

DC Pass

High Power Combiner

ZB4PD-282-50W+

4 Way-0° 50Ω 500 to 2750 MHz

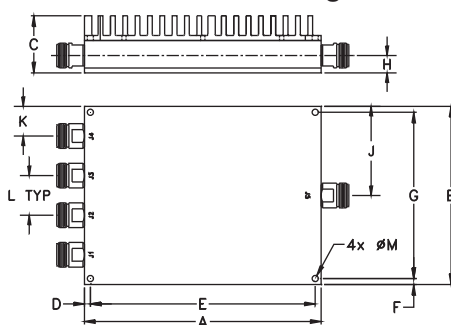
Maximum Ratings

Operating Temperature	0°C to 50°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	100W max.
Internal Dissipation	45W max.
DC Current (each port)	0.5A max.
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
6.00	4.50	1.45	.15	5.700	.15	4.200
152.40	114.30	36.83	3.81	144.78	3.81	106.68

H	J	K	L	M	N	wt
.44	2.25	.75	1	.156	0.82	grams
11.18	57.15	19.05	25.40	3.96	20.83	1100

Electrical Schematic



Features

- usable, 500 to 2800 MHz
- low insertion loss, 1.5 dB typ.
- low amplitude unbalance, 0.3 dB typ.
- excellent output VSWR, 1.2:1 typ.
- DC Pass from sum port to all output ports

Applications

- high band PCS
- UNII
- WIMAX
- WiFi
- bluetooth



CASE STYLE: BV278-2

Connectors	Model
N-TYPE	ZB4PD-282-50W+

+RoHS Compliant

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

Electrical Specifications at 25°C

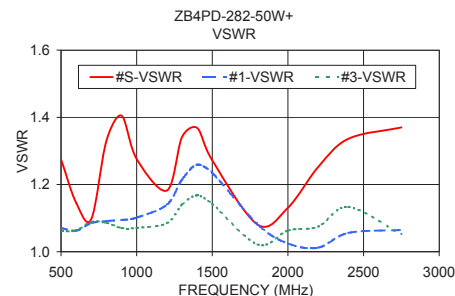
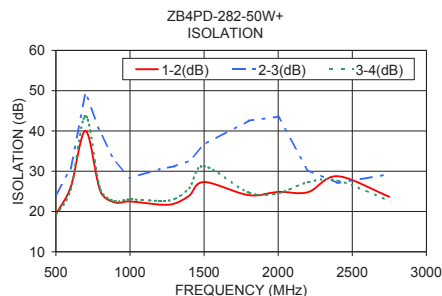
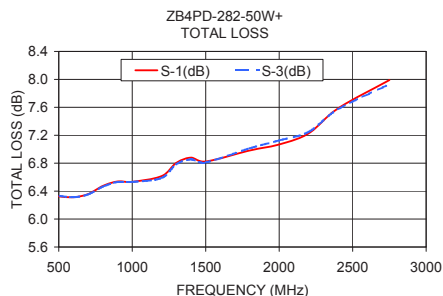
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		500		2750	MHz
Insertion Loss Above 6.0 dB	700-2700 500-2750	— —	1.5 1.8	2.2 2.5	dB
Isolation	700-2700 500-2750	15 15	20 21	—	dB
Phase Unbalance	700-2700 500-2750	— —	5 6	18 19	Degree
Amplitude Unbalance	700-2700 500-2750	— —	0.3 0.4	0.6 0.7	dB
VSWR (Port S)	700-2700 500-2750	— —	1.25 1.4	1.85	:1
VSWR (Port 1-4)	700-2700 500-2750	— —	1.15 1.2	1.5 1.5	:1
Power Input¹	as splitter 700-2700 500-2750	— —	— —	100 100	W
	as combiner ¹ 700-2700 500-2750	— —	— —	50 40	

