

Coaxial

# Power Splitter/Combiner

## ZAPD-2-252+

2 Way-0° 50Ω 5 to 2500 MHz



Generic photo used for illustration purposes only  
CASE STYLE: F14

Connectors	Model
N-TYPE	ZAPD-2-252-N+
SMA	ZAPD-2-252-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	0.04W max.

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

### Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2

### Features

- wideband, 5 to 2500 MHz, useable from 0.5 to 3000 MHz
- low insertion loss, 1.0 dB typ.
- excellent amplitude unbalance, 0.2 dB typ.
- excellent phase unbalance, 2 deg. typ.
- rugged shielded case

### Applications

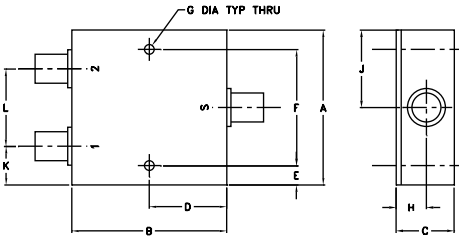
- VHF/UHF
- PCS
- GPS
- cellular
- instrumentation

### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 3.0 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)			VSWR (:1)			
	L		M		U		L		M		U		L	M	U	L	M	U	S		OUT	
	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Typ.	Max.	Typ.	Max.
5-2500	25	19	17	14	17	14	0.3	0.6	0.8	1.7	1.5	2.4	2	3	5	0.2	0.4	0.6	1.6	—	1.3	—

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
2.00	2.00	0.75	1.00	0.25	1.500	0.125
50.80	50.80	19.05	25.40	6.35	38.10	3.18

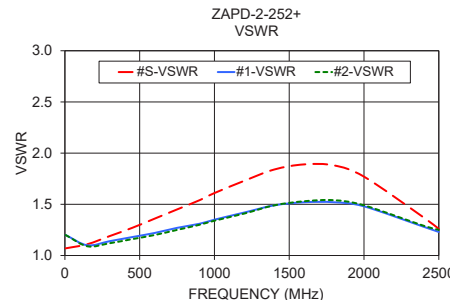
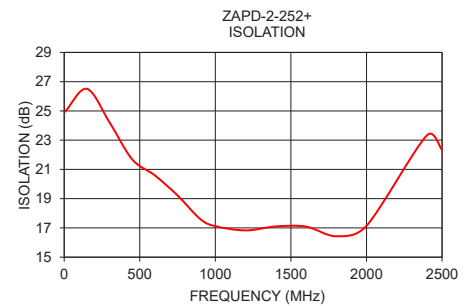
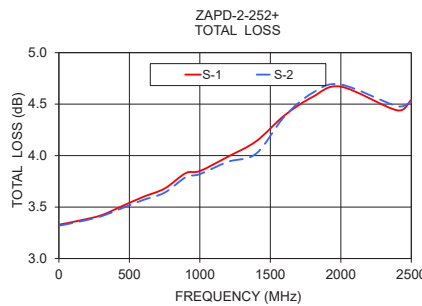
H	J	K	L	wt
0.39	1.00	0.50	1.00	grams
9.91	25.40	12.70	25.40	170.0

For option B with N-type connectors, dimension "C" increases to 0.94 inches.

### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
5.00	3.33	3.32	0.01	24.94	0.03	1.07	1.20	1.20
150.00	3.37	3.36	0.02	26.51	0.08	1.11	1.10	1.09
300.00	3.42	3.41	0.01	24.22	0.06	1.19	1.14	1.12
450.00	3.51	3.49	0.02	21.69	0.12	1.27	1.18	1.16
600.00	3.60	3.57	0.03	20.59	0.19	1.36	1.22	1.20
750.00	3.68	3.64	0.04	19.22	0.26	1.45	1.27	1.25
900.00	3.83	3.79	0.04	17.61	0.24	1.54	1.31	1.30
1000.00	3.85	3.82	0.02	17.12	0.41	1.61	1.35	1.34
1200.00	3.99	3.94	0.05	16.83	0.08	1.73	1.42	1.41
1400.00	4.14	4.02	0.13	17.10	1.12	1.84	1.49	1.49
1600.00	4.39	4.38	0.01	17.09	1.56	1.89	1.52	1.53
1800.00	4.57	4.61	0.04	16.43	2.12	1.88	1.52	1.54
2000.00	4.67	4.69	0.02	17.14	2.02	1.77	1.48	1.49
2400.00	4.44	4.48	0.03	23.33	2.38	1.37	1.28	1.29
2500.00	4.54	4.52	0.02	22.33	2.12	1.26	1.23	1.25

