

High Power

Power Splitter/Combiner

ZB2PD-62-50W+

2 Way-0° 50Ω Up to 50W 30 to 610 MHz

The Big Deal

- High power, up to 50W as a splitter and 100W as a Combiner
- Low insertion loss, 0.5 dB
- Good isolation, 22 dB
- Excellent VSWR 1.15:1 typ.



CASE STYLE: BV278-2

Product Overview

Mini-Circuits' ZB2PD-62-50W+ is a 2-way 0° splitter/combiner providing very high power handling and low insertion loss across 30 to 610 MHz, covering the communications bands for receiver and transmitter as well as VHF and UHF. Its outstanding combination of high power and low loss, provide excellent signal fidelity from input to output or output to input. This model also provides high port-to-port isolation and very low amplitude and phase unbalance. It comes housed in a rugged aluminum alloy case with your choice N-Type connectors and an heat sink.

Key Features

Feature	Advantages
Wideband, 30 to 610 MHz	This unit covers many military bands, making it suitable for a wide variety of applications.
High power handling: <ul style="list-style-type: none">• 50W as a splitter• 100W as a combiner	Suitable for many high power applications.
Low insertion loss, 0.5 dB	Very low insertion loss minimizes intrinsic losses, making this model a suitable candidate for high power signal distribution applications where low loss is a requirement.
Low unbalance: <ul style="list-style-type: none">• 0.15 dB amplitude unbalance• 1° phase unbalance	Produces nearly equal output signals, ideal for parallel path / multichannel systems.

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



High Power Power Splitter/Combiner

ZB2PD-62-50W+

2 Way-0° 50Ω Up to 50W 30 to 610 MHz

Maximum Ratings

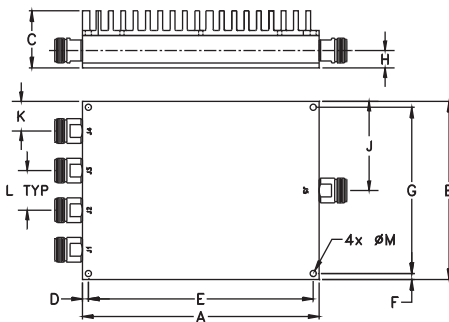
Operating Temperature	0°C to 50°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	50W max.
Internal Dissipation	50W max.

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	4
NOT USED	2,3

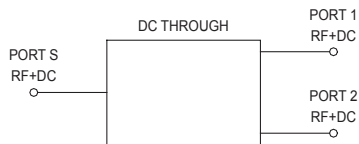
Outline Drawing



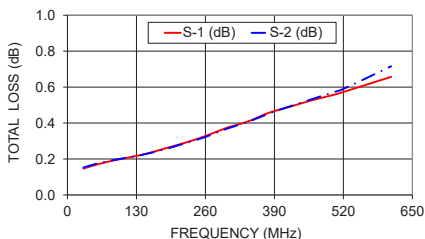
Outline Dimensions (inch/mm)

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

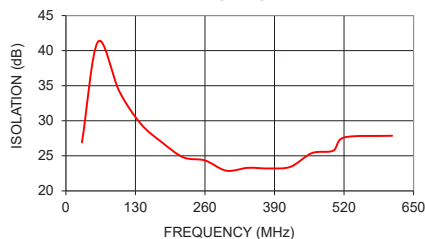
Electrical Schematic



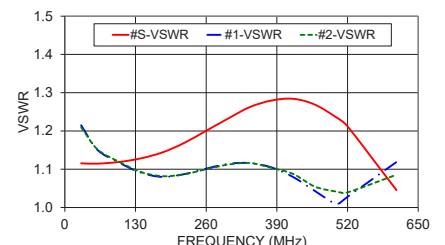
ZB2PD-62-50W+
TOTAL LOSS



ZB2PD-62-50W+
ISOLATION



ZB2PD-62-50W+
VSWR



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Features

- usable, 30 to 610 MHz
- low insertion loss, 0.5 dB typ.
- low amplitude unbalance, 0.3 dB typ.
- excellent output VSWR, 1.15:1 typ.