1. As a combiner of non-coherent signals, max. power per port is power rating divided by four ports.

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	2-3	3-4						
500.00	6.32	6.33	6.33	6.38	0.05	19.33	24.19	19.08	0.89	1.28	1.07	1.09	1.06	1.07
600.00	6.31	6.31	6.31	6.36	0.05	26.13	30.67	25.45	1.13	1.15	1.06	1.09	1.06	1.08
700.00	6.36	6.37	6.35	6.38	0.02	40.05	49.46	43.69	1.25	1.10	1.09	1.11	1.09	1.10
800.00	6.47	6.48	6.46	6.51	0.04	25.03	39.57	25.50	1.83	1.33	1.09	1.11	1.09	1.10
900.00	6.54	6.53	6.53	6.61	0.08	22.23	32.27	22.57	1.84	1.41	1.09	1.08	1.07	1.07
1000.00	6.53	6.53	6.53	6.56	0.04	22.50	28.35	23.00	1.95	1.28	1.10	1.06	1.07	1.06
1200.00	6.62	6.59	6.59	6.61	0.03	21.71	30.55	22.64	2.56	1.18	1.14	1.10	1.08	1.08
1300.00	6.81	6.83	6.79	6.79	0.05	21.97	31.24	23.10	2.76	1.34	1.21	1.17	1.14	1.14
1400.00	6.88	6.94	6.85	6.84	0.10	23.93	32.56	25.80	3.00	1.37	1.26	1.23	1.17	1.17
1500.00	6.82	6.86	6.81	6.78	0.08	27.32	36.64	31.25	3.68	1.27	1.23	1.23	1.14	1.14
1800.00	6.98	7.07	7.01	6.94	0.13	24.08	42.55	24.73	3.85	1.08	1.08	1.10	1.02	1.03
2000.00	7.07	7.11	7.13	7.14	0.07	24.87	43.55	24.51	4.44	1.13	1.02	1.06	1.06	1.08
2200.00	7.23	7.27	7.25	7.22	0.05	24.79	30.24	27.26	4.86	1.25	1.01	1.05	1.07	1.08
2400.00	7.58	7.56	7.57	7.61	0.05	28.77	27.06	27.68	5.26	1.34	1.06	1.10	1.13	1.15
2750.00	7.99	7.89	7.93	7.87	0.12	23.67	29.29	22.68	5.96	1.37	1.06	1.04	1.05	1.05

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



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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M151107
ED-16146/1
ZN4PD282-50W+
WP/CP/AM
151015

