Engineering Development Model

Power Splitter/Combiner ZB4PD-ED16146/2

4 Way-0°

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

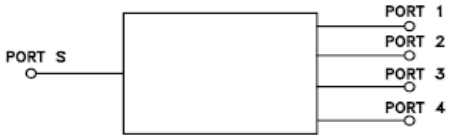
Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : BV278-2

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		500		3300	MHz
Isolation	**500-3300 MHz**		24		dB
Insertion Loss Above 6.0 dB	**500-3300 MHz**		0.80		dB
Phase Unbalance	**500-3300 MHz**		2.00		deg.
Amplitude Unbalance	**500-3300 MHz**		0.20		dB
VSWR	**SUM Port**		1.25		(:1)
	OUT Ports		1.15		(:1)
DC Pass (each port)				0.5	A

MAXIMUM RATINGS		
Operating Temperature	-40°C to +60°C	
Storage Temperature	-55°C to 100°C	
Input Power (as Splitter)	500-2700 MHz	100W
	2700-3300 MHz	50W
Input Power (as Combiner)	500-3300 MHz	5W

Functional Diagram



COAXIAL CONNECTIONS	
SUM PORT	S
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4

4 Way-0° Power Splitter/Combiner ZB4PD-ED16146/2

Typical Performance Data

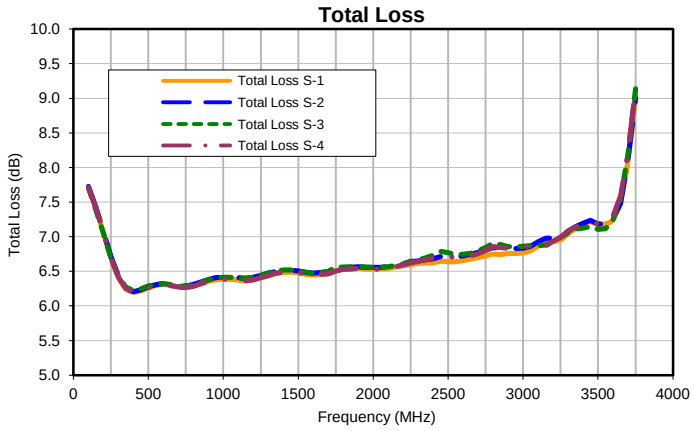
FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (Deg)
	S1	S2	S3	S4		1-2	2-3	3-4	
100	7.71	7.72	7.71	7.71	0.02	5.21	12.14	5.22	0.13
150	7.41	7.43	7.39	7.42	0.04	5.67	14.12	5.68	0.12
200	7.06	7.07	7.05	7.06	0.02	6.59	15.50	6.61	0.12
250	6.70	6.72	6.70	6.71	0.02	7.83	16.57	7.86	0.19
300	6.41	6.43	6.43	6.41	0.02	9.40	17.43	9.44	0.20
350	6.25	6.26	6.27	6.25	0.02	11.26	18.34	11.31	0.16
400	6.20	6.21	6.23	6.20	0.03	13.41	19.52	13.49	0.10
450	6.22	6.23	6.25	6.22	0.03	15.78	20.91	15.90	0.06
500	6.26	6.28	6.29	6.26	0.03	18.26	22.47	18.41	0.08
525	6.28	6.29	6.30	6.28	0.02	19.48	23.37	19.65	0.09
550	6.30	6.31	6.31	6.30	0.02	20.68	24.35	20.87	0.10
575	6.30	6.32	6.32	6.31	0.02	21.85	25.47	22.07	0.10
600	6.31	6.32	6.32	6.31	0.01	23.00	26.77	23.25	0.11