Applications

- VHF / UHF
- communication receiver and transmission
- military mobile



CASE STYLE: BV278-2

Connectors	Model
N-TYPE	ZB2PD-62-50W+

+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		30		610	MHz
Insertion Loss Above 3.0 dB	30-520		0.5	0.8	dB
	520-610		0.7	1.0	
Isolation	30-520	17	20		dB
	520-610	15	19		
Phase Unbalance	30-610		1.0	3.0	Degree
Amplitude Unbalance	30-610		0.15	0.4	dB
VSWR (Port S)	30-610		1.25	1.5	:1
VSWR (Port 1-2)	30-610		1.15	1.4	:1
Power Input	as splitter	30-520		50	W
		520-610		35	
	as combiner ^{1,2}	30-520		100	
		520-610		70	

1. As a combiner of non-coherent signals, max. power per port is power rating divided by two ports (50W/max for each port at 30-520 MHz)
2. As a combiner of coherent signals, max. power per port is de-rated to 35 w/max at 30-520 mhz.

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						
30	0.15	0.15	0.01	26.91	0.06	1.12	1.22	1.21
60	0.17	0.18	0.00	41.26	0.07	1.11	1.15	1.15
100	0.20	0.20	0.00	34.18	0.11	1.12	1.12	1.12
140	0.22	0.22	0.00	29.57	0.12	1.13	1.09	1.09
180	0.26	0.25	0.00	26.90	0.17	1.14	1.08	1.08
220	0.29	0.29	0.00	24.77	0.18	1.17	1.09	1.09
260	0.33	0.32	0.01	24.34	0.22	1.20	1.10	1.10
300	0.37	0.37	0.01	22.88	0.24	1.23	1.11	1.11
340	0.41	0.41	0.00	23.28	0.25	1.26	1.12	1.12
380	0.46	0.45	0.00	23.20	0.32	1.28	1.10	1.10
420	0.49	0.49	0.00	23.43	0.28	1.28	1.08	1.09
460	0.53	0.53	0.01	25.39	0.34	1.27	1.04	1.05
500	0.56	0.57	0.01	25.74	0.33	1.23	1.01	1.04
520	0.57	0.59	0.02	27.61	0.31	1.21	1.03	1.04
610	0.66	0.72	0.06	27.86	0.24	1.05	1.12	1.09

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



2 Way-0° Power Splitter/Combiner

ZB2PD-62-50W+

Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS ¹ (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB) 1-2	PHASE UNBALANCE (deg.)	FREQUENCY (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
10	3.07	3.08	0.01	14.77	0.05	10	1.17	1.69	1.69
20	3.12	3.12	0.01	21.69	0.04	20	1.12	1.30	1.30
30	3.15	3.15	0.01	26.91	0.06	30	1.12	1.22	1.21
40	3.16	3.16	0.01	31.67	0.06	40	1.11	1.18	1.17
60	3.17	3.18	0.00	41.26	0.07	60	1.11	1.15	1.15
80	3.19	3.19	0.00	39.65	0.09	80	1.12	1.13	1.14
100	3.20	3.20	0.00	34.18	0.11	100	1.12	1.12	1.12
120	3.21	3.21	0.00	31.15	0.12	120	1.12	1.10	1.10
140	3.22	3.22	0.00	29.57	0.12	140	1.13	1.09	1.09
160	3.24	3.24	0.00	28.38	0.15	160	1.14	1.08	1.09
180	3.26	3.25	0.00	26.90	0.17	180	1.14	1.08	1.08
200	3.27	3.27	0.00	25.52	0.16	200	1.16	1.08	1.08
220	3.29	3.29	0.00	24.77	0.18	220	1.17	1.09	1.09
240	3.30	3.30	0.00	24.59	0.20	240	1.18	1.09	1.10
260	3.33	3.32	0.01	24.34	0.22	260	1.20	1.10	1.10
280	3.35	3.35	0.01	23.60	0.22	280	1.22	1.11	1.10
300	3.37	3.37	0.01	22.88	0.24	300	1.23	1.11	1.11
320	3.38	3.38	0.00	22.78	0.25	320	1.25	1.12	1.12
340	3.41	3.41	0.00	23.28	0.25	340	1.26	1.12	1.12
360	3.44	3.44	0.00	23.59	0.29	360	1.27	1.11	1.11
380	3.46	3.45	0.00	23.20	0.32	380	1.28	1.10	1.10
400	3.47	3.47	0.00	22.88	0.29	400	1.28	1.09	1.10
420	3.49	3.49	0.00	23.43	0.28	420	1.28	1.08	1.09
440	3.52	3.52	0.01	24.69	0.28	440	1.28	1.06	1.07
460	3.53	3.53	0.01	25.39	0.34	460	1.27	1.04	1.05
480	3.54	3.55	0.01	25.25	0.32	480	1.25	1.02	1.05
500	3.56	3.57	0.01	25.74	0.33	500	1.23	1.01	1.04
512	3.57	3.58	0.02	26.72	0.33	512	1.22	1.02	1.04
520	3.57	3.59	0.02	27.61	0.31	520	1.21	1.03	1.04
550	3.58	3.62	0.03	29.66	0.31	550	1.17	1.06	1.07
580	3.61	3.65	0.04	28.37	0.34	580	1.11	1.10	1.08
610	3.66	3.72	0.06	27.86	0.24	610	1.05	1.12	1.09
640	3.70	3.79	0.09	24.39	0.24	640	1.04	1.13	1.09
670	3.80	3.91	0.11	21.37	0.21	670	1.15	1.12	1.05
700	3.94	4.08	0.14	19.33	0.06	700	1.29	1.10	1.03