4 Way-0° Power Splitter/Combiner

ZB4PD-282-50W+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (Deg)	FREQ. (MHz)	VSWR (:1)				
	S1	S2	S3	S4		1-2	2-3	3-4			S	1	2	3	4
500.0	6.32	6.33	6.33	6.38	0.05	19.33	24.19	19.08	0.89	500.0	1.28	1.07	1.09	1.06	1.07
550.0	6.31	6.34	6.34	6.38	0.06	22.64	27.03	22.21	1.08	550.0	1.24	1.06	1.08	1.06	1.07
600.0	6.31	6.31	6.31	6.36	0.05	26.13	30.67	25.45	1.13	600.0	1.15	1.06	1.09	1.06	1.08
650.0	6.31	6.32	6.31	6.34	0.04	35.31	33.90	33.41	1.16	650.0	1.03	1.07	1.10	1.08	1.09
700.0	6.36	6.37	6.35	6.38	0.02	40.05	49.46	43.69	1.25	700.0	1.10	1.09	1.11	1.09	1.10
750.0	6.42	6.42	6.41	6.43	0.01	28.39	40.24	29.17	1.69	750.0	1.21	1.09	1.11	1.09	1.11
800.0	6.47	6.48	6.46	6.51	0.04	25.03	39.57	25.50	1.83	800.0	1.33	1.09	1.11	1.09	1.10
850.0	6.56	6.58	6.55	6.60	0.05	22.19	30.29	22.49	1.87	850.0	1.40	1.09	1.09	1.08	1.08
900.0	6.54	6.53	6.53	6.61	0.08	22.23	32.27	22.57	1.84	900.0	1.41	1.09	1.08	1.07	1.07
950.0	6.63	6.63	6.61	6.64	0.03	21.75	27.81	22.13	1.92	950.0	1.37	1.10	1.07	1.07	1.06
1000.0	6.53	6.53	6.53	6.56	0.04	22.50	28.35	23.00	1.95	1000.0	1.28	1.10	1.06	1.07	1.06
1050.0	6.51	6.54	6.51	6.54	0.03	24.16	26.51	25.04	2.16	1050.0	1.17	1.10	1.06	1.07	1.06
1100.0	6.52	6.49	6.50	6.52	0.03	22.97	28.29	23.87	2.20	1100.0	1.06	1.10	1.06	1.06	1.05
1150.0	6.51	6.57	6.53	6.53	0.06	23.67	25.82	24.68	2.21	1150.0	1.07	1.11	1.07	1.07	1.06
1200.0	6.62	6.59	6.59	6.61	0.03	21.71	30.55	22.64	2.56	1200.0	1.18	1.14	1.10	1.08	1.08
1300.0	6.81	6.83	6.79	6.79	0.05	21.97	31.24	23.10	2.76	1300.0	1.34	1.21	1.17	1.14	1.14
1400.0	6.88	6.94	6.85	6.84	0.10	23.93	32.56	25.80	3.00	1400.0	1.37	1.26	1.23	1.17	1.17
1500.0	6.82	6.86	6.81	6.78	0.08	27.32	36.64	31.25	3.68	1500.0	1.27	1.23	1.23	1.14	1.14
1600.0	6.78	6.80	6.76	6.78	0.04	28.63	40.74	31.74	3.74	1600.0	1.13	1.17	1.18	1.09	1.09
1700.0	6.83	6.87	6.81	6.84	0.06	28.09	42.56	30.20	3.77	1700.0	1.04	1.12	1.14	1.06	1.06
1800.0	6.98	7.07	7.01	6.94	0.13	24.08	42.55	24.73	3.85	1800.0	1.08	1.08	1.10	1.02	1.03
1900.0	7.05	7.07	7.07	7.08	0.04	23.38	39.13	23.13	4.42	1900.0	1.11	1.04	1.07	1.03	1.04
2000.0	7.07	7.11	7.13	7.14	0.07	24.87	43.55	24.51	4.44	2000.0	1.13	1.02	1.06	1.06	1.08
2100.0	7.11	7.14	7.12	7.12	0.03	26.45	36.11	27.50	4.44	2100.0	1.17	1.02	1.07	1.08	1.09
2200.0	7.23	7.27	7.25	7.22	0.05	24.79	30.24	27.26	4.86	2200.0	1.25	1.01	1.05	1.07	1.08
2300.0	7.36	7.41	7.37	7.38	0.05	24.22	28.19	25.80	5.12	2300.0	1.30	1.04	1.04	1.10	1.11
2400.0	7.58	7.56	7.57	7.61	0.05	28.77	27.06	27.68	5.26	2400.0	1.34	1.06	1.10	1.13	1.15
2500.0	7.79	7.76	7.83	7.81	0.07	26.70	27.60	25.53	5.36	2500.0	1.38	1.07	1.15	1.14	1.14
2550.0	7.80	7.83	7.82	7.76	0.08	28.29	36.51	26.80	5.37	2550.0	1.33	1.07	1.14	1.12	1.12
2600.0	7.78	7.83	7.90	7.79	0.12	27.40	28.69	27.52	5.53	2600.0	1.24	1.08	1.12	1.10	1.09
2650.0	7.75	7.70	7.74	7.66	0.10	28.29	38.73	27.54	5.60	2650.0	1.09	1.08	1.09	1.07	1.05
2700.0	7.73	7.77	7.80	7.72	0.08	32.77	28.30	31.07	5.49	2700.0	1.09	1.08	1.05	1.05	1.04
2750.0	7.99	7.89	7.93	7.87	0.12	23.67	29.29	22.68	5.96	2750.0	1.37	1.06	1.04	1.05	1.05

