DC Pass, High Power

Power Splitter/Combiner ZC4PD-K0144+

4 Way-0° 50Ω 1000 to 40000 MHz

The Big Deal

- Super wideband, 1 to 40 GHz
- Low insertion loss, 1.8 dB typ.
- High Isolation, 33 dB typ.
- 20W power handling
- Low amplitude unbalance, 0.1 dB typ.

CASE STYLE: UU2413-2

Product Overview

Mini-Circuits' ZC4PD-K0144+ is a super wideband 4-way 0˚ splitter/combiner providing coverage from 1 to 40 GHz, supporting a wide range of applications including 5G, Ku-Band, K-Band, instrumentation and many more. This model provides 20W power handling as a splitter and very low insertion loss across the entire operating frequency range, minimizing power dissipation and delivering excellent signal power transmission from input to output. The ZC4PD-K0144+ comes housed in a case measuring 4.25 x 2.03 x 0.5".

Key Features

Feature	Advantages
Ultra-wideband, 1 to 40 GHz	Extremely wide frequency range supports many broadband applications in a single model.
Low insertion loss, 1.8 dB typ. at 22 GHz	The combination of 20W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
High isolation, 33 dB typ. at 22 GHz	Minimizes interference between ports.
High power handling: • 20W as a splitter at 25°C • 1.35W as a combiner	The ZC4PD-K0144+ is suitable for systems with a wide range of power requirements.
Low amplitude unbalance, 0.1 dB at 22 GHz	Produces nearly equal output signals, ideal for parallel path and multichannel systems.
DC Passing, 440mA	Supports applications where DC power is needed through the RF line.

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

DC Pass, High Power

Power Splitter/Combiner

ZC4PD-K0144+

4 Way-0° 50Ω 1000 to 40000 MHz

Generic photo used for illustration purposes only

CASE STYLE: UU2413-2

Connectors	Model
2.92mm Fem	ZC4PD-K0144+

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	20W* max.
Internal Dissipation	1.35W max.
DC Pass	530mA

Permanent damage may occur if any of these limits are exceeded.
*Derates linearly to 14W at 100°C

Coaxial Connections

Sum Port	S
Port 1	1
Port 2	2
Port 3	3
Port 4	4

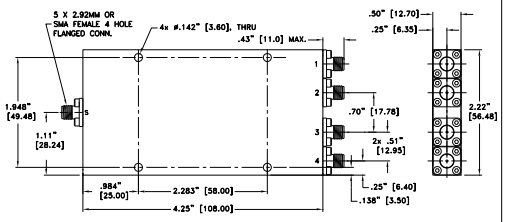
Features

- Super wideband, 1000 to 40000 MHz
- Low insertion loss, 1.8 dB typ.
- Low amplitude unbalance, 0.1 dB typ.
- Excellent VSWR, 1.13:1 typ.
- High isolation, 33 dB typ.

Applications

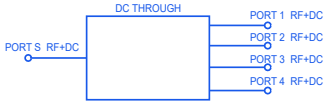
- 5G
- Fixed satellite
- Space research
- Mobile

Outline Drawing



Weight: 220 grams
Dimensions are in inches [mm]. Tolerances: 2 Pl.±.03; 3Pl.±.015

Electrical Schematic



Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1000		40000	MHz
Insertion Loss Above 6.0 dB	1000-8000		0.9	1.6	dB
	8000-18000		1.8	2.9	
	18000-26500		2.7	3.9	
	26500-40000		3.7	5.2	
Isolation	1000-8000	15	28		dB
	8000-18000	18	33		
	18000-26500	18	35		
	26500-40000	18	36		
Phase Unbalance (±)[1]	1000-8000		0.9	3	Degree
	8000-18000		1.5	4	
	18000-26500		2.3	6	
	26500-40000		3.2	7	
Amplitude Unbalance (±)[1]	1000-8000		0.13	0.5	dB
	8000-18000		0.10	0.3	
	18000-26500		0.15	0.4	
	26500-40000		0.22	0.5	
VSWR (Port S)	1000-8000		1.13	1.7	:1
	8000-18000		1.13	1.5	
	18000-26500		1.16	1.6	
	26500-40000		1.13	1.7	
VSWR (Port 1-4)	1000-8000		1.13	1.5	:1
	8000-18000		1.13	1.5	
	18000-26500		1.14	1.6	
	26500-40000		1.15	1.7	

