

Power Splitter/Combiner

ZB3PD1-222+

3 Way-0° 50Ω 500 to 2200 MHz

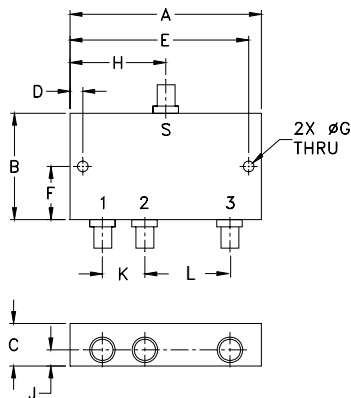
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	10W max.
Internal Dissipation	0.5W max.
DC Current	900 mA (300 mA for each port)
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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F
3.50	2.13	.88	.150	3.350	1.06
88.90	54.10	22.35	3.81	85.09	26.92
G	H	J	K	L	wt
.125	1.75	.44	.89	1.78	grams
3.18	44.45	11.18	22.61	45.21	240

Features

- wideband, 500-2200 MHz
- good isolation, 25 dB typ.
- excellent input VSWR, 1.15:1 typ.
- excellent output VSWR, 1.1:1 typ.
- low insertion loss 0.3 dB typ.

Applications

- cellular
- PCN
- instrumentation



Generic photo used for illustration purposes only

CASE STYLE: UU188-1

Connectors	Model
SMA	ZB3PD1-222-S+
N-TYPE	ZB3PD1-222-N+

+RoHS Compliant

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

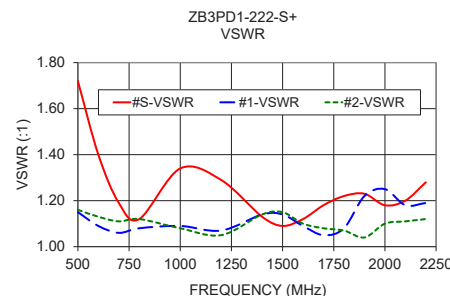
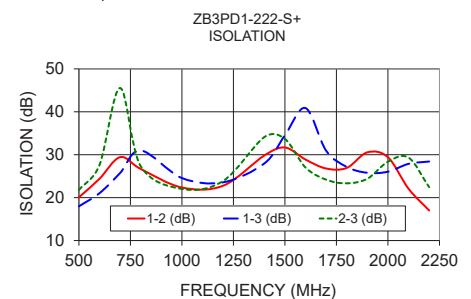
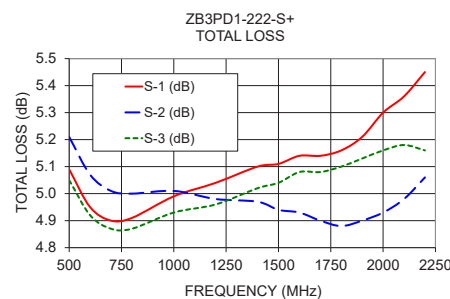
Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 4.8 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1)	
f_L - f_U	Typ.	Min.	Typ.	Max.	Max.	Max.	S Typ.	OUT Typ.
500-2200	25	14	0.3	1.0	—	0.7	1.2	1.2
700-2000	25	19	0.3	0.8	—	0.6	1.15	1.1

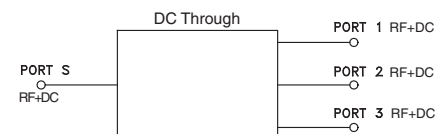
Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)			Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3
	S-1	S-2	S-3		1-2	1-3	2-3					
500.00	5.09	5.21	5.05	0.16	20.07	17.97	21.78	39.63	1.72	1.15	1.16	1.14
600.00	4.95	5.07	4.92	0.15	24.39	21.03	27.60	47.64	1.40	1.09	1.13	1.03
700.00	4.90	5.01	4.87	0.14	29.43	25.74	45.53	55.71	1.19	1.06	1.11	1.03
800.00	4.91	5.00	4.87	0.13	26.68	31.00	27.31	63.77	1.12	1.08	1.12	1.04
1000.00	4.99	5.01	4.93	0.08	22.35	24.56	22.02	79.82	1.34	1.09	1.08	1.07
1200.00	5.04	4.98	4.96	0.08	22.77	23.56	23.87	95.78	1.29	1.07	1.05	1.11
1400.00	5.10	4.97	5.02	0.13	29.82	27.96	34.10	111.66	1.13	1.14	1.14	1.14
1500.00	5.11	4.94	5.04	0.17	31.68	34.53	33.67	119.64	1.09	1.14	1.15	1.30
1600.00	5.14	4.93	5.08	0.21	28.86	40.86	27.00	127.62	1.12	1.09	1.10	1.24
1700.00	5.14	4.90	5.08	0.24	26.78	30.93	24.18	135.63	1.18	1.05	1.08	1.08
1800.00	5.16	4.88	5.10	0.28	26.92	27.17	23.33	143.56	1.22	1.08	1.07	1.03
1900.00	5.21	4.90	5.13	0.31	30.55	25.78	24.40	151.20	1.23	1.22	1.04	1.08
2000.00	5.30	4.93	5.16	0.36	29.40	26.04	28.37	158.77	1.18	1.25	1.10	1.24
2100.00	5.36	4.98	5.18	0.38	22.06	27.87	29.32	166.51	1.20	1.18	1.11	1.41
2200.00	5.45	5.06	5.16	0.39	17.00	28.41	22.43	174.23	1.28	1.19	1.12	1.53

