

Power Splitter/Combiner

ZAPD-23-S+

2 Way-0° 50Ω 700 to 2000 MHz

Maximum Ratings

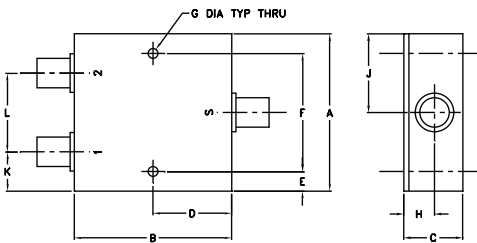
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	10W max.
Internal Dissipation	0.5W max.
DC Current	800 mA (400mA for each port)

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
2.00	1.75	0.75	0.875	0.13	1.750	0.125
50.80	44.45	19.05	22.23	3.30	44.45	3.18

H	J	K	L	wt
0.38	1.00	0.50	1.00	grams
9.65	25.40	12.70	25.40	65.0

Features

- wideband, 700 to 2000 MHz
- low insertion loss, 0.4 dB typ.
- good isolation, 27 dB typ.
- up to 10W power input as splitter
- excellent amplitude unbalance, 0.1 dB typ.
- excellent phase unbalance, 0.5 deg. typ.
- excellent VSWR, 1.15:1 typ.
- rugged shielded case

Applications

- UHF
- cellular
- GPS
- PCS/DCS

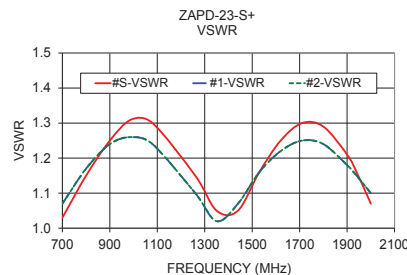
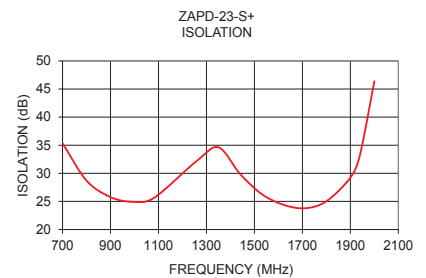
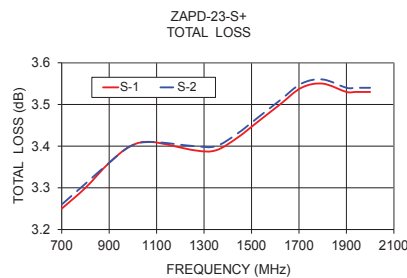
Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 3.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1)	
	Typ.	Min.	Typ.	Max.			S Typ.	OUT Typ.
f_L - f_U					Max.	Max.		
700-2000	27	20	0.4	0.8	2	0.2	1.15	1.15

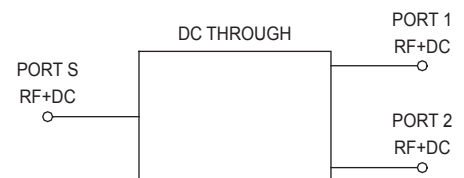
Typical Performance Data

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
700.00	3.25	3.26	0.01	35.36	0.22	1.03	1.07	1.07
800.00	3.30	3.31	0.01	28.70	0.25	1.15	1.17	1.16
900.00	3.36	3.36	0.01	25.77	0.32	1.25	1.24	1.23
990.00	3.40	3.40	0.01	24.94	0.37	1.31	1.26	1.25
1080.00	3.41	3.41	0.01	25.59	0.40	1.30	1.24	1.23
1260.00	3.39	3.40	0.01	32.22	0.47	1.15	1.10	1.10
1350.00	3.39	3.40	0.01	34.63	0.51	1.05	1.02	1.02
1440.00	3.42	3.43	0.01	29.90	0.54	1.05	1.07	1.07
1530.00	3.46	3.47	0.01	26.32	0.60	1.16	1.16	1.15
1620.00	3.50	3.51	0.01	24.42	0.62	1.25	1.22	1.21
1710.00	3.54	3.55	0.01	23.78	0.67	1.30	1.25	1.24
1800.00	3.55	3.56	0.01	25.03	0.71	1.29	1.24	1.23
1900.00	3.53	3.54	0.01	29.24	0.77	1.21	1.18	1.17
1940.00	3.53	3.54	0.01	33.27	0.79	1.16	1.15	1.14
2000.00	3.53	3.54	0.01	46.37	0.82	1.07	1.10	1.09

