NON-CATALOG

Coaxial

Power Splitter/Combiner

ZAPDQ-4

2 Way-90° 50Ω 2000 to 4200 MHz

SMA version shown

CASE STYLE: F14

Connectors	Model
N-TYPE	ZAPDQ-4-N
SMA	ZAPDQ-4-S

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	0.125W max.

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

Pin Connections

SUM PORT	S
PORT 1 (0°)	1
PORT 2 (+90°)	3

Features

- wideband, 2000 to 4200 MHz
- low insertion loss, 0.4 dB typ.
- good isolation, 22 dB typ.
- rugged shielded case

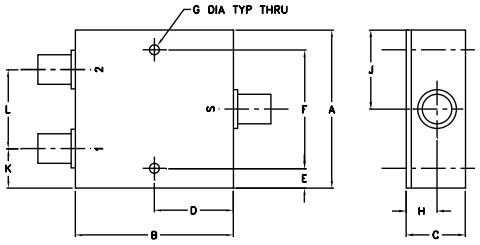
Applications

- balanced amplifiers
- modulators
- test set-ups

Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)
f_L-f_U	Typ.	Min.	Typ.	Max.	Max.	Max.
2000-4200	22	16	0.4	0.9	8.0	1.0

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

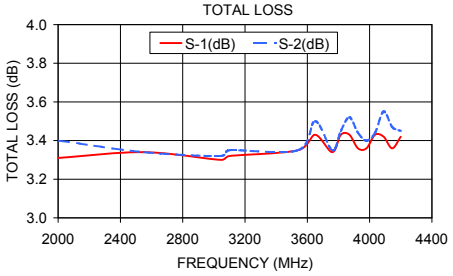
H	J	K	L	wt
0.39	1.00	0.50	1.00	grams
9.91	25.40	12.70	25.40	170.0

Typical Performance Data

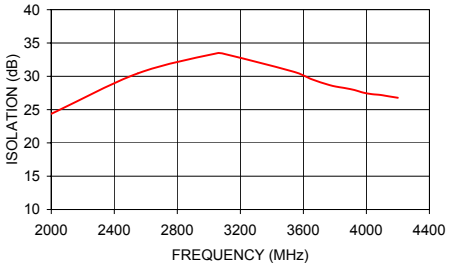
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
2000.00	3.31	3.40	0.08	24.36	85.56	1.30	1.10	1.19
2550.00	3.34	3.34	0.00	30.45	83.54	1.07	1.13	1.20
3045.00	3.30	3.32	0.02	33.42	83.38	1.10	1.23	1.17
3100.00	3.32	3.35	0.03	33.35	83.33	1.11	1.23	1.17
3540.00	3.35	3.35	0.00	30.67	84.52	1.22	1.29	1.13
3650.00	3.43	3.50	0.07	29.59	85.06	1.24	1.27	1.12
3760.00	3.34	3.35	0.01	28.73	85.25	1.25	1.26	1.11
3815.00	3.43	3.45	0.02	28.42	84.98	1.26	1.25	1.11
3870.00	3.43	3.52	0.08	28.20	85.45	1.26	1.25	1.11
3925.00	3.36	3.44	0.07	27.94	85.82	1.27	1.24	1.11
3980.00	3.36	3.40	0.04	27.55	86.03	1.27	1.24	1.11
4035.00	3.43	3.44	0.01	27.32	85.79	1.27	1.23	1.11
4090.00	3.42	3.55	0.13	27.20	85.95	1.27	1.23	1.11
4145.00	3.36	3.47	0.11	26.98	86.84	1.27	1.22	1.12
4200.00	3.42	3.45	0.03	26.77	87.16	1.27	1.21	1.13

