

# Power Splitter/Combiner

## ZFSC-4-1W+

4 Way-0° 50Ω 10 to 500 MHz



Generic photo used for illustration purposes only

CASE STYLE: G15

Connectors	Model
BNC	ZFSC-4-1W-BNC+
SMA	ZFSC-4-1W-S+
<b>BRACKET (OPTION "B")</b>	

**+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	0.250W max.
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

### Features

- wideband, 10 to 500 MHz
- good isolation, 23 dB typ.
- rugged shielded case
- good VSWR, 1.15:1

### Applications

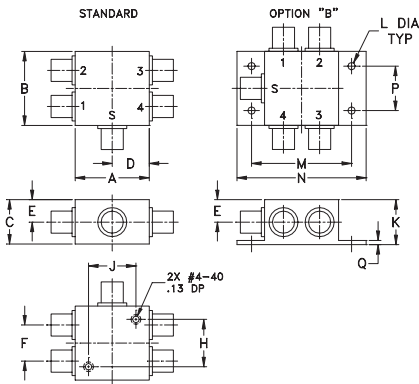
- VHF/UHF
- radio communication

### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 6.0 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.	Max.	Max.	Max.	Max.
10-500	23	20	23	20	23	20	0.6	1.5	0.6	1.5	0.6	1.5	4	8	8	0.2	0.3	0.4

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  $f_U$ ]

### Outline Drawing



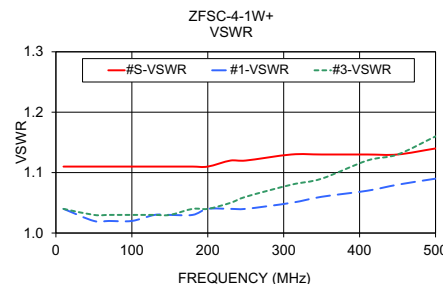
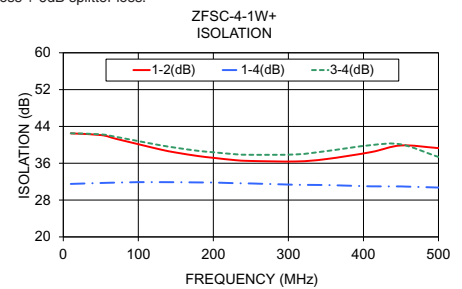
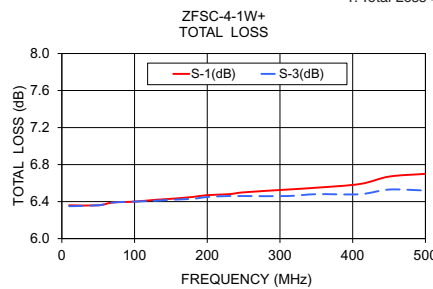
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	.61	--	.80
31.75	31.75	19.05	16.00	9.65	15.49	--	20.32
J	K	L	M	N	P	Q	wt
.80	.76	.125	1.688	2.18	.75	.07	grams
20.32	19.30	3.18	42.88	55.37	19.05	1.78	85.0

### Typical Performance Data

Freq. (MHz)	Total Loss <sup>1</sup> (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	1-4	3-4						
10	6.36	6.35	6.35	6.35	0.01	42.49	31.51	42.51	0.07	1.11	1.04	1.04	1.04	1.04
50	6.36	6.36	6.36	6.36	0.01	42.13	31.71	42.28	0.28	1.11	1.02	1.02	1.03	1.03
70	6.39	6.38	6.39	6.38	0.01	41.32	31.80	41.74	0.38	1.11	1.02	1.02	1.03	1.02
100	6.40	6.40	6.40	6.39	0.00	40.14	31.90	40.81	0.54	1.11	1.02	1.03	1.03	1.03
130	6.42	6.40	6.41	6.41	0.01	38.97	31.90	39.89	0.68	1.11	1.03	1.03	1.03	1.03
150	6.43	6.42	6.42	6.43	0.01	38.33	31.88	39.37	0.78	1.11	1.03	1.03	1.03	1.03
180	6.45	6.43	6.43	6.44	0.02	37.56	31.84	38.69	0.92	1.11	1.03	1.04	1.04	1.04
200	6.47	6.45	6.45	6.47	0.02	37.18	31.81	38.39	1.05	1.11	1.04	1.04	1.04	1.04
230	6.48	6.45	6.46	6.48	0.03	36.66	31.66	37.95	1.16	1.12	1.04	1.05	1.05	1.04
250	6.50	6.46	6.46	6.48	0.04	36.50	31.61	37.84	1.25	1.12	1.04	1.06	1.06	1.05
310	6.53	6.47	6.46	6.52	0.07	36.39	31.33	37.92	1.52	1.13	1.05	1.07	1.08	1.06
350	6.55	6.48	6.48	6.53	0.07	36.90	31.27	38.63	1.74	1.13	1.06	1.08	1.09	1.07
410	6.59	6.49	6.48	6.57	0.12	38.42	30.99	39.94	1.88	1.13	1.07	1.11	1.12	1.06
450	6.67	6.56	6.53	6.63	0.13	39.87	30.96	40.10	2.05	1.13	1.08	1.12	1.13	1.08
500	6.70	6.54	6.52	6.66	0.18	39.29	30.72	37.36	2.17	1.14	1.09	1.14	1.16	1.09