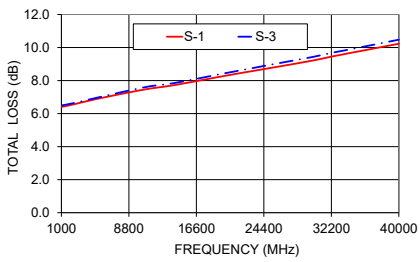
1. With reference to average

Typical Performance Data

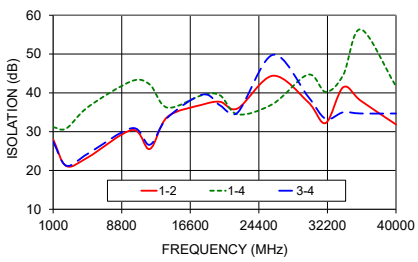
Freq. (MHz)	Total Loss[1] (dB)				Amp. Unb. (dB)	Isolation (dB)			Phase Unb. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	1-4	3-4						
1000	6.40	6.42	6.49	6.49	0.09	28.06	31.17	27.44	0.39	1.31	1.10	1.09	1.10	1.10
2500	6.57	6.61	6.65	6.65	0.08	21.14	30.84	21.24	0.37	1.18	1.31	1.31	1.32	1.32
5000	6.88	6.91	6.95	6.96	0.08	23.44	36.41	24.40	0.91	1.17	1.22	1.22	1.20	1.23
10000	7.40	7.46	7.53	7.54	0.13	30.44	43.08	30.92	1.73	1.24	1.23	1.23	1.24	1.24
12000	7.57	7.62	7.71	7.72	0.15	25.54	42.14	26.63	2.16	1.22	1.09	1.08	1.09	1.09
14000	7.72	7.77	7.84	7.86	0.14	33.81	36.19	33.59	2.48	1.13	1.05	1.05	1.02	1.02
18000	8.11	8.14	8.25	8.27	0.17	36.97	39.44	39.56	3.19	1.09	1.15	1.14	1.12	1.13
20000	8.30	8.33	8.45	8.47	0.17	37.69	39.34	36.75	3.40	1.10	1.11	1.12	1.09	1.08
22000	8.48	8.50	8.65	8.65	0.17	36.00	34.45	34.95	3.63	1.17	1.09	1.09	1.06	1.07
26000	8.84	8.84	9.04	9.02	0.20	44.42	37.15	49.81	4.24	1.08	1.10	1.12	1.13	1.13
30000	9.21	9.17	9.43	9.38	0.26	37.63	44.70	39.04	4.84	1.03	1.01	1.06	1.02	1.04
32000	9.43	9.37	9.65	9.59	0.28	32.23	40.25	33.33	5.06	1.12	1.18	1.21	1.15	1.15
34000	9.63	9.54	9.85	9.77	0.31	41.45	44.60	34.99	5.18	1.11	1.16	1.17	1.12	1.09
36000	9.83	9.72	10.06	9.96	0.34	37.96	56.37	34.68	5.31	1.06	1.12	1.12	1.08	1.06
40000	10.23	10.08	10.48	10.34	0.40	31.85	41.71	34.69	5.49	1.07	1.21	1.21	1.21	1.19

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

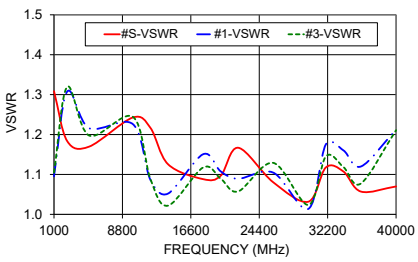
ZC4PD-K0144+
TOTAL LOSS



ZC4PD-K0144+
ISOLATION



ZC4PD-K0144+
VSWR



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4 Way-0° Power Splitter/Combiner ZC4PD-K0144+