1. Total Loss = Insertion Loss + 3dB splitter loss.

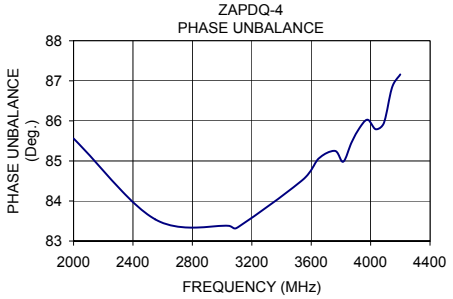
ZAPDQ-4
TOTAL LOSS



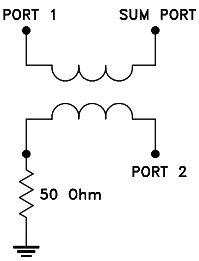
ZAPDQ-4
ISOLATION



ZAPDQ-4
PHASE UNBALANCE



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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REV. C
M160892
ZAPDQ-4
HY/TD/CP/AM
170808

2 Way-90° Power Splitter/Combiner ZAPDQ-4

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB)			AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2	AVG.					S	1	2
2000.0	3.31	3.40	3.36	0.08	24.36	85.56	2000.0	1.30	1.10	1.19
2055.0	3.28	3.32	3.30	0.04	24.90	85.28	2055.0	1.28	1.07	1.20
2110.0	3.36	3.37	3.37	0.01	25.47	84.84	2110.0	1.26	1.04	1.20
2165.0	3.34	3.41	3.38	0.07	26.03	84.27	2165.0	1.23	1.01	1.20
2220.0	3.26	3.33	3.30	0.07	26.59	84.33	2220.0	1.21	1.01	1.20
2275.0	3.31	3.36	3.34	0.05	27.25	84.37	2275.0	1.18	1.03	1.21
2330.0	3.34	3.35	3.35	0.00	27.84	83.91	2330.0	1.16	1.06	1.21
2385.0	3.30	3.33	3.32	0.03	28.50	83.73	2385.0	1.14	1.08	1.21
2440.0	3.26	3.34	3.30	0.08	29.06	83.65	2440.0	1.12	1.10	1.21
2495.0	3.33	3.36	3.35	0.03	29.79	83.83	2495.0	1.10	1.11	1.21
2550.0	3.34	3.34	3.34	0.00	30.45	83.54	2550.0	1.07	1.13	1.20
2605.0	3.28	3.30	3.29	0.02	30.97	83.26	2605.0	1.05	1.15	1.20
2660.0	3.28	3.35	3.32	0.06	31.60	83.42	2660.0	1.04	1.16	1.20
2715.0	3.32	3.36	3.34	0.05	32.16	83.43	2715.0	1.02	1.18	1.20
2770.0	3.36	3.36	3.36	0.00	32.70	83.47	2770.0	1.02	1.19	1.19
2825.0	3.28	3.30	3.29	0.02	32.99	83.09	2825.0	1.03	1.20	1.19
2880.0	3.29	3.33	3.31	0.04	33.28	83.28	2880.0	1.05	1.21	1.19
2935.0	3.33	3.40	3.37	0.06	33.53	83.36	2935.0	1.06	1.22	1.18
2990.0	3.39	3.41	3.40	0.03	33.67	83.60	2990.0	1.08	1.22	1.18
3045.0	3.30	3.32	3.31	0.02	33.42	83.38	3045.0	1.10	1.23	1.17
3100.0	3.32	3.35	3.34	0.03	33.35	83.33	3100.0	1.11	1.23	1.17
3155.0	3.34	3.44	3.39	0.10	33.23	83.29	3155.0	1.13	1.23	1.16
3210.0	3.37	3.44	3.41	0.07	33.09	83.82	3210.0	1.14	1.23	1.15
3265.0	3.31	3.39	3.35	0.07	32.97	83.91	3265.0	1.16	1.23	1.14
3320.0	3.31	3.38	3.35	0.07	33.38	83.83	3320.0	1.17	1.23	1.14
3375.0	3.33	3.48	3.41	0.15	35.36	84.28	3375.0	1.18	1.25	1.14
3430.0	3.40	3.49	3.45	0.08	34.97	85.05	3430.0	1.20	1.30	1.15
3485.0	3.42	3.40	3.41	0.02	31.90	84.81	3485.0	1.21	1.29	1.14
3540.0	3.35	3.35	3.35	0.00	30.67	84.52	3540.0	1.22	1.29	1.13
3595.0	3.41	3.46	3.44	0.04	29.99	84.46	3595.0	1.23	1.27	1.12
3650.0	3.43	3.50	3.47	0.07	29.59	85.06	3650.0	1.24	1.27	1.12
3705.0	3.43	3.44	3.44	0.01	29.27	85.24	3705.0	1.25	1.26	1.11
3760.0	3.34	3.35	3.35	0.01	28.73	85.25	3760.0	1.25	1.26	1.11
3815.0	3.43	3.45	3.44	0.02	28.42	84.98	3815.0	1.26	1.25	1.11
3870.0	3.43	3.52	3.48	0.08	28.20	85.45	3870.0	1.26	1.25	1.11
3925.0	3.36	3.44	3.40	0.07	27.94	85.82	3925.0	1.27	1.24	1.11
3980.0	3.36	3.40	3.38	0.04	27.55	86.03	3980.0	1.27	1.24	1.11
4035.0	3.43	3.44	3.44	0.01	27.32	85.79	4035.0	1.27	1.23	1.11
4090.0	3.42	3.55	3.49	0.13	27.20	85.95	4090.0	1.27	1.23	1.11
4145.0	3.36	3.47	3.42	0.11	26.98	86.84	4145.0	1.27	1.22	1.12
4200.0	3.42	3.45	3.44	0.03	26.77	87.16	4200.0	1.27	1.21	1.13