1. Total Loss = Insertion Loss + 6dB splitter loss.



### 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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# 4 Way-0° Power Splitter/Combiner

# ZFSC-4-1W+

## Typical Performance Data

FREQ. (MHz)	TOTAL LOSS <sup>1</sup> (dB)				AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)				
	S-1	S-2	S-3	S-4		1-2	1-4	3-4			S	1	2	3	4
10.0	6.36	6.35	6.35	6.35	0.01	42.49	31.51	42.51	0.07	10.0	1.11	1.04	1.04	1.04	1.04
18.0	6.35	6.34	6.34	6.35	0.01	42.71	31.57	42.70	0.12	18.0	1.11	1.03	1.03	1.03	1.03
26.0	6.35	6.35	6.35	6.35	0.00	42.74	31.57	42.63	0.13	26.0	1.11	1.03	1.03	1.03	1.03
34.0	6.35	6.35	6.35	6.35	0.01	42.54	31.60	42.59	0.17	34.0	1.11	1.03	1.03	1.03	1.03
42.0	6.36	6.35	6.35	6.35	0.01	42.38	31.67	42.45	0.23	42.0	1.11	1.02	1.03	1.03	1.03
50.0	6.36	6.36	6.36	6.36	0.01	42.13	31.71	42.28	0.28	50.0	1.11	1.02	1.02	1.03	1.03
60.0	6.38	6.37	6.37	6.38	0.01	41.74	31.75	42.09	0.34	60.0	1.11	1.02	1.02	1.03	1.02
70.0	6.39	6.38	6.39	6.38	0.01	41.32	31.80	41.74	0.38	70.0	1.11	1.02	1.02	1.03	1.02
80.0	6.40	6.39	6.39	6.39	0.01	40.95	31.84	41.45	0.42	80.0	1.11	1.02	1.02	1.03	1.02
90.0	6.40	6.38	6.40	6.39	0.01	40.56	31.87	41.12	0.50	90.0	1.11	1.02	1.02	1.03	1.03
100.0	6.40	6.40	6.40	6.39	0.00	40.14	31.90	40.81	0.54	100.0	1.11	1.02	1.03	1.03	1.03
110.0	6.40	6.40	6.39	6.41	0.01	39.76	31.90	40.49	0.58	110.0	1.11	1.02	1.03	1.03	1.03
120.0	6.41	6.40	6.41	6.41	0.01	39.34	31.90	40.19	0.63	120.0	1.11	1.03	1.03	1.03	1.03
130.0	6.42	6.40	6.41	6.41	0.01	38.97	31.90	39.89	0.68	130.0	1.11	1.03	1.03	1.03	1.03
140.0	6.43	6.42	6.42	6.43	0.01	38.67	31.89	39.58	0.72	140.0	1.11	1.03	1.03	1.03	1.03
150.0	6.43	6.42	6.42	6.43	0.01	38.33	31.88	39.37	0.78	150.0	1.11	1.03	1.03	1.03	1.03
160.0	6.44	6.42	6.43	6.43	0.02	38.07	31.88	39.04	0.84	160.0	1.11	1.03	1.03	1.04	1.03
170.0	6.44	6.42	6.42	6.43	0.02	37.77	31.85	38.89	0.85	170.0	1.11	1.03	1.04	1.04	1.03
180.0	6.45	6.43	6.43	6.44	0.02	37.56	31.84	38.69	0.92	180.0	1.11	1.03	1.04	1.04	1.04
190.0	6.46	6.44	6.45	6.46	0.02	37.37	31.83	38.50	0.98	190.0	1.11	1.03	1.04	1.04	1.04
200.0	6.47	6.45	6.45	6.47	0.02	37.18	31.81	38.39	1.05	200.0	1.11	1.04	1.04	1.04	1.04
210.0	6.47	6.45	6.45	6.47	0.03	36.92	31.73	38.15	1.09	210.0	1.12	1.04	1.05	1.05	1.04
220.0	6.47	6.44	6.44	6.46	0.03	36.82	31.67	38.03	1.07	220.0	1.12	1.04	1.05	1.05	1.04
230.0	6.48	6.45	6.46	6.48	0.03	36.66	31.66	37.95	1.16	230.0	1.12	1.04	1.05	1.05	1.04
240.0	6.51	6.47	6.46	6.50	0.04	36.55	31.64	37.90	1.23	240.0	1.12	1.04	1.05	1.06	1.05
250.0	6.50	6.46	6.46	6.48	0.04	36.50	31.61	37.84	1.25	250.0	1.12	1.04	1.06	1.06	1.05
270.0	6.50	6.46	6.46	6.49	0.04	36.38	31.55	37.80	1.38	270.0	1.12	1.05	1.06	1.06	1.05
290.0	6.57	6.52	6.51	6.56	0.05	36.37	31.51	37.87	1.40	290.0	1.12	1.05	1.07	1.07	1.05
310.0	6.53	6.47	6.46	6.52	0.07	36.39	31.33	37.92	1.52	310.0	1.13	1.05	1.07	1.08	1.06
330.0	6.56	6.48	6.48	6.54	0.08	36.58	31.29	38.14	1.62	330.0	1.13	1.06	1.08	1.08	1.06
350.0	6.55	6.48	6.48	6.53	0.07	36.90	31.27	38.63	1.74	350.0	1.13	1.06	1.08	1.09	1.06
370.0	6.62	6.55	6.54	6.61	0.08	37.34	31.22	39.04	1.74	370.0	1.13	1.06	1.09	1.10	1.07
390.0	6.62	6.54	6.53	6.61	0.09	37.84	31.09	39.47	1.85	390.0	1.13	1.07	1.10	1.11	1.07
410.0	6.59	6.49	6.48	6.57	0.12	38.42	30.99	39.94	1.88	410.0	1.13	1.07	1.11	1.12	1.07
430.0	6.64	6.53	6.51	6.61	0.12	39.23	30.99	40.27	2.06	430.0	1.13	1.08	1.11	1.12	1.08
450.0	6.67	6.56	6.53	6.63	0.13	39.87	30.96	40.10	2.05	450.0	1.13	1.08	1.12	1.13	1.08
460.0	6.71	6.59	6.57	6.67	0.14	40.08	30.91	39.76	2.05	460.0	1.13	1.08	1.13	1.14	1.08
470.0	6.71	6.60	6.57	6.69	0.14	40.10	30.86	39.33	2.10	470.0	1.14	1.08	1.13	1.14	1.08
480.0	6.70	6.56	6.53	6.65	0.16	40.03	30.77	38.75	2.04	480.0	1.14	1.09	1.13	1.15	1.09
490.0	6.68	6.54	6.52	6.65	0.16	39.77	30.75	38.09	2.10	490.0	1.14	1.09	1.14	1.15	1.09
500.0	6.70	6.54	6.52	6.66	0.18	39.29	30.72	37.36	2.17	500.0	1.14	1.09	1.14	1.16	1.09