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0 dBm @Temperature = +25°C

FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)				
	S-1	S-2	S-3	S-4			1-2	1-4	3-4	S	1	2	3	4
10	7.99	8.01	8.02	8.01	0.03	0.16	7.58	8.23	7.61	3.92	3.81	3.77	3.77	3.77
1000	6.40	6.42	6.49	6.49	0.09	0.39	28.06	31.17	27.44	1.31	1.10	1.09	1.10	1.10
2500	6.57	6.61	6.65	6.65	0.08	0.37	21.14	30.84	21.24	1.18	1.31	1.31	1.32	1.32
5000	6.88	6.91	6.95	6.96	0.08	0.91	23.44	36.41	24.40	1.17	1.22	1.22	1.20	1.23
6000	6.98	7.01	7.06	7.06	0.08	1.23	28.42	32.98	28.43	1.14	1.13	1.12	1.09	1.11
7000	7.06	7.09	7.17	7.16	0.12	1.29	36.92	37.72	31.35	1.11	1.10	1.10	1.10	1.10
7500	7.12	7.16	7.22	7.21	0.09	1.44	37.78	31.05	32.92	1.12	1.15	1.15	1.15	1.16
8000	7.18	7.22	7.29	7.29	0.11	1.54	38.53	33.22	34.85	1.18	1.07	1.06	1.07	1.08
8500	7.22	7.26	7.32	7.32	0.11	1.54	33.62	41.89	35.00	1.09	1.17	1.16	1.14	1.14
9000	7.29	7.33	7.42	7.42	0.12	1.55	26.65	36.14	28.78	1.22	1.15	1.14	1.13	1.14
9500	7.31	7.36	7.43	7.43	0.11	1.60	28.05	39.80	29.54	1.10	1.09	1.09	1.11	1.11
10000	7.40	7.46	7.53	7.54	0.13	1.73	30.44	43.08	30.92	1.24	1.23	1.23	1.24	1.24
10500	7.41	7.46	7.53	7.54	0.13	1.92	44.91	34.36	58.00	1.12	1.20	1.19	1.18	1.17
11000	7.50	7.54	7.63	7.64	0.14	1.90	40.99	32.09	46.15	1.24	1.17	1.15	1.16	1.14
11500	7.50	7.55	7.62	7.63	0.13	2.04	28.54	38.20	29.15	1.11	1.17	1.16	1.16	1.15
12000	7.57	7.62	7.71	7.72	0.15	2.16	25.54	42.14	26.63	1.22	1.09	1.08	1.09	1.09
12500	7.58	7.63	7.73	7.75	0.17	2.16	31.63	44.82	30.99	1.12	1.12	1.11	1.10	1.11
13000	7.64	7.69	7.78	7.80	0.16	2.21	34.60	37.87	33.71	1.18	1.11	1.10	1.08	1.09
13500	7.68	7.73	7.81	7.83	0.15	2.23	29.29	40.49	29.78	1.12	1.05	1.04	1.03	1.03
14000	7.72	7.77	7.84	7.86	0.14	2.48	33.81	36.19	33.59	1.13	1.05	1.05	1.02	1.02
14500	7.76	7.81	7.93	7.95	0.19	2.44	29.33	36.63	28.34	1.10	1.04	1.04	1.01	1.01
15000	7.81	7.86	7.94	7.96	0.15	2.47	30.91	36.53	30.98	1.11	1.06	1.05	1.06	1.06
15500	7.87	7.91	8.00	8.02	0.15	2.66	30.28	40.65	31.62	1.10	1.09	1.07	1.06	1.07
16000	7.90	7.95	8.05	8.07	0.16	2.85	32.10	43.58	33.43	1.13	1.13	1.12	1.11	1.12
16500	7.97	8.01	8.13	8.15	0.18	2.87	36.78	38.02	42.25	1.13	1.14	1.14	1.12	1.13
17000	8.00	8.04	8.17	8.18	0.19	2.83	30.35	46.31	32.19	1.12	1.08	1.07	1.09	1.10
17500	8.10	8.13	8.23	8.25	0.16	2.89	27.97	53.26	28.99	1.19	1.17	1.15	1.16	1.17
18000	8.11	8.14	8.25	8.27	0.17	3.19	36.97	39.44	39.56	1.09	1.15	1.14	1.12	1.13
18500	8.22	8.25	8.37	8.39	0.18	3.12	36.13	34.50	36.04	1.26	1.18	1.16	1.17	1.19
19000	8.20	8.23	8.36	8.37	0.17	3.17	40.00	40.41	35.34	1.02	1.18	1.16	1.16	1.16
19500	8.31	8.34	8.47	8.48	0.17	3.24	32.56	42.12	30.30	1.26	1.20	1.20	1.19	1.18
20000	8.30	8.33	8.45	8.47	0.17	3.40	37.69	39.34	36.75	1.10	1.11	1.12	1.09	1.08
20500	8.36	8.40	8.54	8.56	0.19	3.43	30.22	38.76	30.73	1.24	1.11	1.12	1.12	1.13
21000	8.39	8.42	8.56	8.57	0.18	3.51	27.37	44.13	29.10	1.16	1.04	1.04	1.03	1.04
21500	8.45	8.47	8.61	8.62	0.17	3.44	39.18	38.03	45.11	1.20	1.17	1.15	1.13	1.14
22000	8.48	8.50	8.65	8.65	0.17	3.63	36.00	34.45	34.95	1.17	1.09	1.09	1.06	1.07
23000	8.56	8.58	8.73	8.73	0.17	3.80	28.10	40.26	30.92	1.13	1.05	1.06	1.05	1.08
24000	8.65	8.66	8.83	8.83	0.19	4.08	28.25	35.31	28.74	1.07	1.15	1.15	1.16	1.17
25000	8.74	8.75	8.95	8.94	0.21	4.02	35.80	38.53	42.03	1.07	1.13	1.16	1.15	1.17
26000	8.84	8.84	9.04	9.02	0.20	4.24	44.42	37.15	49.81	1.08	1.10	1.12	1.13	1.13
26500	8.90	8.91	9.11	9.09	0.20	4.32	36.37	46.43	37.35	1.14	1.19	1.21	1.18	1.18
28000	9.02	9.00	9.23	9.20	0.22	4.61	33.56	47.15	40.59	1.11	1.05	1.08	1.06	1.05
29000	9.11	9.08	9.32	9.29	0.25	4.69	43.36	40.24	41.91	1.05	1.03	1.06	1.07	1.08
30000	9.21	9.17	9.43	9.38	0.26	4.84	37.63	44.70	39.04	1.03	1.01	1.06	1.02	1.04
31000	9.33	9.27	9.54	9.49	0.27	4.89	37.52	51.71	42.20	1.06	1.08	1.12	1.09	1.11
32000	9.43	9.37	9.65	9.59	0.28	5.06	32.23	40.25	33.33	1.12	1.18	1.21	1.15	1.15
33000	9.53	9.45	9.75	9.68	0.30	5.12	33.27	42.09	33.98	1.10	1.08	1.11	1.08	1.09
34000	9.63	9.54	9.85	9.77	0.31	5.18	41.45	44.60	34.99	1.11	1.16	1.17	1.12	1.09
35000	9.75	9.64	9.96	9.87	0.32	5.32	37.87	37.66	44.50	1.11	1.20	1.17	1.17	1.14
36000	9.83	9.72	10.06	9.96	0.34	5.31	37.96	56.37	34.68	1.06	1.12	1.12	1.08	1.06
37000	9.92	9.80	10.15	10.04	0.35	5.26	32.31	37.79	34.73	1.07	1.16	1.17	1.15	1.13
38000	10.02	9.89	10.25	10.13	0.36	5.32	33.16	46.04	35.91	1.07	1.14	1.15	1.14	1.11
39000	10.13	10.01	10.35	10.23	0.35	5.40	44.41	39.75	38.00	1.09	1.19	1.20	1.16	1.15
40000	10.23	10.08	10.48	10.34	0.40	5.49	31.85	41.71	34.69	1.07	1.21	1.21	1.21	1.19
41000	10.31	10.17	10.57	10.43	0.40	5.39	30.67	40.23	29.78	1.09	1.18	1.22	1.21	1.19
42000	10.41	10.25	10.67	10.50	0.41	5.58	41.56	40.77	43.49	1.08	1.12	1.18	1.17	1.14
43000	10.50	10.34	10.76	10.60	0.42	5.64	33.21	43.84	36.69	1.11	1.13	1.18	1.13	1.13