¹Total Loss = Insertion Loss + 6dB Splitter Loss



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IF/RF MICROWAVE COMPONENTS

REV. OR
ZB4PD-282-50W+

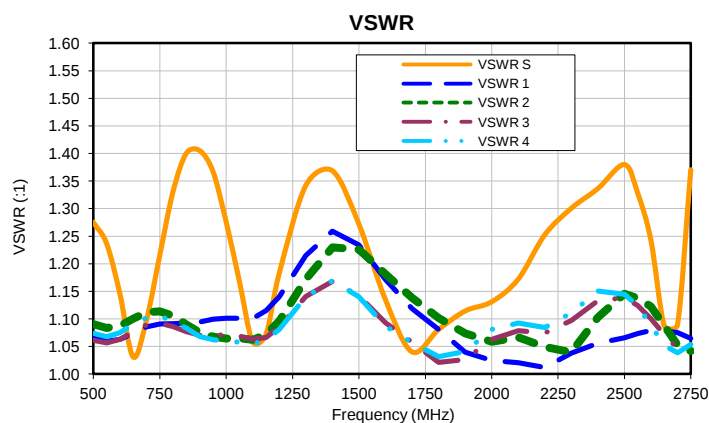
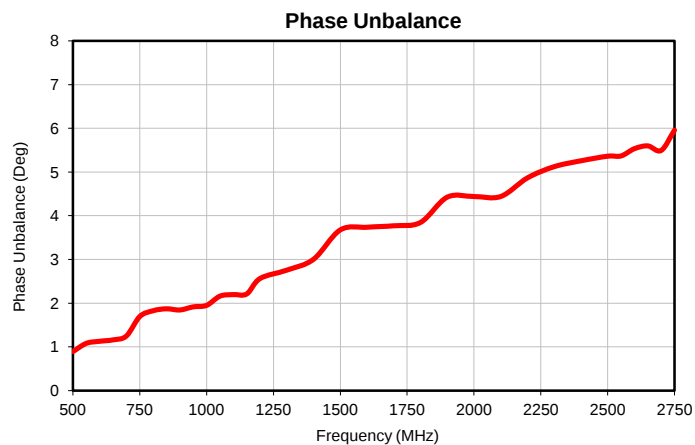
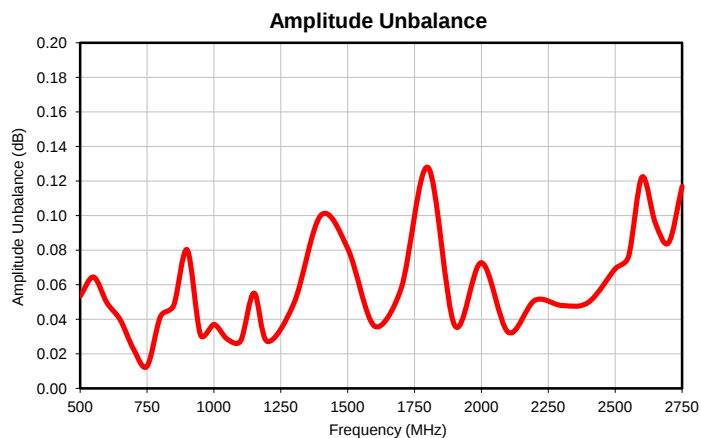
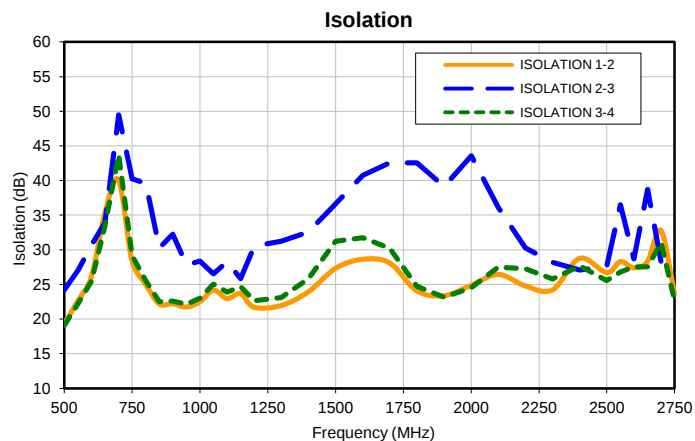
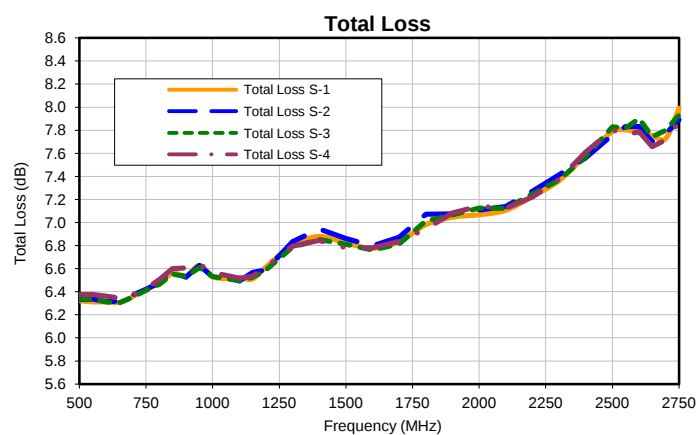
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4 Way-0° Power Splitter/Combiner