1. Total Loss = Insertion Loss + 3dB 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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Generic photo used for illustration purposes only

CASE STYLE: F1164

Connectors	Model
SMA	ZAPD-23-S+

+RoHS Compliant

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

2 Way-0° Power Splitter/Combiner

ZAPD-23+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)		AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
150.0	3.56	3.57	0.01	8.58	0.01	150.0	1.88	1.63	1.63
200.0	3.54	3.55	0.01	10.48	0.01	200.0	1.82	1.55	1.55
250.0	3.51	3.52	0.01	12.23	0.01	250.0	1.76	1.48	1.49
300.0	3.46	3.47	0.02	13.86	0.03	300.0	1.68	1.42	1.42
350.0	3.41	3.43	0.02	15.52	0.06	350.0	1.59	1.35	1.36
400.0	3.36	3.38	0.02	17.28	0.08	400.0	1.50	1.29	1.30
450.0	3.31	3.33	0.02	19.23	0.10	450.0	1.41	1.22	1.23
500.0	3.27	3.29	0.02	21.59	0.13	500.0	1.31	1.16	1.16
550.0	3.25	3.26	0.01	24.44	0.14	550.0	1.22	1.10	1.10
600.0	3.23	3.25	0.01	28.31	0.17	600.0	1.14	1.04	1.04
650.0	3.24	3.25	0.01	33.38	0.19	650.0	1.06	1.02	1.01
700.0	3.25	3.26	0.01	35.36	0.22	700.0	1.03	1.07	1.07
750.0	3.27	3.28	0.01	31.79	0.24	750.0	1.09	1.12	1.11
800.0	3.30	3.31	0.01	28.70	0.25	800.0	1.15	1.17	1.16
820.0	3.31	3.32	0.01	27.83	0.27	820.0	1.17	1.18	1.18
840.0	3.32	3.33	0.01	27.14	0.29	840.0	1.19	1.20	1.19
860.0	3.33	3.34	0.01	26.59	0.31	860.0	1.21	1.21	1.21
880.0	3.35	3.35	0.01	26.13	0.32	880.0	1.23	1.23	1.22
900.0	3.36	3.36	0.01	25.77	0.32	900.0	1.25	1.24	1.23
990.0	3.40	3.40	0.01	24.94	0.37	990.0	1.31	1.26	1.25
1080.0	3.41	3.41	0.01	25.59	0.40	1080.0	1.30	1.24	1.23
1170.0	3.40	3.41	0.01	27.88	0.43	1170.0	1.25	1.18	1.17
1260.0	3.39	3.40	0.01	32.22	0.47	1260.0	1.15	1.10	1.10
1350.0	3.39	3.40	0.01	34.63	0.51	1350.0	1.05	1.02	1.02
1440.0	3.42	3.43	0.01	29.90	0.54	1440.0	1.05	1.07	1.07
1530.0	3.46	3.47	0.01	26.32	0.60	1530.0	1.16	1.16	1.15
1620.0	3.50	3.51	0.01	24.42	0.62	1620.0	1.25	1.22	1.21
1710.0	3.54	3.55	0.01	23.78	0.67	1710.0	1.30	1.25	1.24
1800.0	3.55	3.56	0.01	25.03	0.71	1800.0	1.29	1.24	1.23
1850.0	3.54	3.55	0.01	26.42	0.75	1850.0	1.26	1.21	1.20
1900.0	3.53	3.54	0.01	29.24	0.77	1900.0	1.21	1.18	1.17
1920.0	3.53	3.54	0.01	31.00	0.77	1920.0	1.18	1.17	1.16
1940.0	3.53	3.54	0.01	33.27	0.79	1940.0	1.16	1.15	1.14
1960.0	3.53	3.54	0.01	36.52	0.80	1960.0	1.13	1.13	1.13
1980.0	3.53	3.54	0.01	42.34	0.81	1980.0	1.10	1.12	1.11
2000.0	3.53	3.54	0.01	46.37	0.82	2000.0	1.07	1.10	1.09
2200.0	3.68	3.70	0.02	19.33	0.89	2200.0	1.27	1.07	1.07
2400.0	4.09	4.11	0.02	12.79	0.87	2400.0	1.71	1.14	1.13
2600.0	4.38	4.39	0.01	10.27	0.93	2600.0	1.90	1.08	1.09
2800.0	4.32	4.34	0.02	9.85	1.14	2800.0	2.02	1.36	1.37
3000.0	4.26	4.29	0.03	11.41	1.33	3000.0	2.02	1.78	1.78