[1]Total Loss = Insertion Loss + 6dB Splitter Loss

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0 dBm @Temperature = -55°C

FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)				
	S-1	S-2	S-3	S-4			1-2	1-4	3-4	S	1	2	3	4
10	7.98	7.97	8.00	7.98	0.04	0.05	7.61	8.21	7.62	3.92	3.79	3.79	3.72	3.78
1000	6.41	6.40	6.29	6.42	0.12	0.09	28.44	31.90	27.83	1.33	1.11	1.11	1.12	1.12
2500	6.57	6.57	6.37	6.57	0.20	0.33	21.56	31.16	21.64	1.22	1.34	1.34	1.45	1.37
5000	6.83	6.83	6.74	6.85	0.11	0.63	23.07	36.86	23.95	1.18	1.22	1.23	1.18	1.21
6000	6.91	6.92	6.86	6.95	0.10	0.79	28.00	32.85	28.01	1.17	1.13	1.12	1.11	1.12
7000	6.98	6.99	6.97	7.04	0.07	0.81	32.76	37.74	29.55	1.14	1.12	1.12	1.10	1.11
7500	7.03	7.06	7.03	7.10	0.07	0.97	36.41	30.63	32.08	1.14	1.15	1.15	1.17	1.17
8000	7.08	7.11	7.10	7.17	0.09	1.02	37.90	32.71	35.59	1.20	1.08	1.07	1.09	1.09
8500	7.12	7.15	7.14	7.21	0.09	1.11	35.86	39.77	37.38	1.13	1.19	1.18	1.17	1.16
9000	7.18	7.21	7.23	7.30	0.12	1.04	27.46	35.26	29.79	1.24	1.17	1.16	1.14	1.15
9500	7.20	7.24	7.25	7.31	0.11	1.10	27.28	38.15	28.63	1.13	1.12	1.11	1.13	1.12
10000	7.28	7.32	7.35	7.41	0.13	1.27	28.87	42.72	29.72	1.26	1.23	1.22	1.23	1.23
10500	7.28	7.32	7.36	7.42	0.14	1.28	37.64	34.49	41.59	1.13	1.19	1.18	1.16	1.16
11000	7.37	7.41	7.46	7.52	0.15	1.25	40.92	31.92	43.86	1.26	1.19	1.17	1.18	1.17
11500	7.35	7.39	7.45	7.51	0.15	1.46	29.08	37.54	29.56	1.12	1.20	1.18	1.19	1.18
12000	7.43	7.48	7.54	7.61	0.17	1.46	25.41	41.08	26.73	1.25	1.11	1.09	1.11	1.11
12500	7.42	7.46	7.55	7.61	0.19	1.41	31.28	43.77	30.72	1.12	1.13	1.12	1.11	1.12
13000	7.49	7.53	7.61	7.67	0.18	1.38	33.76	37.25	33.42	1.20	1.13	1.12	1.09	1.09
13500	7.51	7.56	7.64	7.69	0.18	1.41	30.60	40.22	30.92	1.12	1.05	1.04	1.03	1.03
14000	7.55	7.59	7.68	7.73	0.18	1.58	37.54	36.90	36.68	1.15	1.08	1.07	1.05	1.05
14500	7.58	7.62	7.75	7.79	0.22	1.66	30.34	36.89	28.71	1.09	1.07	1.07	1.06	1.05
15000	7.62	7.67	7.77	7.81	0.19	1.70	29.89	35.88	30.11	1.10	1.03	1.02	1.04	1.04
15500	7.67	7.71	7.82	7.87	0.20	1.83	29.43	40.01	30.41	1.08	1.06	1.05	1.04	1.05
16000	7.71	7.74	7.87	7.92	0.21	1.91	31.73	43.17	33.17	1.10	1.13	1.12	1.10	1.12
16500	7.75	7.79	7.93	7.98	0.23	2.05	33.68	37.33	36.20	1.06	1.12	1.12	1.09	1.11
17000	7.80	7.84	7.99	8.03	0.23	2.12	31.45	46.27	33.23	1.14	1.08	1.07	1.08	1.10
17500	7.87	7.89	8.03	8.08	0.21	2.25	28.05	54.14	29.37	1.10	1.12	1.10	1.09	1.11
18000	7.90	7.92	8.08	8.13	0.23	2.18	33.19	38.50	35.05	1.14	1.13	1.12	1.10	1.12
18500	7.97	7.99	8.15	8.20	0.23	2.40	40.39	34.24	38.83	1.16	1.16	1.15	1.13	1.15
19000	7.99	8.01	8.17	8.21	0.21	2.43	40.24	41.21	34.69	1.10	1.18	1.17	1.16	1.16
19500	8.08	8.10	8.27	8.30	0.22	2.47	39.37	41.25	34.32	1.21	1.19	1.19	1.18	1.16
20000	8.06	8.08	8.24	8.27	0.21	2.53	52.84	39.21	46.87	1.03	1.09	1.10	1.08	1.08
20500	8.15	8.17	8.34	8.37	0.22	2.62	32.67	38.03	32.62	1.22	1.09	1.12	1.11	1.11
21000	8.15	8.15	8.33	8.36	0.22	2.60	32.96	45.41	33.69	1.07	1.07	1.04	1.05	1.07
21500	8.23	8.23	8.41	8.43	0.20	2.68	39.97	37.13	39.84	1.21	1.19	1.19	1.16	1.16
22000	8.22	8.23	8.41	8.43	0.21	2.72	32.35	34.47	33.51	1.13	1.06	1.08	1.05	1.06
23000	8.31	8.32	8.51	8.53	0.22	2.85	29.15	40.22	30.80	1.18	1.10	1.10	1.10	1.13
24000	8.41	8.41	8.63	8.64	0.23	3.08	29.00	35.44	29.57	1.22	1.20	1.21	1.22	1.22
25000	8.48	8.48	8.70	8.70	0.23	3.37	28.61	37.91	33.06	1.15	1.12	1.13	1.13	1.14
26000	8.55	8.53	8.78	8.76	0.24	3.51	34.79	37.35	35.11	1.11	1.15	1.16	1.15	1.15
26500	8.64	8.63	8.86	8.85	0.23	3.48	41.96	51.20	37.82	1.25	1.24	1.27	1.22	1.21
28000	8.68	8.65	8.92	8.90	0.27	3.74	41.23	47.61	42.64	1.04	1.04	1.08	1.06	1.04
29000	8.76	8.72	9.00	8.97	0.27	4.01	38.00	40.03	34.11	1.04	1.04	1.08	1.05	1.06
30000	8.84	8.80	9.10	9.06	0.30	4.27	38.22	45.00	42.66	1.05	1.02	1.05	1.02	1.03
31000	8.94	8.88	9.19	9.14	0.31	4.49	33.11	48.81	42.66	1.03	1.05	1.10	1.07	1.09
32000	9.04	8.98	9.31	9.24	0.33	4.71	34.04	39.55	40.51	1.10	1.16	1.16	1.09	1.10
33000	9.16	9.07	9.41	9.34	0.34	4.90	31.25	39.98	34.43	1.14	1.11	1.12	1.08	1.09
34000	9.27	9.17	9.54	9.45	0.37	5.04	36.66	42.45	33.84	1.19	1.19	1.18	1.13	1.11
35000	9.40	9.28	9.66	9.56	0.38	5.07	42.03	35.68	55.47	1.27	1.21	1.18	1.19	1.16
36000	9.45	9.33	9.72	9.62	0.39	5.30	32.21	46.97	29.30	1.24	1.17	1.17	1.14	1.12
37000	9.51	9.39	9.78	9.68	0.39	5.53	32.02	35.68	34.44	1.23	1.18	1.17	1.15	1.14
38000	9.60	9.47	9.87	9.75	0.41	5.82	35.18	41.06	40.16	1.23	1.20	1.19	1.17	1.15
39000	9.69	9.56	9.97	9.84	0.41	6.01	36.35	38.64	57.91	1.25	1.21	1.21	1.18	1.17
40000	9.80	9.65	10.08	9.94	0.43	6.22	31.24	38.38	37.62	1.26	1.26	1.25	1.25	1.23
41000	9.89	9.75	10.19	10.04	0.44	6.38	31.03	40.86	29.24	1.33	1.25	1.29	1.28	1.26
42000	9.97	9.81	10.28	10.12	0.47	6.73	36.03	38.91	37.93	1.30	1.19	1.25	1.25	1.22
43000	10.05	9.88	10.36	10.19	0.48	7.04	30.84	48.40	31.11	1.30	1.22	1.27	1.24	1.23