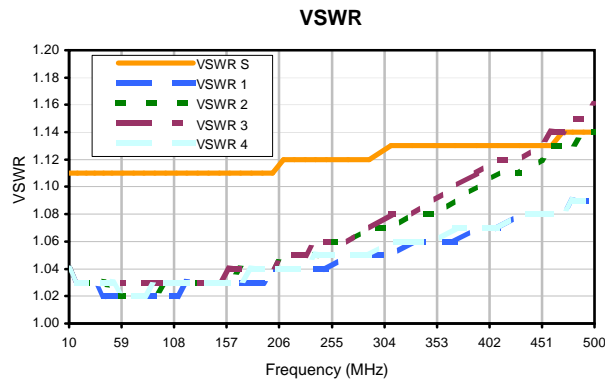
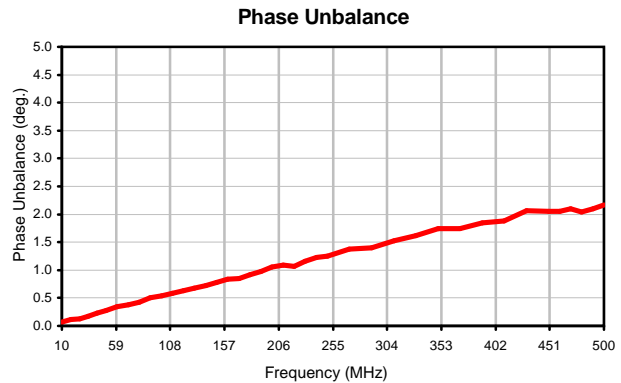
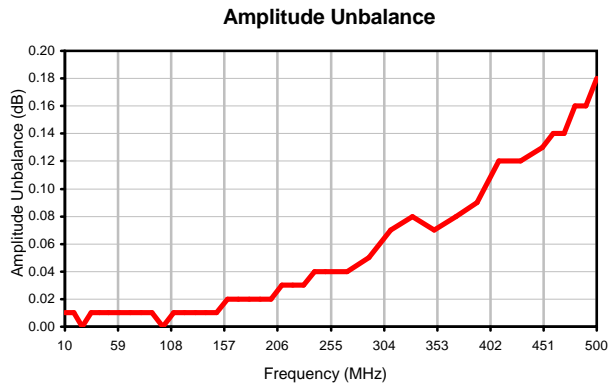
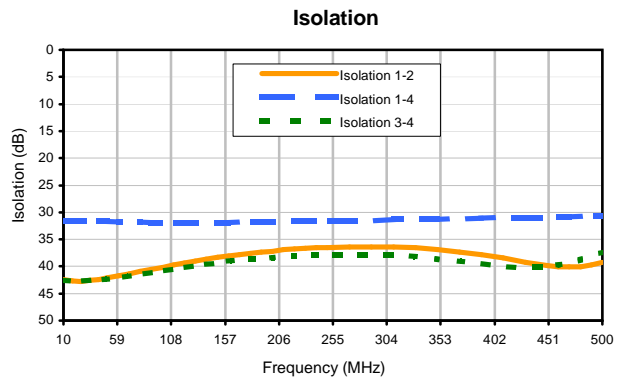
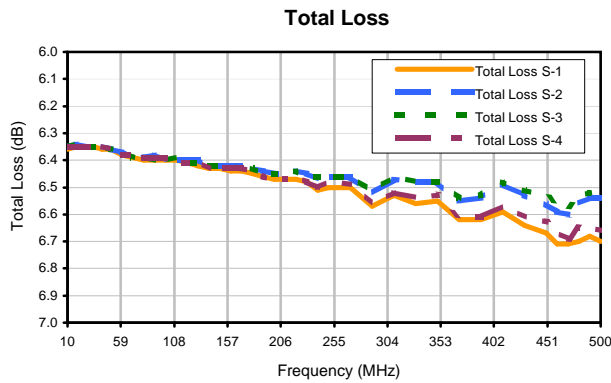
<sup>1</sup> Total Loss = Insertion Loss+ 6dB Splitter Loss