¹Total Loss = Insertion Loss + 3dB Splitter Loss



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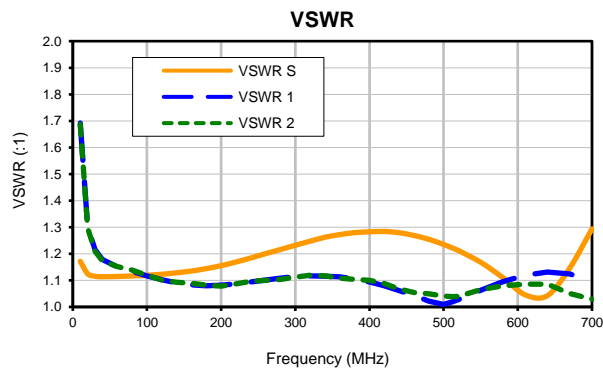
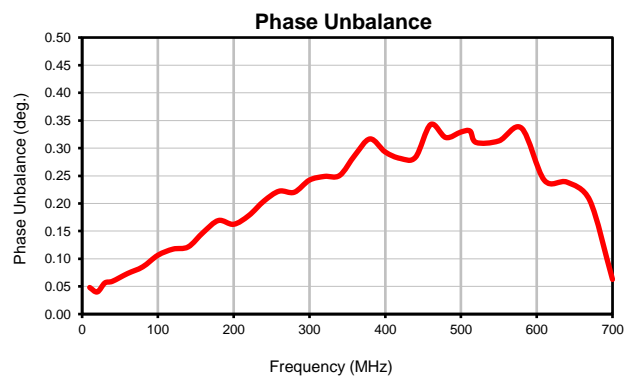
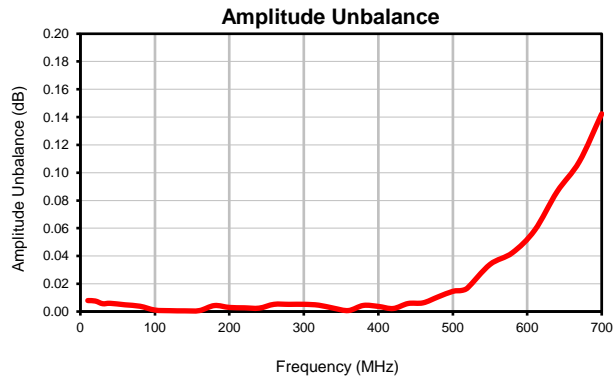
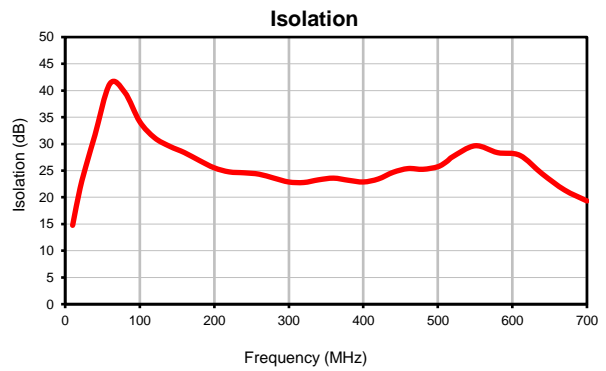
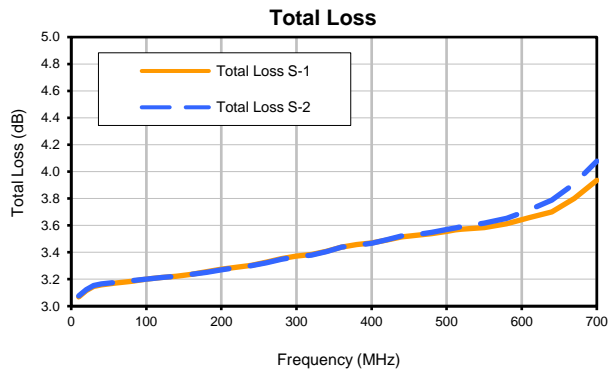