[1]Total Loss = Insertion Loss + 6dB Splitter Loss

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0 dBm @Temperature = +100°C

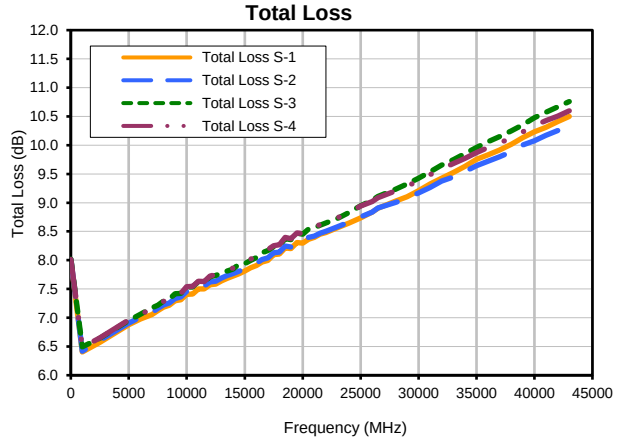
FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP. UNBAL. (dB)	PHASE UNBAL. (deg.)	ISOLATION (dB)			VSWR (:1)				
	S-1	S-2	S-3	S-4			1-2	1-4	3-4	S	1	2	3	4
10	8.01	8.02	8.04	8.03	0.03	0.24	7.57	8.28	7.60	3.91	3.77	3.75	3.75	3.76
1000	6.43	6.44	6.41	6.41	0.03	0.49	25.73	39.40	27.00	1.30	1.15	1.15	1.15	1.14
2500	6.60	6.63	6.60	6.59	0.04	0.64	19.80	30.33	20.33	1.16	1.32	1.32	1.33	1.31
5000	6.92	6.95	6.94	6.92	0.03	1.25	22.63	34.74	23.78	1.16	1.21	1.21	1.19	1.22
6000	7.02	7.06	7.05	7.02	0.04	1.35	26.76	32.11	27.49	1.11	1.13	1.12	1.09	1.12
7000	7.10	7.14	7.16	7.13	0.06	1.50	64.08	40.89	35.36	1.09	1.08	1.08	1.08	1.08
7500	7.16	7.21	7.22	7.19	0.06	1.57	42.53	32.09	34.54	1.08	1.13	1.13	1.14	1.14
8000	7.23	7.28	7.29	7.26	0.06	1.72	35.79	33.01	33.65	1.17	1.08	1.08	1.08	1.08
8500	7.26	7.31	7.33	7.30	0.06	1.65	33.69	42.68	35.22	1.06	1.14	1.14	1.13	1.12
9000	7.35	7.40	7.41	7.39	0.06	1.81	26.07	36.08	28.37	1.20	1.14	1.13	1.12	1.14
9500	7.37	7.42	7.44	7.42	0.07	1.81	29.47	39.94	30.30	1.09	1.07	1.08	1.10	1.09
10000	7.46	7.52	7.55	7.52	0.08	1.86	30.96	43.59	30.95	1.23	1.20	1.21	1.23	1.22
10500	7.48	7.54	7.55	7.53	0.06	2.04	51.01	34.99	50.14	1.12	1.21	1.20	1.19	1.19
11000	7.56	7.61	7.63	7.62	0.07	2.06	47.54	32.24	50.71	1.21	1.14	1.12	1.14	1.12
11500	7.57	7.62	7.65	7.63	0.08	2.18	28.89	38.37	29.22	1.10	1.15	1.14	1.14	1.14
12000	7.63	7.69	7.71	7.70	0.08	2.17	25.88	42.08	26.95	1.17	1.06	1.05	1.07	1.08
12500	7.66	7.72	7.75	7.75	0.09	2.29	33.23	45.64	31.79	1.11	1.11	1.10	1.10	1.10
13000	7.71	7.76	7.79	7.79	0.08	2.27	36.06	38.34	35.03	1.13	1.10	1.09	1.07	1.08
13500	7.76	7.82	7.85	7.84	0.08	2.34	29.62	41.13	29.86	1.12	1.06	1.05	1.04	1.03
14000	7.80	7.85	7.88	7.89	0.09	2.45	31.93	35.79	32.12	1.09	1.03	1.03	1.01	1.01
14500	7.85	7.90	7.94	7.94	0.09	2.53	29.06	36.44	28.41	1.11	1.02	1.02	1.01	1.02
15000	7.90	7.95	7.98	7.98	0.08	2.55	32.95	37.07	32.45	1.11	1.07	1.07	1.07	1.07
15500	7.97	8.02	8.05	8.05	0.08	2.68	32.32	41.23	33.10	1.14	1.11	1.09	1.08	1.09
16000	8.00	8.04	8.08	8.09	0.09	2.73	32.80	43.60	34.08	1.12	1.12	1.12	1.10	1.11
16500	8.08	8.13	8.16	8.16	0.08	2.81	36.43	38.81	42.37	1.19	1.14	1.15	1.13	1.14
17000	8.10	8.14	8.19	8.20	0.10	2.86	30.07	46.31	31.96	1.10	1.06	1.06	1.07	1.08
17500	8.20	8.24	8.28	8.28	0.08	2.93	28.26	51.06	28.96	1.24	1.18	1.16	1.17	1.18