# 4 Way-0° Power Splitter/Combiner

# ZFSC-4-1W+

## Typical Performance Curves



REV. X2  
ZFSC-4-1W+  
100721  
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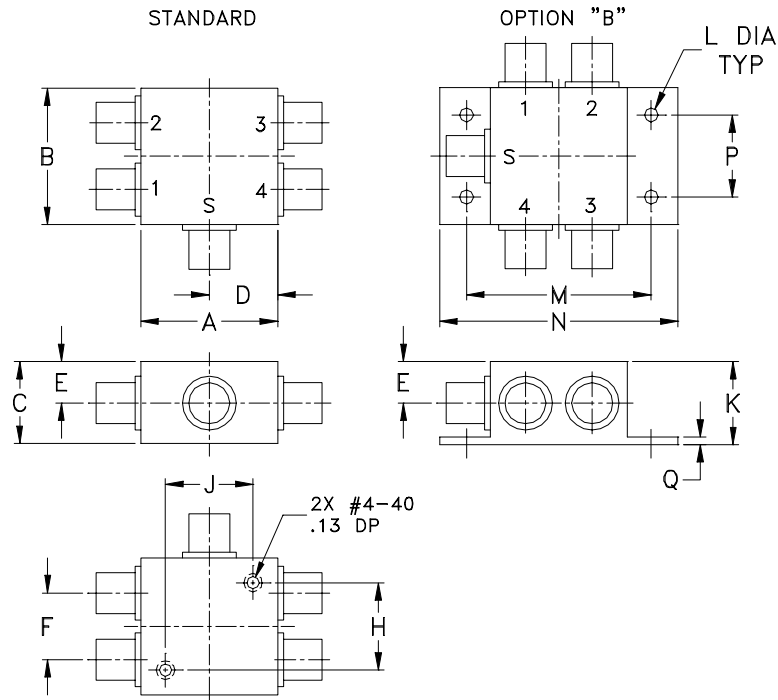
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### Outline Dimensions



CASE #	A	B	C	D	E	F	G	H	J	K	L
G15	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.00)	.38 (9.65)	.61 (15.49)	--	.80 (20.32)	.80 (20.32)	.76 (19.30)	.125 (3.18)

CASE #	M	N	P	Q	WT. GRAM
G15	1.688 (42.88)	2.18 (55.37)	.75 (19.05)	.07 (1.78)	85.0

Dimensions are in inches (mm). Tolerances: 2Pl.  $\pm .03$ ; 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.
- Mounting bracket available on request. Add suffix B to part number.
- For Bracket version, option "B" dimension "K" changes from .76 to .90 inches when connectors are type TNC.



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<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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