

Coaxial

# Power Splitter/Combiner

2 Way-90° 50Ω 1000 to 2000 MHz

## ZAPDQ-2



Generic photo used for illustration purposes only

SMA version shown  
CASE STYLE: F14

Connectors	Model
N-TYPE	ZAPDQ-2-N
SMA	ZAPDQ-2-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

- low insertion loss, 0.4 dB typ.
- good isolation, 22 dB typ.
- rugged shielded case

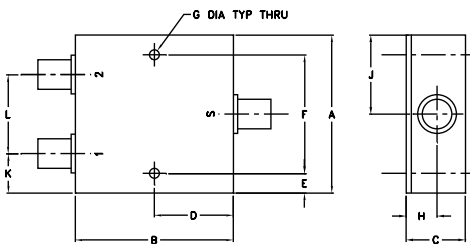
### Applications

- 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.
1000-2000	22 16	0.4 1.4	7.0	0.8

### Outline Drawing



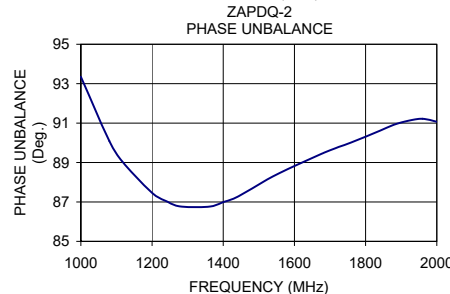
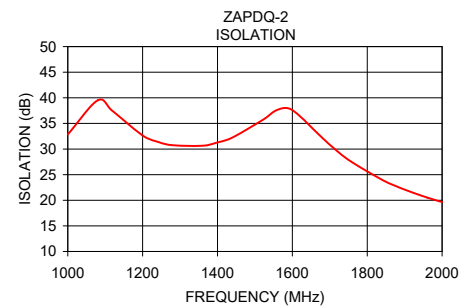
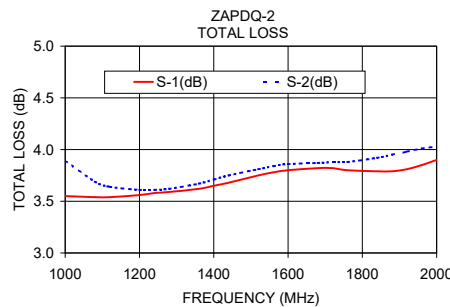
### Outline Dimensions (inch/mm)

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		

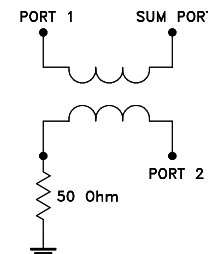
### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
1000.00	3.55	3.89	0.34	32.84	93.35	1.48	1.21	1.78
1080.00	3.54	3.69	0.15	39.51	90.09	1.32	1.20	1.50
1120.00	3.54	3.64	0.10	37.41	88.97	1.30	1.19	1.41
1200.00	3.56	3.61	0.05	32.65	87.46	1.27	1.18	1.33
1280.00	3.59	3.62	0.03	30.75	86.77	1.23	1.18	1.34
1360.00	3.62	3.67	0.05	30.65	86.76	1.27	1.19	1.41
1440.00	3.68	3.75	0.06	32.25	87.26	1.35	1.23	1.50
1520.00	3.75	3.81	0.06	35.64	88.10	1.34	1.28	1.56
1600.00	3.80	3.86	0.05	37.60	88.82	1.35	1.33	1.57
1680.00	3.82	3.87	0.05	32.19	89.47	1.34	1.36	1.52
1720.00	3.82	3.88	0.06	29.57	89.76	1.28	1.36	1.48
1840.00	3.79	3.92	0.14	23.99	90.61	1.11	1.29	1.39
1880.00	3.79	3.95	0.16	22.66	90.92	1.14	1.24	1.40
1920.00	3.81	3.98	0.16	21.53	91.12	1.22	1.19	1.42
2000.00	3.90	4.03	0.14	19.65	91.07	1.42	1.10	1.42

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.  
 C. The parts covered by this specification document are subject to Mini-Circuits 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-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