625	6.31	6.32	6.32	6.31	0.01	24.20	28.34	24.48	0.13
650	6.29	6.31	6.31	6.29	0.01	25.58	30.17	25.92	0.13
675	6.28	6.30	6.30	6.28	0.02	27.26	32.32	27.69	0.14
700	6.28	6.30	6.29	6.27	0.02	29.40	34.79	29.98	0.13
725	6.27	6.29	6.29	6.27	0.02	32.32	37.74	33.17	0.12
750	6.27	6.29	6.28	6.26	0.02	37.05	41.31	38.59	0.14
775	6.27	6.30	6.29	6.27	0.02	47.11	44.18	48.86	0.15
800	6.29	6.31	6.31	6.29	0.02	40.40	41.90	38.50	0.15
850	6.32	6.34	6.34	6.32	0.03	30.59	35.32	29.88	0.18
900	6.35	6.38	6.38	6.35	0.03	26.61	31.68	26.16	0.22
950	6.38	6.41	6.40	6.38	0.03	24.80	29.74	24.47	0.21
1000	6.39	6.42	6.41	6.38	0.03	24.05	28.47	23.79	0.20
1050	6.38	6.42	6.41	6.38	0.03	24.13	27.50	23.93	0.19
1100	6.37	6.41	6.40	6.37	0.04	24.63	26.91	24.48	0.21
1150	6.36	6.40	6.40	6.36	0.04	25.13	26.70	25.01	0.22
1200	6.38	6.41	6.41	6.38	0.03	25.16	26.83	25.00	0.23
1250	6.41	6.44	6.44	6.41	0.03	24.56	27.16	24.33	0.26
1300	6.44	6.47	6.47	6.44	0.04	23.81	27.68	23.53	0.28
1350	6.47	6.50	6.50	6.47	0.03	23.30	28.54	22.98	0.28
1400	6.48	6.52	6.52	6.49	0.04	23.36	29.90	22.99	0.28
1450	6.49	6.51	6.52	6.49	0.03	23.99	31.54	23.58	0.27
1500	6.48	6.51	6.51	6.48	0.03	25.54	33.72	25.08	0.29
1550	6.46	6.48	6.49	6.46	0.03	28.51	36.79	27.91	0.30
1600	6.45	6.47	6.48	6.45	0.03	34.50	40.85	33.46	0.31
1700	6.46	6.49	6.50	6.47	0.03	34.43	38.06	34.78	0.36
1750	6.50	6.55	6.56	6.51	0.06	29.51	34.73	29.66	0.36
1800	6.53	6.56	6.56	6.53	0.03	27.47	33.30	27.52	0.40
1850	6.53	6.56	6.56	6.53	0.03	26.50	31.56	26.50	0.41
1900	6.55	6.57	6.57	6.54	0.03	26.21	30.35	26.13	0.43
1950	6.53	6.56	6.56	6.53	0.03	26.05	29.62	25.95	0.46
2000	6.53	6.56	6.56	6.53	0.03	25.37	29.16	25.29	0.51
2050	6.54	6.56	6.56	6.53	0.03	24.45	28.82	24.39	0.56
2100	6.54	6.57	6.57	6.54	0.03	23.35	28.81	23.31	0.61