1. Total Loss = Insertion Loss + 4.8dB splitter loss.



electrical schematic



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



3 Way-0° Power Splitter/Combiner

ZB3PD1-222+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹			AMP. UNBAL. (dB)	ISOLATION			FREQ. (MHz)	VSWR			
	S-1	S-2	S-3		1-2	1-3	2-3		S	1	2	3
100.0	6.00	6.04	5.96	0.08	5.39	5.59	5.54	100.0	2.85	2.20	2.27	2.15
200.0	5.82	5.90	5.77	0.14	9.90	9.05	9.75	200.0	2.66	1.68	1.73	1.65
300.0	5.57	5.68	5.51	0.17	14.51	12.65	14.85	300.0	2.43	1.36	1.41	1.32
400.0	5.31	5.43	5.25	0.18	17.25	15.52	18.43	400.0	2.13	1.18	1.20	1.18
500.0	5.09	5.21	5.05	0.16	20.07	17.97	21.78	500.0	1.72	1.15	1.16	1.14
550.0	5.01	5.13	4.97	0.16	21.97	19.36	24.13	550.0	1.57	1.15	1.17	1.11
600.0	4.95	5.07	4.92	0.15	24.39	21.03	27.60	600.0	1.40	1.09	1.13	1.03
650.0	4.91	5.03	4.89	0.14	27.30	23.12	33.81	650.0	1.28	1.08	1.12	1.03
700.0	4.90	5.01	4.87	0.14	29.43	25.74	45.53	700.0	1.19	1.06	1.11	1.03
750.0	4.90	5.00	4.87	0.13	28.71	28.84	32.35	750.0	1.11	1.09	1.09	1.06
800.0	4.91	5.00	4.87	0.13	26.68	31.00	27.31	800.0	1.12	1.08	1.12	1.04
900.0	4.94	5.01	4.90	0.11	23.76	27.72	23.12	900.0	1.24	1.03	1.13	1.07
1000.0	4.99	5.01	4.93	0.08	22.35	24.56	22.02	1000.0	1.34	1.09	1.08	1.07
1100.0	5.02	5.00	4.94	0.07	21.94	23.38	22.38	1100.0	1.34	1.12	1.06	1.06
1200.0	5.04	4.98	4.96	0.08	22.77	23.56	23.87	1200.0	1.29	1.07	1.05	1.11
1300.0	5.09	4.99	5.00	0.10	25.43	24.95	27.10	1300.0	1.22	1.14	1.15	1.14
1400.0	5.10	4.97	5.02	0.13	29.82	27.96	34.10	1400.0	1.13	1.14	1.14	1.14
1500.0	5.11	4.94	5.04	0.17	31.68	34.53	33.67	1500.0	1.09	1.14	1.15	1.30
1550.0	5.14	4.95	5.08	0.19	30.40	41.27	29.68	1550.0	1.10	1.06	1.07	1.25
1600.0	5.14	4.93	5.08	0.21	28.86	40.86	27.00	1600.0	1.12	1.09	1.10	1.24
1650.0	5.12	4.91	5.08	0.21	27.60	34.60	25.27	1650.0	1.18	1.05	1.01	1.23
1700.0	5.14	4.90	5.08	0.24	26.78	30.93	24.18	1700.0	1.18	1.05	1.08	1.08
1750.0	5.14	4.89	5.09	0.26	26.49	28.64	23.51	1750.0	1.20	1.10	1.05	1.12
1800.0	5.16	4.88	5.10	0.28	26.92	27.17	23.33	1800.0	1.22	1.08	1.07	1.03
1850.0	5.18	4.89	5.11	0.29	28.21	26.24	23.56	1850.0	1.21	1.21	1.07	1.05
1900.0	5.21	4.90	5.13	0.31	30.55	25.78	24.40	1900.0	1.23	1.22	1.04	1.08
1950.0	5.23	4.91	5.14	0.32	32.07	25.70	25.92	1950.0	1.21	1.19	1.06	1.15
2000.0	5.30	4.93	5.16	0.36	29.40	26.04	28.37	2000.0	1.18	1.25	1.10	1.24
2050.0	5.31	4.95	5.17	0.36	25.45	26.79	30.73	2050.0	1.20	1.12	1.18	1.42
2100.0	5.36	4.98	5.18	0.38	22.06	27.87	29.32	2100.0	1.20	1.18	1.11	1.41
2150.0	5.43	5.02	5.16	0.41	19.35	28.81	25.63	2150.0	1.21	1.14	1.18	1.53
2200.0	5.45	5.06	5.16	0.39	17.00	28.41	22.43	2200.0	1.28	1.19	1.12	1.53
2250.0	5.54	5.13	5.13	0.41	14.97	26.49	19.93	2250.0	1.33	1.23	1.04	1.45
2300.0	5.56	5.18	5.10	0.47	13.20	24.01	17.76	2300.0	1.43	1.20	1.06	1.61
2400.0	5.78	5.38	5.08	0.70	10.50	20.41	14.04	2400.0	1.72	1.17	1.19	1.78
2500.0	6.11	5.70	5.07	1.04	9.24	18.85	10.83	2500.0	2.32	1.26	1.03	1.68
2600.0	6.80	6.30	5.22	1.58	9.73	18.47	8.35	2600.0	3.15	1.41	1.24	1.56
2650.0	7.40	6.81	5.38	2.02	10.72	18.30	7.46	2650.0	3.44	1.69	1.24	1.53
2700.0	8.15	7.43	5.55	2.60	12.20	17.71	6.67	2700.0	3.78	1.95	1.40	1.53