[1] Total Loss = Insertion Loss+ 3dB Splitter Loss

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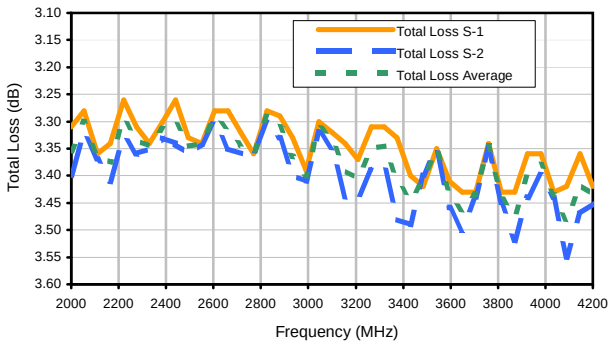
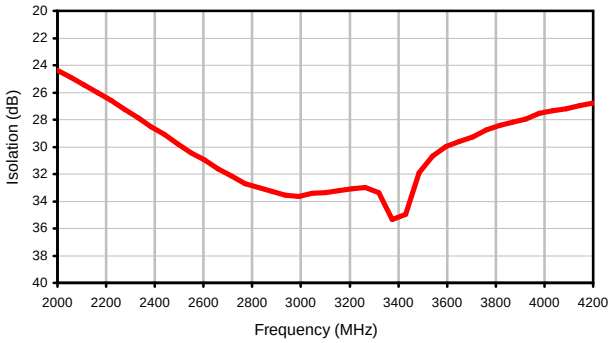
2 Way-90° Power Splitter/Combiner ZAPDQ-4