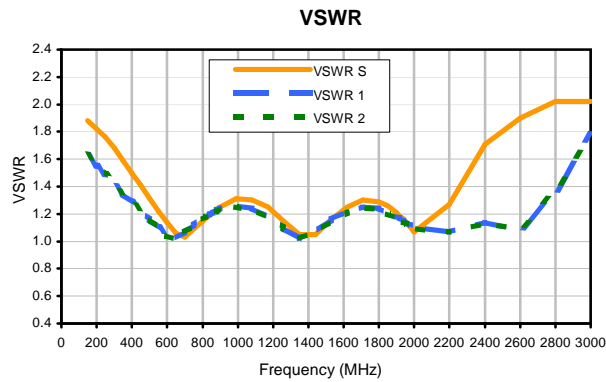
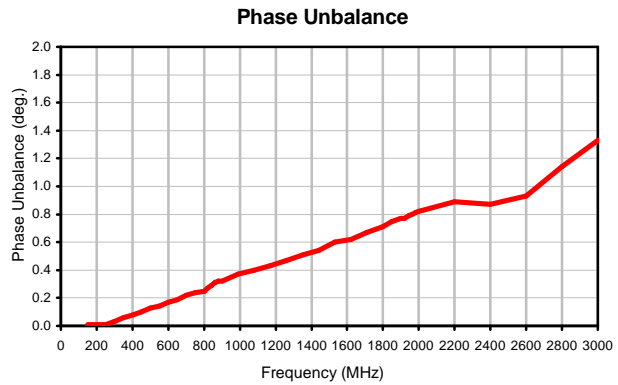
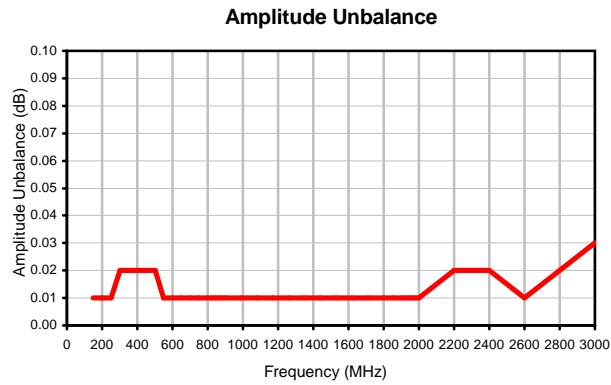
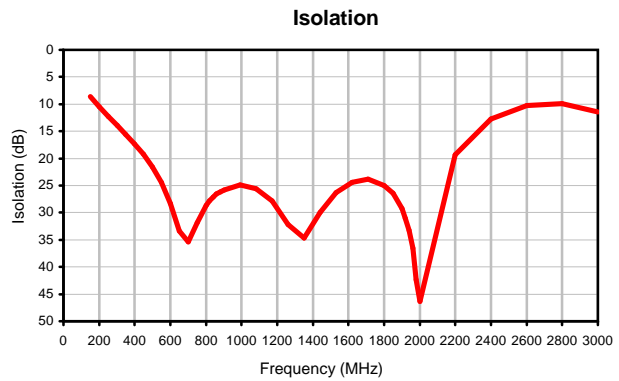
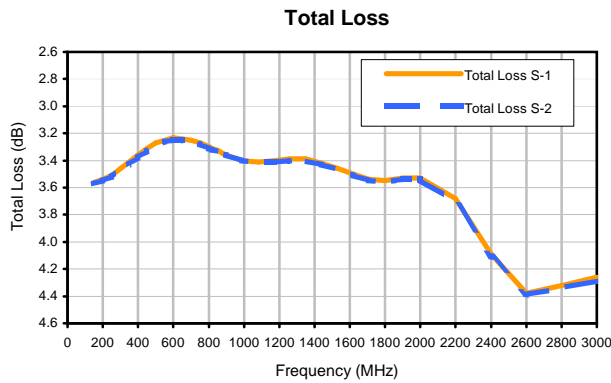
¹ Total Loss = Insertion Loss+ 3dB Splitter Loss