1. Total Loss = Insertion Loss + 3dB 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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# 2 Way-0° Power Splitter/Combiner

# ZAPD-2-252+

## Typical Performance Data

FREQ. (MHz)	TOTAL LOSS <sup>1</sup> (dB)		AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
0.3	3.81	3.78	0.02	13.27	0.02	0.3	1.34	2.38	2.38
1.0	3.52	3.51	0.01	18.02	0.05	1.0	1.13	1.62	1.62
2.0	3.41	3.39	0.01	21.31	0.07	2.0	1.09	1.38	1.39
3.0	3.36	3.36	0.01	23.14	0.07	3.0	1.08	1.29	1.29
4.0	3.34	3.33	0.01	24.25	0.04	4.0	1.07	1.23	1.23
5.0	3.33	3.32	0.00	24.94	0.03	5.0	1.07	1.20	1.20
6.0	3.32	3.31	0.01	25.41	0.04	6.0	1.07	1.17	1.17
7.0	3.31	3.30	0.01	25.74	0.03	7.0	1.07	1.15	1.15
8.0	3.32	3.30	0.01	25.98	0.06	8.0	1.07	1.14	1.14
9.0	3.31	3.30	0.01	26.17	0.05	9.0	1.07	1.13	1.13
10.0	3.31	3.30	0.01	26.33	0.03	10.0	1.07	1.12	1.12
20.0	3.31	3.30	0.01	26.97	0.03	20.0	1.07	1.09	1.09
40.0	3.33	3.31	0.01	27.24	0.06	40.0	1.07	1.09	1.09
60.0	3.33	3.32	0.01	27.21	0.03	60.0	1.08	1.09	1.09
80.0	3.34	3.34	0.01	27.02	0.07	80.0	1.08	1.09	1.09
100.0	3.35	3.35	0.01	26.86	0.06	100.0	1.09	1.09	1.09
150.0	3.37	3.36	0.02	26.51	0.08	150.0	1.11	1.10	1.09
200.0	3.38	3.38	0.01	25.60	0.03	200.0	1.14	1.11	1.10
250.0	3.41	3.40	0.01	24.99	0.08	250.0	1.16	1.12	1.11
300.0	3.42	3.41	0.01	24.22	0.06	300.0	1.19	1.14	1.12
350.0	3.46	3.44	0.02	23.24	0.06	350.0	1.22	1.15	1.14
400.0	3.47	3.46	0.01	22.89	0.06	400.0	1.24	1.16	1.15
450.0	3.51	3.49	0.02	21.69	0.12	450.0	1.27	1.18	1.16
500.0	3.53	3.51	0.02	21.71	0.09	500.0	1.30	1.19	1.18
550.0	3.57	3.56	0.01	20.48	0.11	550.0	1.33	1.21	1.19
600.0	3.60	3.57	0.03	20.59	0.19	600.0	1.36	1.22	1.20
650.0	3.64	3.61	0.03	19.63	0.11	650.0	1.39	1.24	1.22
700.0	3.67	3.66	0.01	19.47	0.23	700.0	1.42	1.25	1.23
750.0	3.68	3.64	0.04	19.22	0.26	750.0	1.45	1.27	1.25
800.0	3.77	3.75	0.02	18.45	0.12	800.0	1.48	1.28	1.26
850.0	3.73	3.69	0.04	19.03	0.44	850.0	1.51	1.30	1.28
900.0	3.83	3.79	0.04	17.61	0.24	900.0	1.54	1.31	1.30
950.0	3.80	3.77	0.03	18.79	0.43	950.0	1.58	1.33	1.32
1000.0	3.85	3.82	0.02	17.12	0.41	1000.0	1.61	1.35	1.34
1100.0	3.89	3.89	0.01	16.97	0.18	1100.0	1.67	1.39	1.37
1200.0	3.99	3.94	0.05	16.83	0.08	1200.0	1.73	1.42	1.41
1300.0	4.07	3.93	0.13	16.77	0.38	1300.0	1.79	1.46	1.45
1400.0	4.14	4.02	0.13	17.10	1.12	1400.0	1.84	1.49	1.49
1500.0	4.25	4.21	0.05	17.25	1.63	1500.0	1.87	1.51	1.51
1600.0	4.38	4.38	0.00	17.09	1.56	1600.0	1.89	1.52	1.53
1700.0	4.53	4.55	0.01	16.82	1.64	1700.0	1.90	1.53	1.54
1800.0	4.57	4.61	0.04	16.43	2.12	1800.0	1.88	1.52	1.54
1900.0	4.62	4.66	0.04	16.74	1.99	1900.0	1.84	1.50	1.52
2000.0	4.67	4.69	0.02	17.14	2.02	2000.0	1.77	1.48	1.49
2100.0	4.70	4.66	0.04	17.31	2.01	2100.0	1.68	1.44	1.45
2200.0	4.64	4.58	0.06	18.11	2.43	2200.0	1.59	1.39	1.40
2300.0	4.47	4.49	0.02	20.60	2.68	2300.0	1.48	1.34	1.35
2400.0	4.44	4.48	0.03	23.33	2.38	2400.0	1.37	1.28	1.29
2500.0	4.52	4.52	0.02	22.33	2.12	2500.0	1.26	1.23	1.25
2700.0	5.05	5.00	0.05	20.20	1.93	2700.0	1.02	1.18	1.20
2800.0	5.14	4.90	0.24	21.01	2.18	2800.0	1.09	1.24	1.25
3000.0	5.49	5.19	0.30	19.77	2.83	3000.0	1.11	1.36	1.32
3100.0	5.90	5.62	0.28	20.40	2.67	3100.0	1.20	1.44	1.36
3200.0	6.70	6.31	0.38	17.19	1.99	3200.0	1.34	1.51	1.40
3300.0	7.88	7.32	0.56	13.98	0.76	3300.0	1.56	1.55	1.40