2150	6.56	6.59	6.59	6.57	0.03	22.54	29.18	22.53	0.67
2200	6.58	6.61	6.61	6.59	0.03	22.19	29.72	22.20	0.71
2250	6.60	6.64	6.64	6.62	0.04	22.51	30.67	22.55	0.76
2300	6.61	6.65	6.66	6.65	0.05	23.57	31.92	23.62	0.78
2350	6.62	6.67	6.69	6.67	0.07	25.62	33.87	25.74	0.80
2400	6.62	6.68	6.73	6.69	0.11	29.21	36.38	29.46	0.82
2450	6.65	6.71	6.79	6.73	0.14	35.29	39.37	34.62	0.66
2500	6.64	6.71	6.77	6.72	0.13	36.59	41.76	34.42	0.52
2550	6.64	6.71	6.74	6.70	0.10	31.05	42.22	30.63	0.56
2600	6.66	6.72	6.75	6.70	0.09	28.18	40.10	28.11	0.57
2650	6.68	6.75	6.76	6.72	0.09	27.02	37.74	27.09	0.59
2700	6.70	6.78	6.80	6.76	0.10	27.11	35.90	27.27	0.67
2750	6.72	6.81	6.84	6.80	0.12	27.87	33.97	27.97	0.73
2800	6.75	6.84	6.91	6.86	0.16	28.45	32.75	27.83	0.63
2850	6.74	6.83	6.89	6.84	0.14	27.24	31.64	26.15	0.70
2900	6.76	6.83	6.86	6.84	0.10	25.16	30.49	24.20	0.67
2950	6.76	6.83	6.86	6.83	0.10	23.25	29.62	22.42	0.69
3000	6.77	6.84	6.86	6.85	0.09	22.27	29.23	21.35	0.66
3050	6.80	6.86	6.87	6.87	0.07	21.61	28.91	20.37	0.99
3100	6.86	6.93	6.87	6.85	0.08	21.16	27.75	19.89	1.00
3150	6.92	6.98	6.88	6.87	0.11	20.67	26.51	19.72	0.54
3200	6.93	6.98	6.94	6.94	0.05	20.22	25.00	19.30	0.77
3250	6.96	7.00	6.99	6.99	0.05	19.12	23.69	18.31	0.66
3300	7.04	7.08	7.06	7.08	0.04	17.25	22.54	16.73	0.53
3350	7.11	7.14	7.11	7.14	0.03	15.20	21.67	14.96	0.62
3400	7.18	7.19	7.12	7.18	0.07	13.29	20.96	13.22	0.63
3450	7.21	7.23	7.14	7.21	0.09	11.73	20.39	11.74	0.77
3500	7.19	7.18	7.11	7.18	0.08	10.48	19.86	10.52	0.92
3550	7.19	7.19	7.11	7.19	0.08	9.41	19.49	9.45	1.21
3600	7.25	7.25	7.24	7.30	0.06	8.52	19.44	8.52	1.40
3650	7.52	7.48	7.55	7.59	0.11	7.69	19.74	7.66	1.52
3700	8.11	8.13	8.19	8.20	0.09	6.95	20.43	6.92	1.45
3750	9.05	9.00	9.14	9.15	0.15	6.40	21.49	6.39	1.31