ZB4PD-282-50W+

Typical Performance Curves



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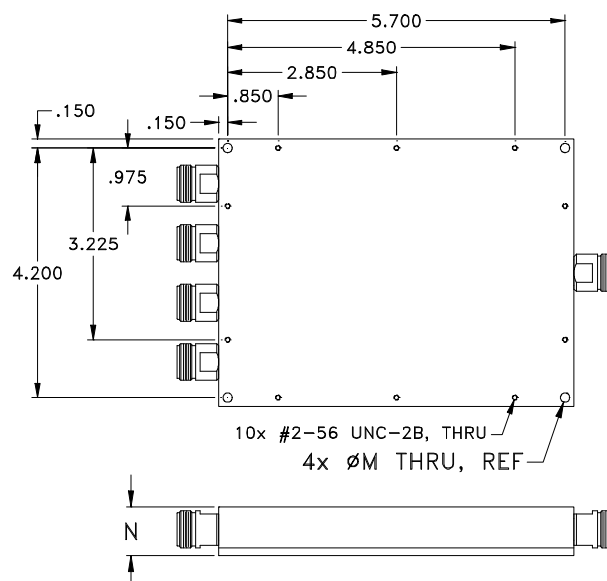
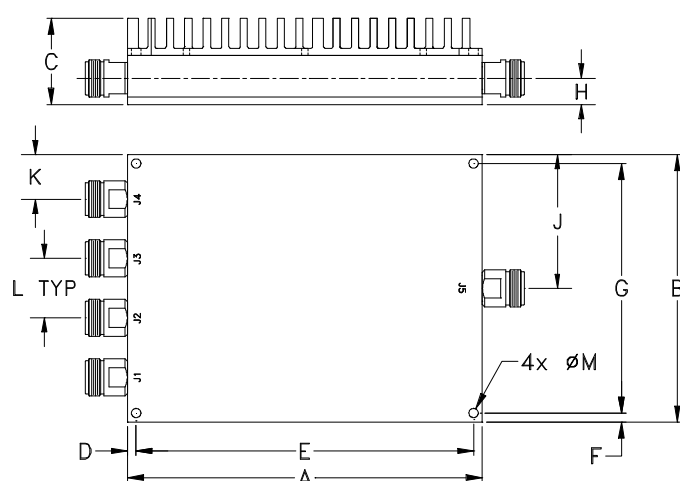
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Outline Dimensions

BV278-2



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK

CASE #	A	B	C	D	E	F	G	H	J	K
BV278-2	6.00 (152.40)	4.50 (114.30)	1.45 (36.83)	.15 (3.81)	5.700 (144.78)	.15 (3.81)	4.200 (106.68)	.44 (11.18)	2.25 (57.15)	.75 (19.05)

CASE #	L	M	N	WT. GRAMS	WT. GRAMS WITHOUT HEATSINK
BV278-2	1.00 (25.40)	.156 (3.96)	.82 (20.83)	1100	800

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

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Heat sink finish: Black Anodize.



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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	-0° to 50° 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