# 2 Way-90° Power Splitter/Combiner

# ZAPDQ-2

## Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS <sup>1</sup> (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB) 1-2	PHASE UNBAL (Deg.)	FREQUENCY (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
1000.0	3.55	3.89	0.34	32.84	93.35	1000.0	1.48	1.21	1.78
1080.0	3.54	3.69	0.15	39.51	90.09	1080.0	1.32	1.20	1.50
1120.0	3.54	3.64	0.10	37.41	88.97	1120.0	1.30	1.19	1.41
1200.0	3.56	3.61	0.05	32.65	87.46	1200.0	1.27	1.18	1.33
1240.0	3.58	3.61	0.03	31.41	87.04	1240.0	1.25	1.18	1.32
1280.0	3.59	3.62	0.03	30.75	86.77	1280.0	1.23	1.18	1.34
1360.0	3.62	3.67	0.05	30.65	86.76	1360.0	1.27	1.19	1.41
1400.0	3.65	3.71	0.06	31.29	86.99	1400.0	1.32	1.21	1.46
1440.0	3.68	3.75	0.06	32.25	87.26	1440.0	1.35	1.23	1.50
1520.0	3.75	3.81	0.06	35.64	88.10	1520.0	1.34	1.28	1.56
1560.0	3.78	3.84	0.06	37.65	88.48	1560.0	1.33	1.31	1.57
1600.0	3.80	3.86	0.05	37.60	88.82	1600.0	1.35	1.33	1.57
1680.0	3.82	3.87	0.05	32.19	89.47	1680.0	1.34	1.36	1.52
1720.0	3.82	3.88	0.06	29.57	89.76	1720.0	1.28	1.36	1.48
1760.0	3.80	3.88	0.08	27.40	90.02	1760.0	1.20	1.35	1.44
1840.0	3.79	3.92	0.14	23.99	90.61	1840.0	1.11	1.29	1.39
1880.0	3.79	3.95	0.16	22.66	90.92	1880.0	1.14	1.24	1.40
1920.0	3.81	3.98	0.16	21.53	91.12	1920.0	1.22	1.19	1.42
1960.0	3.85	4.01	0.16	20.53	91.22	1960.0	1.32	1.14	1.43
2000.0	3.90	4.03	0.14	19.65	91.07	2000.0	1.42	1.10	1.42

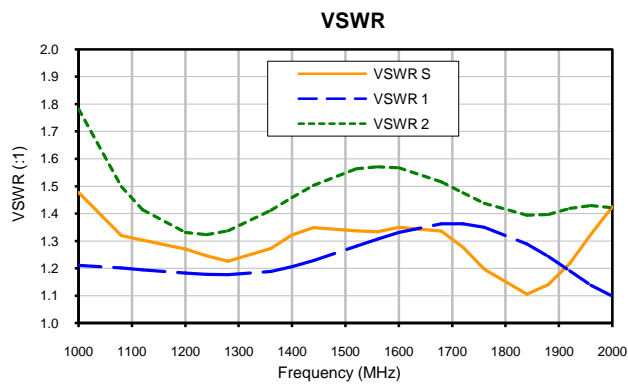
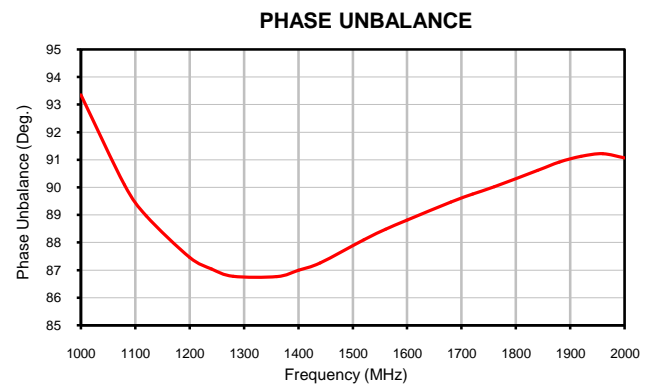
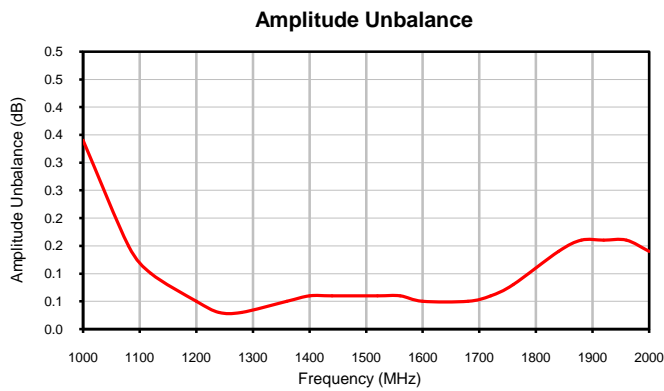
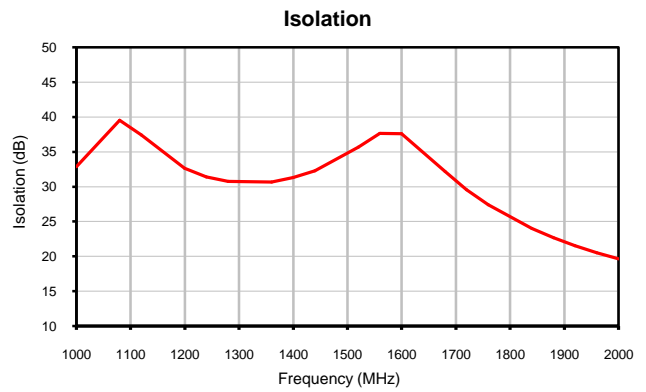
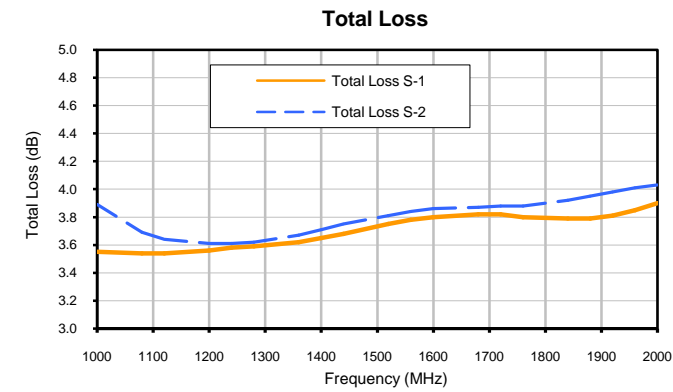
<sup>1</sup>Total Loss = Insertion Loss + 3dB Splitter Loss