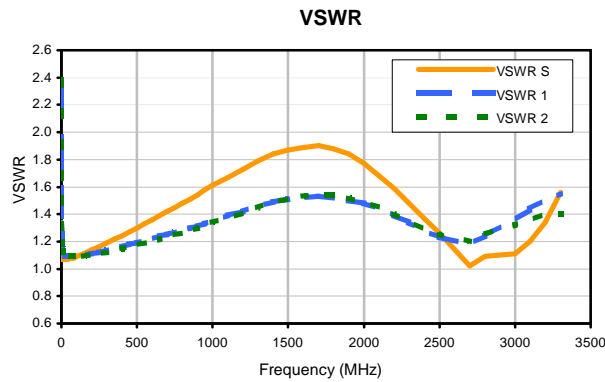
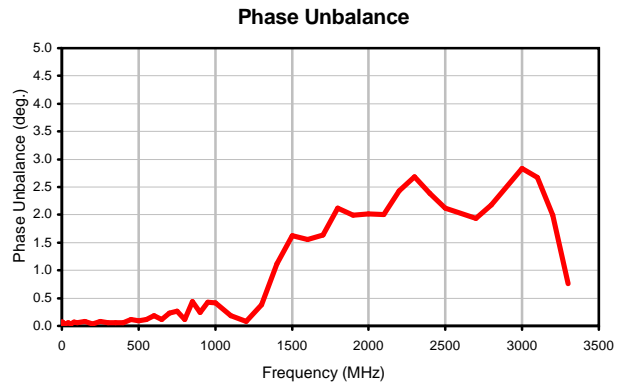
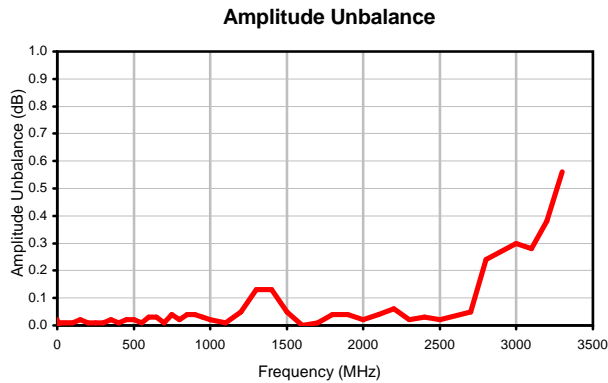
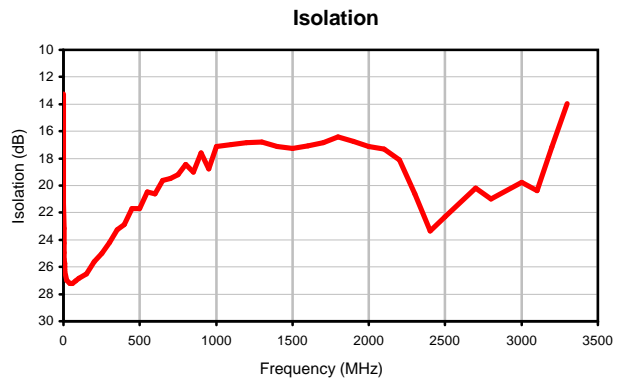
<sup>1</sup> Total Loss = Insertion Loss+ 3dB Splitter Loss