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IF/RF MICROWAVE COMPONENTS

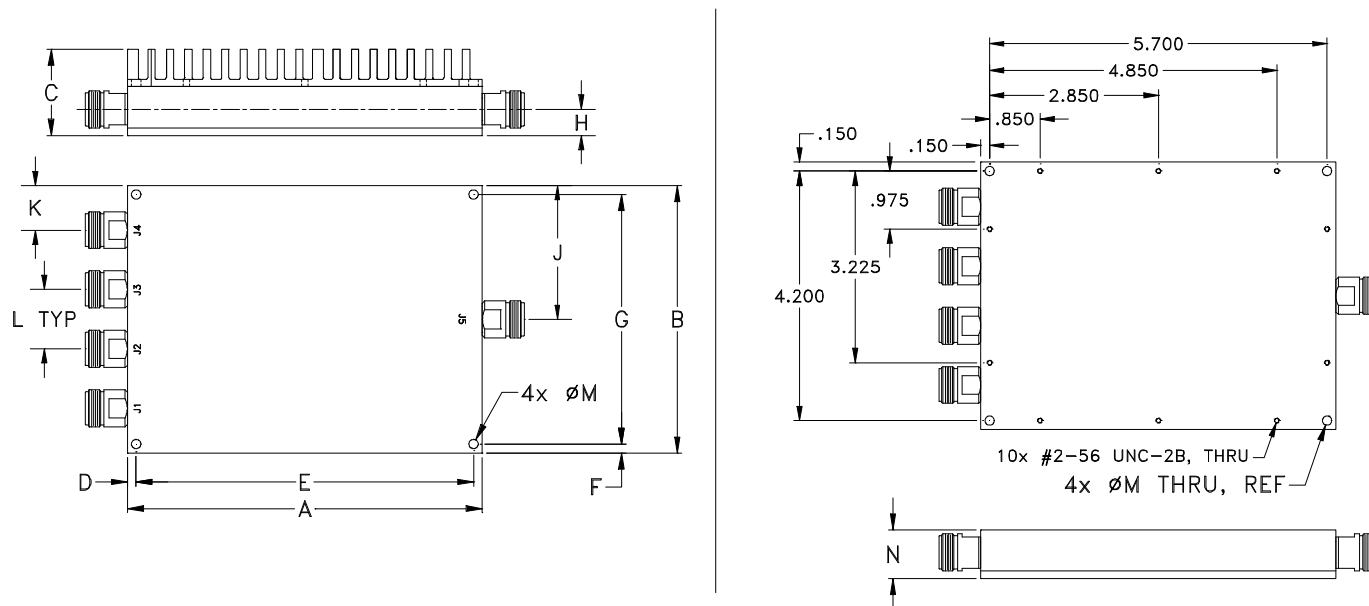
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ZB2PD-62-50W+
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Typical Performance Curves



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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Mini-Circuits ISO 9001 & ISO 14001 Certified

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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