# 2 Way-90° Power Splitter/Combiner

# ZAPDQ-2

## Typical Performance Curves



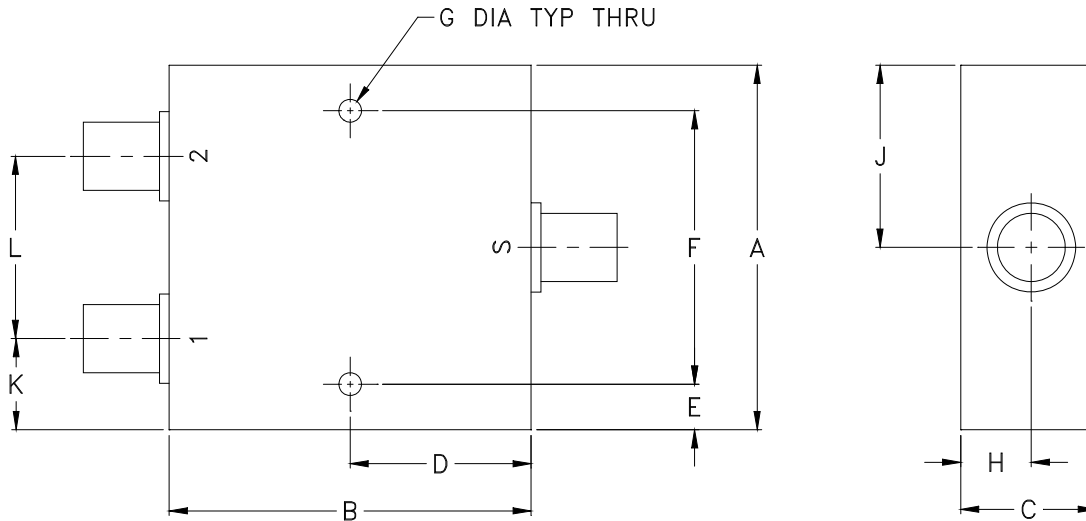
P.O. Box 350166, Brooklyn, New York 11235-0003 • (718) 934-4500 • Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site  
The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)



IF/RF MICROWAVE COMPONENTS

REV. OR  
ZAPDQ-2  
12/10/2012  
Page 1 of 1

### 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.



INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified



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.

<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