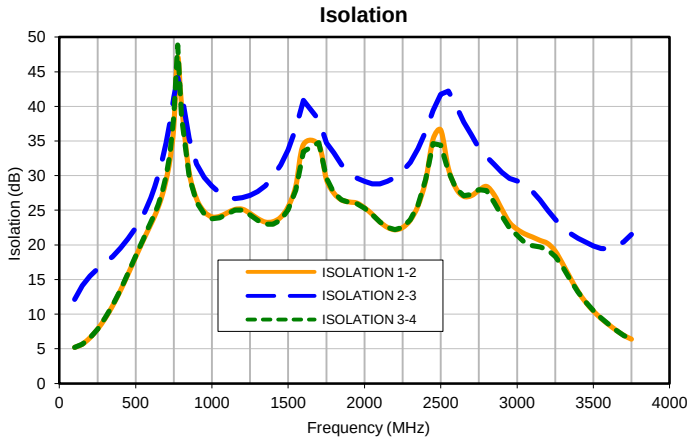
FREQ. (MHz)	VSWR (:1)				
	S	1	2	3	4
100	3.45	2.17	2.17	2.16	2.17
150	3.00	1.73	1.74	1.72	1.73
200	2.50	1.46	1.47	1.46	1.47
250	2.02	1.29	1.30	1.29	1.29
300	1.62	1.18	1.18	1.18	1.18
350	1.31	1.11	1.12	1.12	1.12
400	1.12	1.09	1.10	1.10	1.10
450	1.14	1.10	1.11	1.10	1.10
500	1.23	1.10	1.10	1.10	1.10
525	1.27	1.09	1.10	1.10	1.10
550	1.29	1.09	1.09	1.09	1.09
575	1.29	1.08	1.09	1.08	1.08
600	1.28	1.07	1.07	1.07	1.07
625	1.26	1.06	1.06	1.06	1.06
650	1.23	1.04	1.05	1.04	1.04
675	1.19	1.04	1.04	1.03	1.03
700	1.15	1.03	1.04	1.03	1.03
725	1.10	1.03	1.04	1.03	1.03
750	1.06	1.04	1.05	1.04	1.04
775	1.04	1.04	1.06	1.05	1.05
800	1.06	1.05	1.06	1.05	1.05
850	1.15	1.06	1.07	1.06	1.06
900	1.22	1.06	1.07	1.06	1.06
950	1.26	1.05	1.05	1.04	1.05
1000	1.26	1.04	1.04	1.03	1.04
1050	1.24	1.03	1.03	1.03	1.03
1100	1.19	1.04	1.04	1.05	1.05
1150	1.14	1.06	1.06	1.07	1.06
1200	1.14	1.07	1.07	1.08	1.08
1250	1.18	1.08	1.08	1.08	1.08
1300	1.24	1.08	1.07	1.07	1.08
1350	1.28	1.07	1.05	1.06	1.06
1400	1.31	1.05	1.03	1.03	1.04
1450	1.30	1.03	1.00	1.01	1.01
1500	1.25	1.00	1.02	1.03	1.02
1550	1.20	1.02	1.05	1.05	1.05
1600	1.13	1.04	1.06	1.06	1.06
1700	1.13	1.06	1.06	1.06	1.07
1750	1.17	1.06	1.04	1.04	1.06
1800	1.20	1.05	1.02	1.02	1.03
1850	1.22	1.03	1.00	1.02	1.01
1900	1.21	1.01	1.02	1.04	1.01
1950	1.18	1.01	1.03	1.06	1.03
2000	1.12	1.01	1.04	1.07	1.04
2050	1.08	1.02	1.04	1.07	1.04
2100	1.07	1.01	1.04	1.07	1.03
2150	1.10	1.02	1.04	1.07	1.04
2200	1.14	1.04	1.06	1.09	1.06
2250	1.18	1.07	1.09	1.11	1.09
2300	1.19	1.10	1.11	1.14	1.12
2350	1.19	1.12	1.13	1.16	1.14
2400	1.17	1.14	1.13	1.17	1.16
2450	1.14	1.14	1.13	1.16	1.15
2500	1.09	1.13	1.11	1.14	1.13
2550	1.04	1.11	1.08	1.11	1.11
2600	1.06	1.08	1.04	1.08	1.08
2650	1.10	1.05	1.02	1.06	1.06
2700	1.13	1.03	1.04	1.06	1.06
2750	1.16	1.04	1.07	1.08	1.09
2800	1.17	1.06	1.09	1.09	1.11
2850	1.14	1.07	1.10	1.10	1.12
2900	1.13	1.08	1.11	1.11	1.13
2950	1.10	1.09	1.13	1.12	1.14
3000	1.08	1.12	1.16	1.15	1.16
3050	1.08	1.16	1.19	1.17	1.19
3100	1.09	1.20	1.23	1.22	1.23
3150	1.12	1.24	1.26	1.26	1.28
3200	1.17	1.29	1.30	1.30	1.32
3250	1.27	1.32	1.32	1.32	1.34
3300	1.37	1.33	1.32	1.31	1.35
3350	1.44	1.31	1.29	1.29	1.32
3400	1.50	1.27	1.24	1.25	1.29
3450	1.49	1.21	1.19	1.19	1.24
3500	1.40	1.15	1.13	1.15	1.19
3550	1.25	1.12	1.09	1.13	1.17
3600	1.18	1.16	1.13	1.17	1.20
3650	1.46	1.25	1.22	1.27	1.29
3700	2.03	1.41	1.37	1.44	1.45
3750	2.91	1.64	1.59	1.67	1.68