18000	8.21	8.25	8.29	8.30	0.08	3.07	41.64	40.60	42.72	1.06	1.17	1.15	1.13	1.14
18500	8.32	8.36	8.40	8.40	0.08	3.12	34.60	35.28	35.13	1.29	1.17	1.16	1.16	1.18
19000	8.32	8.35	8.40	8.40	0.08	3.23	41.69	40.05	37.64	1.10	1.17	1.15	1.15	1.16
19500	8.39	8.43	8.49	8.49	0.10	3.30	31.57	44.81	29.97	1.23	1.18	1.17	1.17	1.16
20000	8.43	8.47	8.50	8.50	0.08	3.35	32.62	40.59	33.57	1.17	1.13	1.14	1.10	1.09
20500	8.45	8.49	8.56	8.56	0.10	3.43	31.15	40.44	31.36	1.17	1.10	1.12	1.11	1.12
21000	8.53	8.56	8.62	8.62	0.09	3.43	26.19	43.80	28.10	1.22	1.07	1.09	1.07	1.07
21500	8.54	8.56	8.65	8.64	0.10	3.61	32.79	39.34	37.81	1.12	1.13	1.11	1.09	1.11
22000	8.62	8.64	8.71	8.70	0.09	3.68	40.22	34.81	36.59	1.22	1.11	1.12	1.07	1.08
23000	8.69	8.72	8.79	8.78	0.09	3.87	29.21	40.85	32.07	1.17	1.06	1.09	1.05	1.08
24000	8.79	8.81	8.88	8.87	0.09	4.08	29.91	36.18	29.72	1.15	1.13	1.15	1.14	1.15
25000	8.89	8.90	9.00	8.99	0.11	4.14	37.03	39.77	37.10	1.18	1.15	1.18	1.15	1.17
26000	8.99	9.00	9.09	9.07	0.10	4.27	39.86	38.17	51.35	1.16	1.09	1.12	1.11	1.11
26500	9.02	9.03	9.14	9.11	0.11	4.40	32.71	44.50	36.56	1.05	1.13	1.17	1.13	1.13
28000	9.17	9.15	9.27	9.23	0.12	4.56	32.09	47.45	37.81	1.08	1.06	1.09	1.07	1.05
29000	9.25	9.22	9.37	9.33	0.15	4.71	34.67	41.92	36.29	1.02	1.02	1.03	1.05	1.07
30000	9.37	9.33	9.48	9.43	0.15	4.85	36.11	43.79	36.26	1.06	1.02	1.04	1.01	1.04
31000	9.48	9.43	9.60	9.54	0.17	5.05	39.73	56.45	38.41	1.09	1.07	1.07	1.08	1.09
32000	9.57	9.53	9.68	9.62	0.16	5.18	28.67	40.36	30.35	1.10	1.13	1.17	1.11	1.13
33000	9.68	9.61	9.78	9.71	0.18	5.38	34.83	43.72	35.93	1.05	1.08	1.11	1.06	1.07
34000	9.79	9.71	9.91	9.83	0.20	5.52	48.22	45.17	38.89	1.03	1.11	1.12	1.08	1.05
35000	9.92	9.81	10.01	9.91	0.20	5.71	35.12	39.51	41.19	1.04	1.19	1.18	1.15	1.13
36000	10.02	9.91	10.14	10.03	0.22	5.97	44.70	55.82	41.29	1.09	1.15	1.14	1.10	1.08
37000	10.10	9.99	10.20	10.09	0.21	6.18	33.54	39.87	35.62	1.10	1.14	1.15	1.13	1.12
38000	10.22	10.09	10.33	10.20	0.24	6.35	40.50	54.18	39.01	1.12	1.18	1.19	1.17	1.13
39000	10.33	10.20	10.43	10.29	0.22	6.54	39.85	40.70	38.81	1.14	1.16	1.17	1.14	1.14
40000	10.45	10.30	10.55	10.41	0.25	6.74	42.05	47.16	42.06	1.16	1.26	1.26	1.23	1.20
41000	10.55	10.42	10.65	10.49	0.23	6.90	37.65	39.64	34.50	1.23	1.20	1.26	1.24	1.22
42000	10.67	10.52	10.77	10.60	0.25	7.01	33.26	42.59	35.83	1.23	1.14	1.22	1.19	1.16
43000	10.79	10.63	10.87	10.70	0.24	7.06	40.76	41.57	39.97	1.26	1.19	1.26	1.19	1.18