2 Way-0° Power Splitter/Combiner

ZAPD-23+

Typical Performance Curves



REV. X2
ZAPD-23+
100627
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Mini-Circuits®

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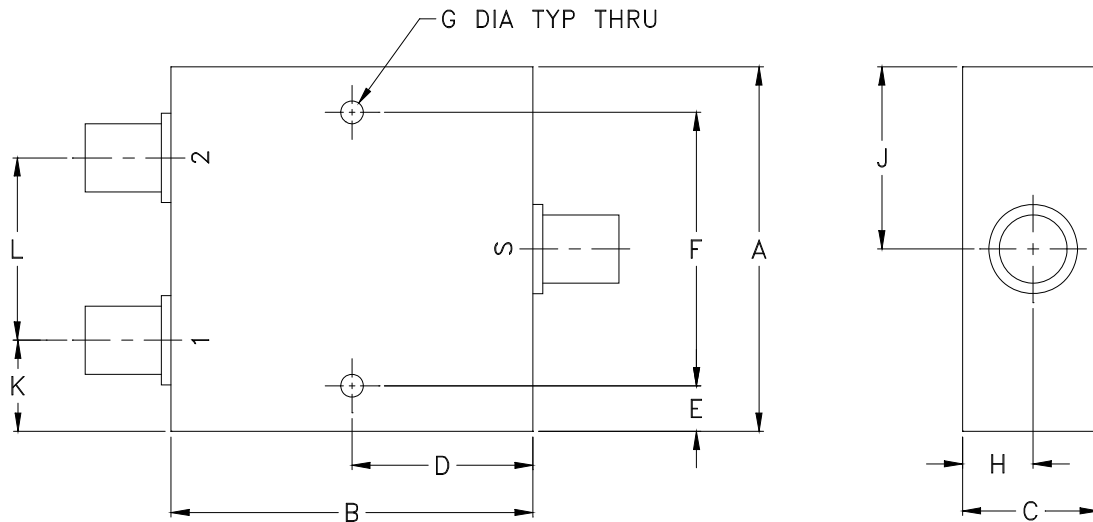


Case Style

F

Outline Dimensions

F1164



CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
F1164	2.00 (50.80)	1.75 (44.45)	0.75 (19.05)	0.875 (22.23)	0.13 (3.30)	1.750 (44.45)	0.125 (3.18)	0.38 (9.65)	1.00 (25.40)	0.50 (12.70)	1.00 (25.40)	65.00

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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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