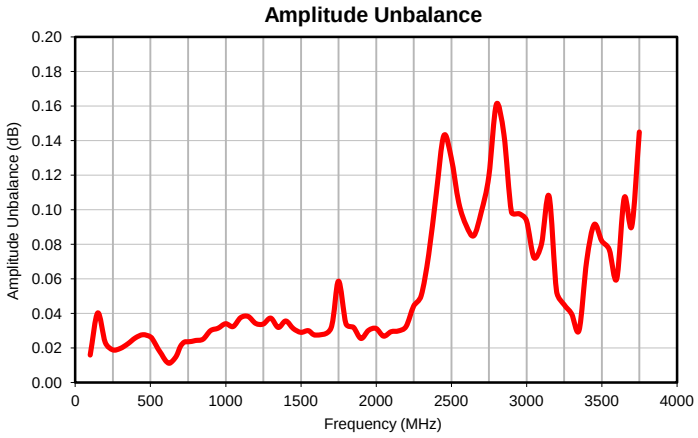
[1]Total Loss = Insertion Loss + 6dB Splitter Loss

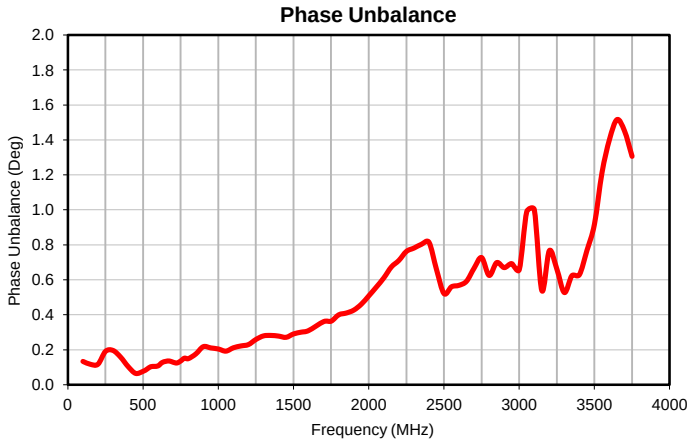
4 Way-0° Power Splitter/Combiner ZB4PD-ED16146/2

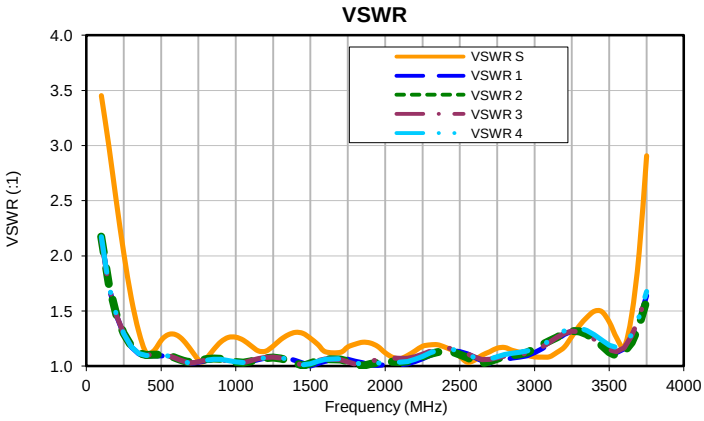
Typical Performance Curves







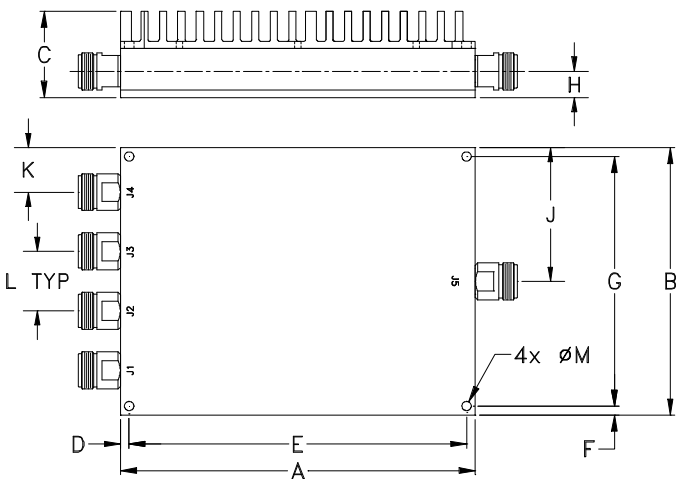


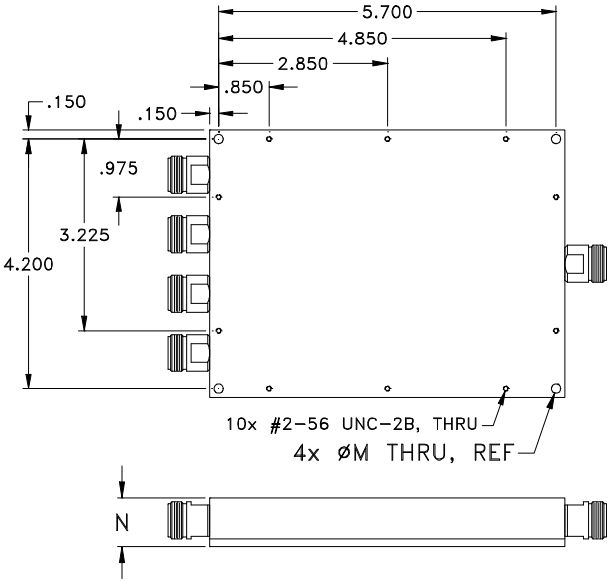


Case Style BV

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. ± .03; 3Pl. ± .015

Notes:

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

Mini-Circuits®
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Environmental Specifications **ENV28T12**

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 60°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