[1]Total Loss = Insertion Loss + 6dB Splitter Loss

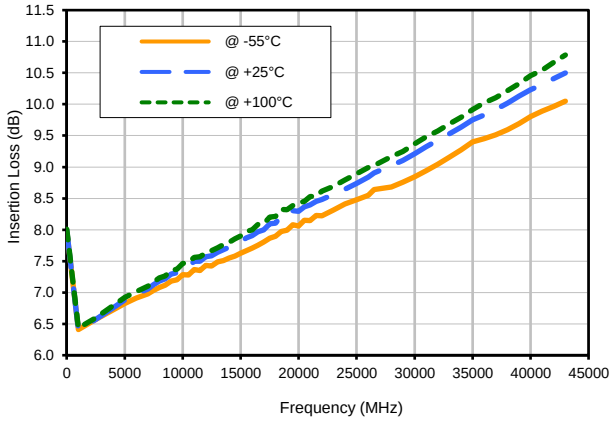
4 Way-0° Power Splitter/Combiner ZC4PD-K0144+

Typical Performance Curves

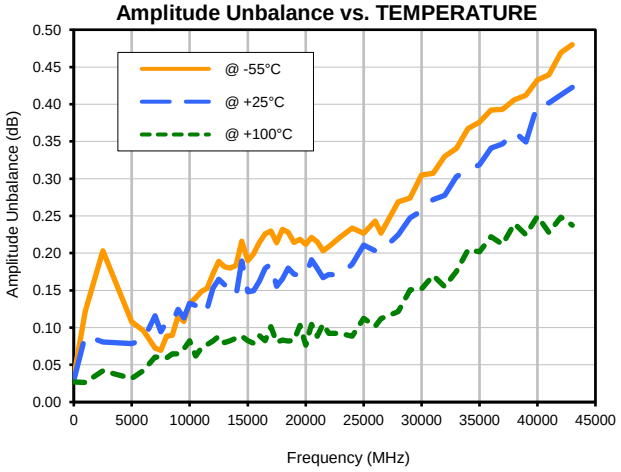
Total Loss



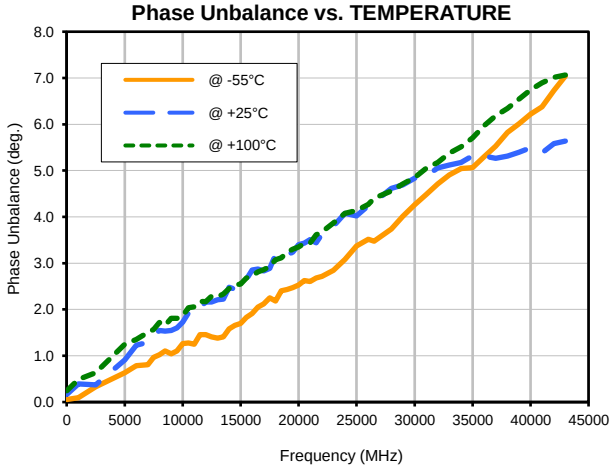
Total Loss S-1 vs. TEMPERATURE



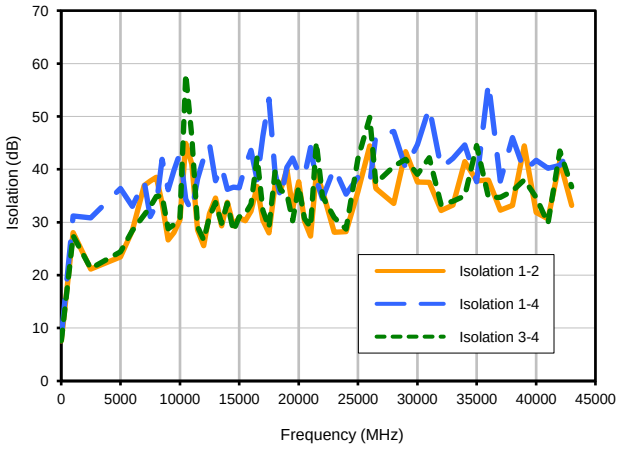
Amplitude Unbalance vs. TEMPERATURE



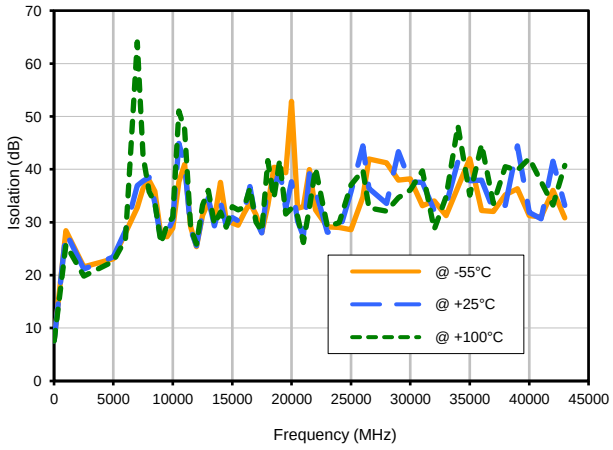
Phase Unbalance vs. TEMPERATURE



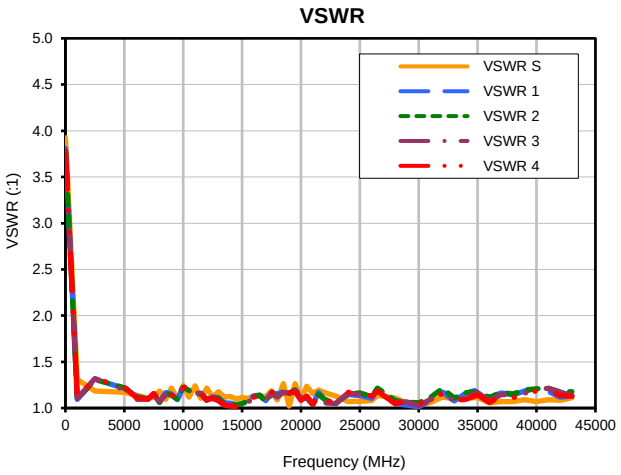
Isolation

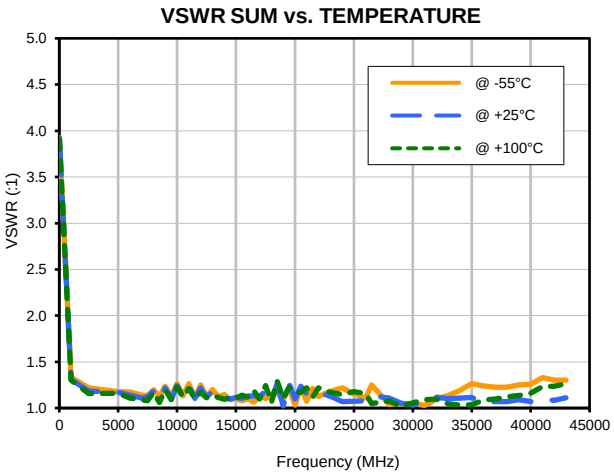


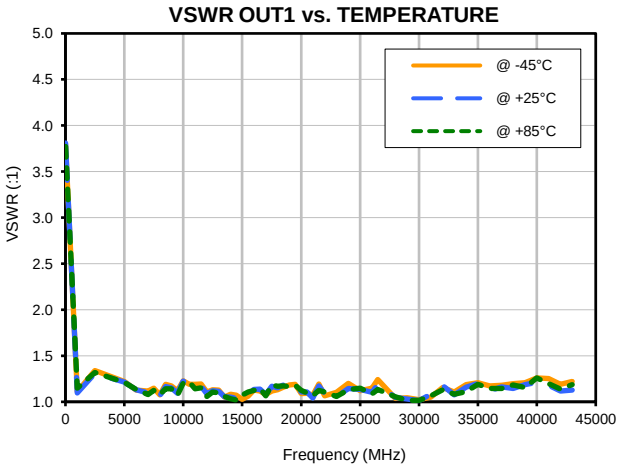
Isolation 1-2 vs. TEMPERATURE



Typical Performance Curves

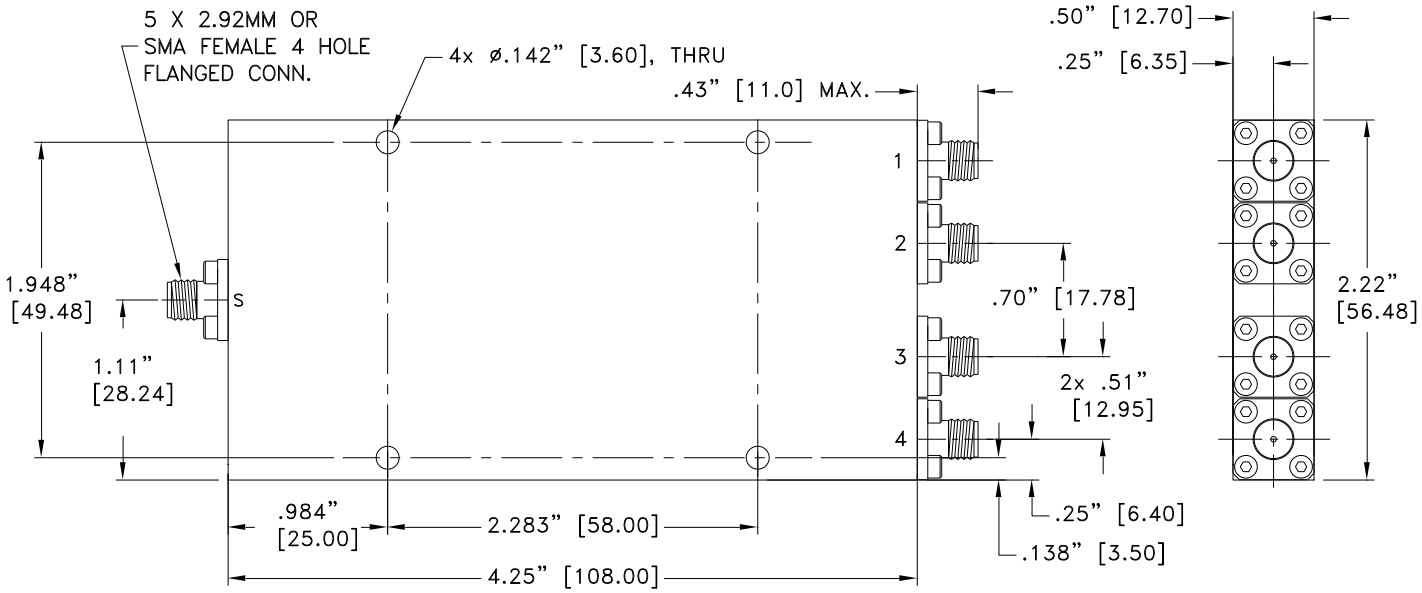






Case Style UU

Outline Dimensions UU2413-2



Weight: 220 Grams

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish: Painting Color: Blue.
3. Refer to the individual model data sheet for the type of connectors available.

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Environmental Specifications **ENV102**

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
Thermal Shock	-55° to 100°C, 25 cycles	MIL-STD-202, Method 107, Condition A-1 except +100°C instead of 85°C
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
Connector Durability	500 mating/unmating cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12

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