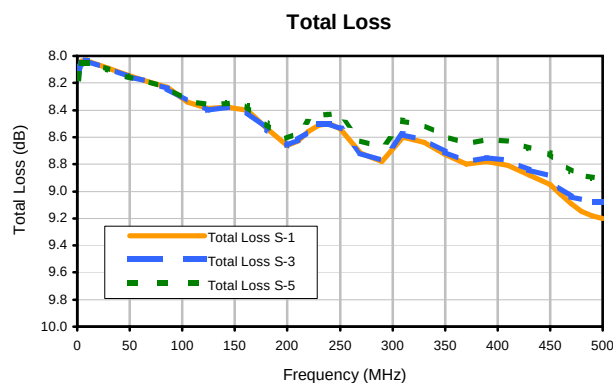
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6 Way-0° Power Splitter/Combiner

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Typical Performance Curves



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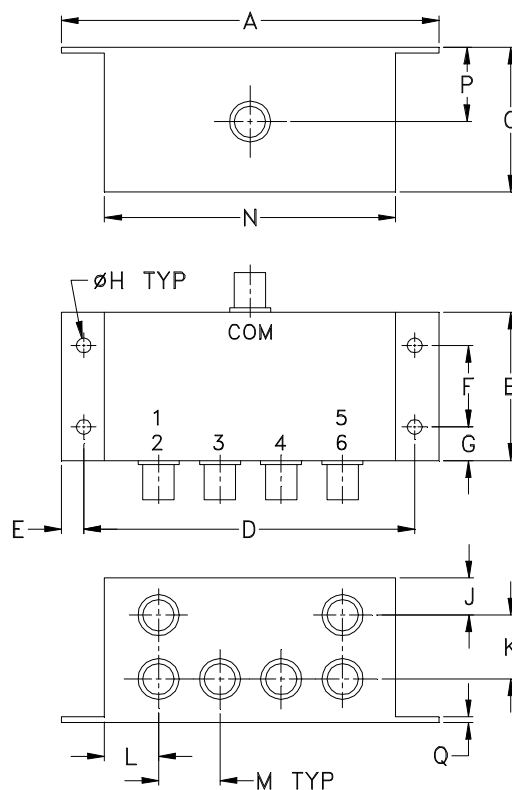


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Outline Dimensions



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