

DC Pass High Power Combiner

ZB4PD-282-50W+

4 Way-0° 50Ω 500 to 2750 MHz

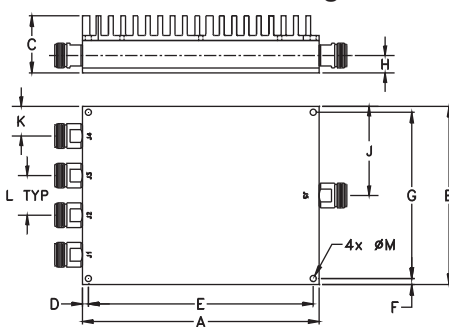
Maximum Ratings

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

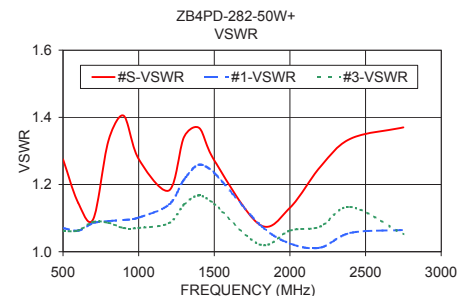
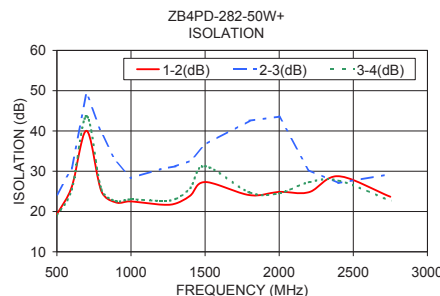
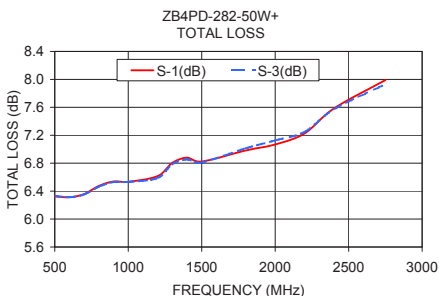
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Frequency Range		500		2750	MHz	
Insertion Loss Above 6.0 dB	700-2700 500-2750	— —	1.5 1.8	2.2 2.5	dB	
Isolation	700-2700 500-2750	15 15	20 21	—	dB	
Phase Unbalance	700-2700 500-2750	— —	5 6	18 19	Degree	
Amplitude Unbalance	700-2700 500-2750	— —	0.3 0.4	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

- 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.
- 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
ZB4PD282-50W+
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+

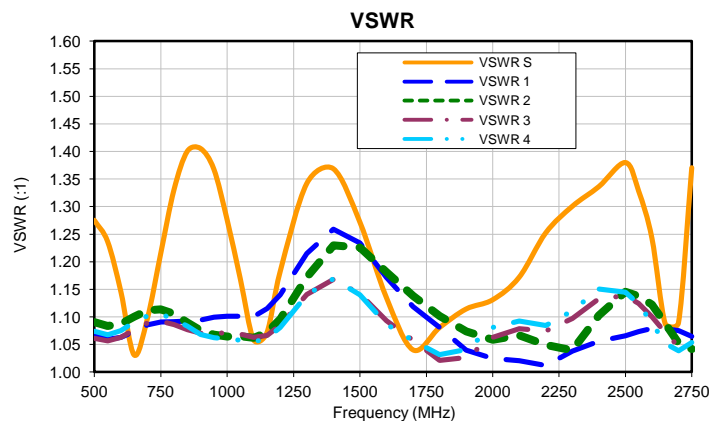
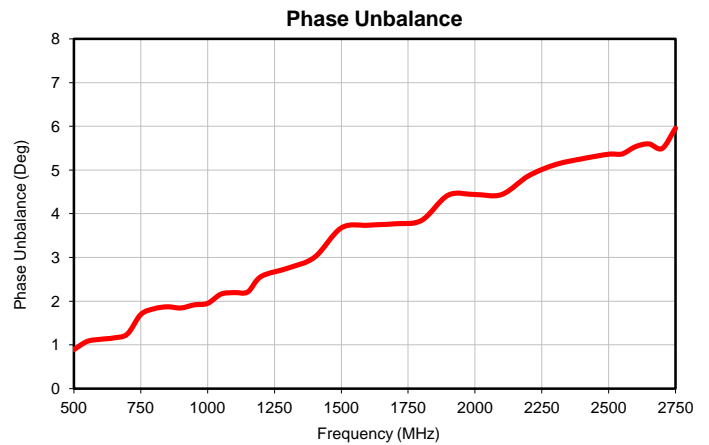
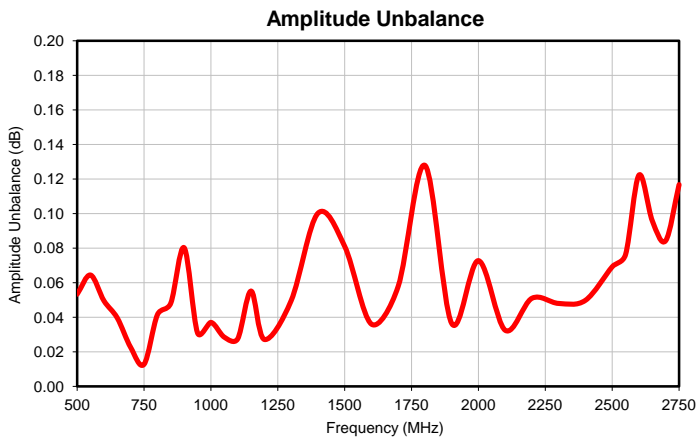
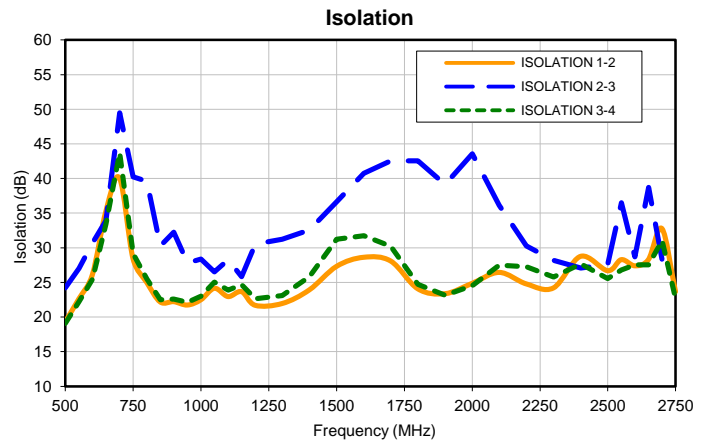
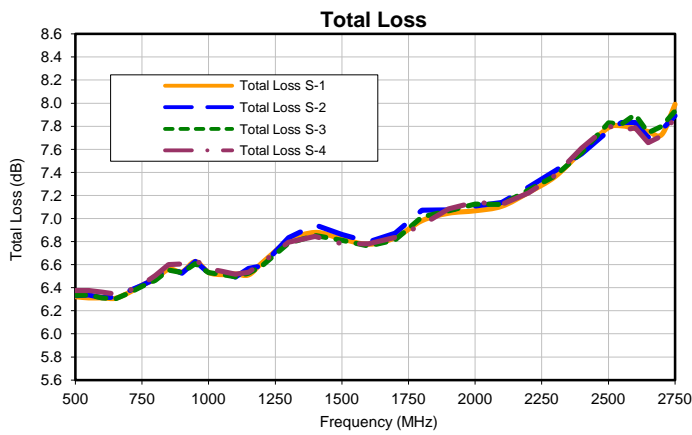
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4 Way-0° Power Splitter/Combiner