Typical Performance Curves

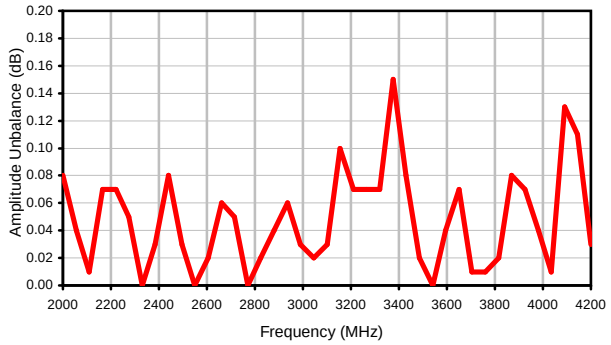
Total Loss



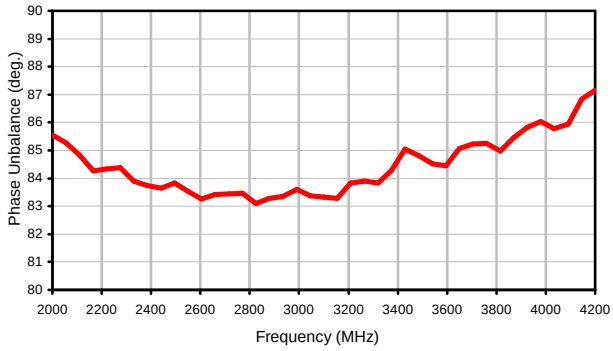
Isolation



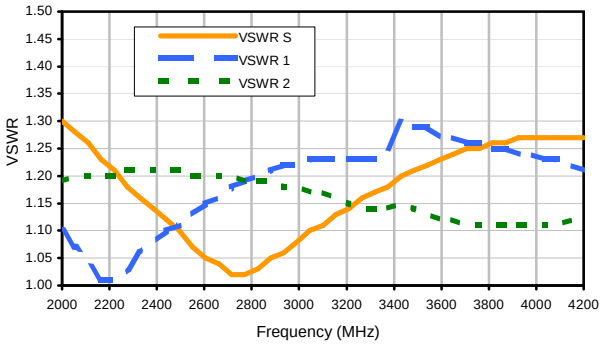
Amplitude Unbalance



Phase Unbalance



VSWR



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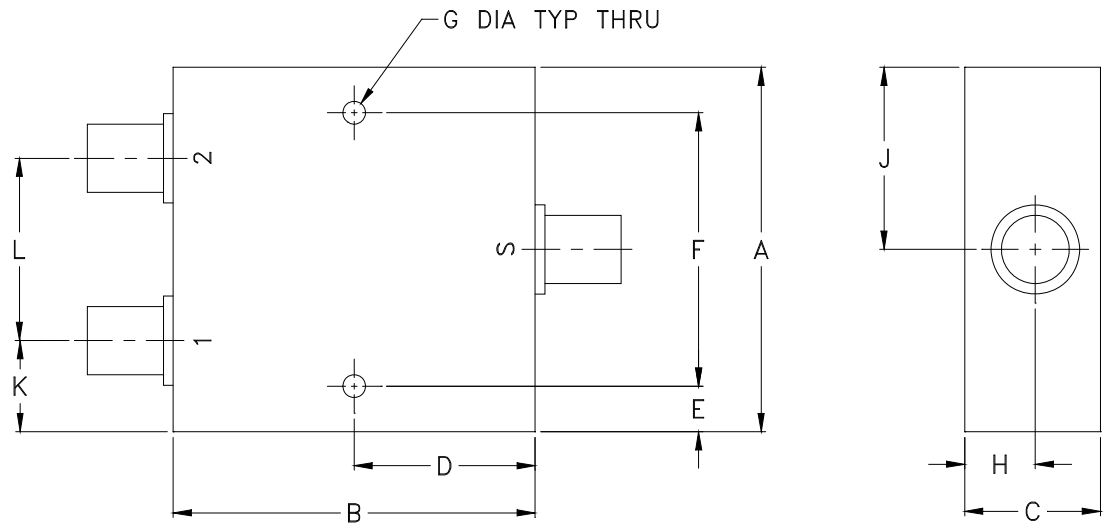
Case Style F

F14

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. ± .03; 3Pl. ± .015

Notes:

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

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Environmental Specifications ENV28

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

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

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