# 2 Way-0° Power Splitter/Combiner

# ZAPD-2-252+

## Typical Performance Curves



REV. X2  
ZAPD-2-252+  
100627  
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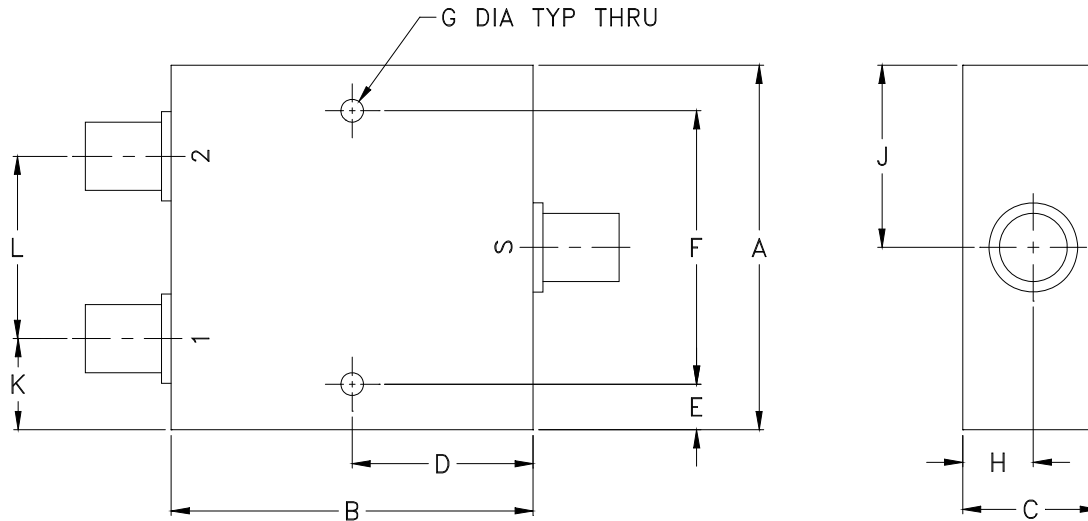
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### Outline Dimensions



CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
F14	2.00 (50.80)	2.00 (50.80)	.75 (19.05)	1.00 (25.40)	.25 (6.35)	1.500 (38.10)	.125 (3.18)	.39 (9.91)	1.00 (25.40)	.50 (12.70)	1.00 (25.40)	170.0

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

#### Notes:

- Case material: Aluminum alloy.
- Case finish:  
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Refer to the individual model data sheet for the type of connectors available.



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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