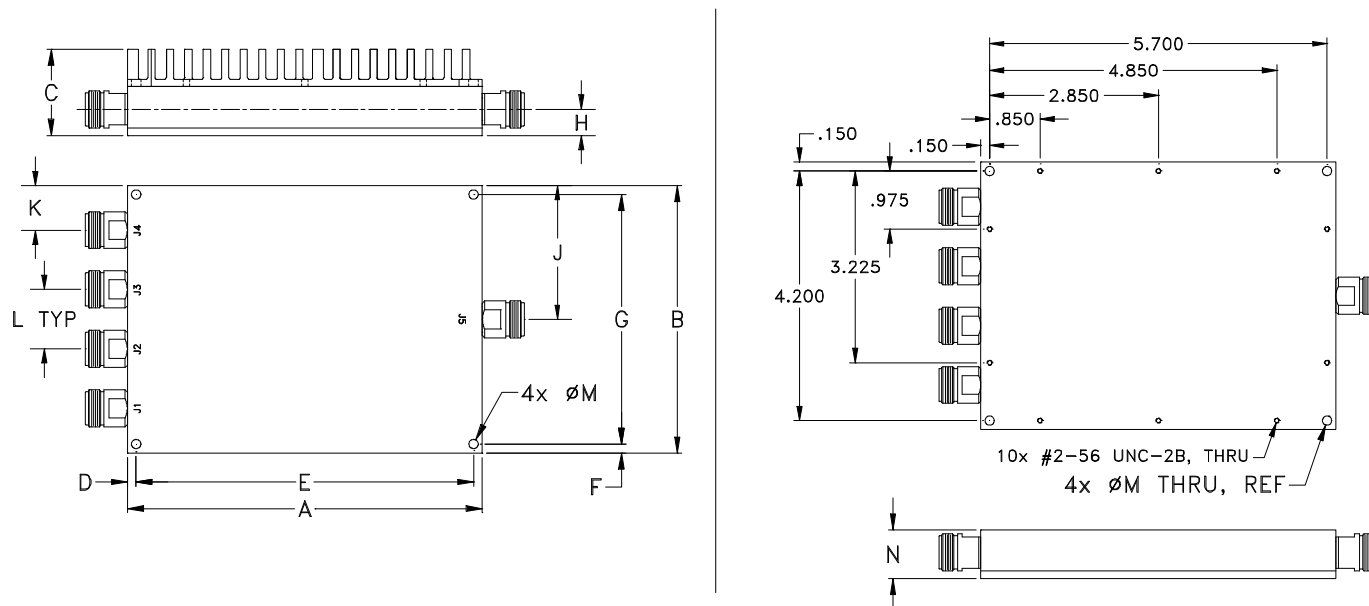
ZB4PD-282-50W+

Typical Performance Curves



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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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