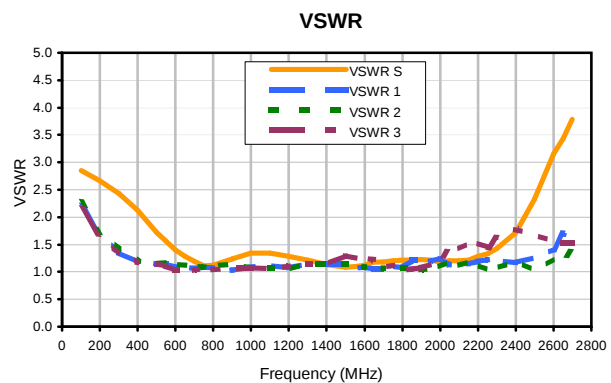
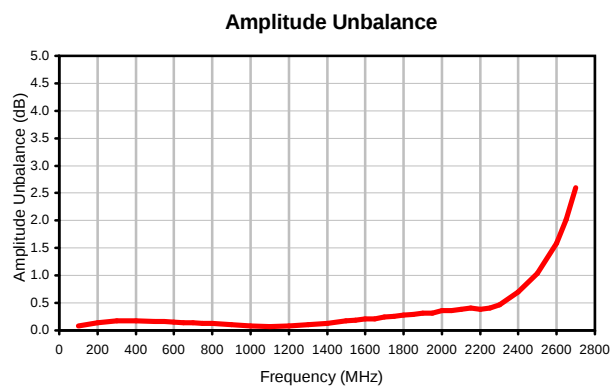
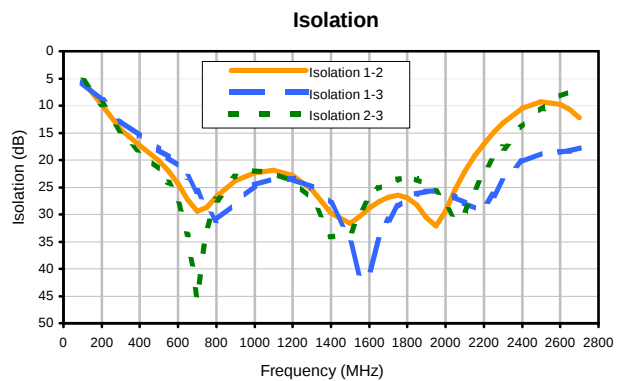
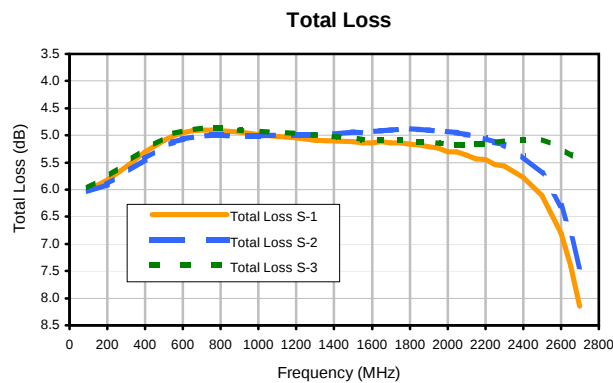
¹ Total Loss = Insertion Loss+ 4.8dB Splitter Loss

REV. X2
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Page 1 of 1

3 Way-0° Power Splitter/Combiner

ZB3PD1-222+

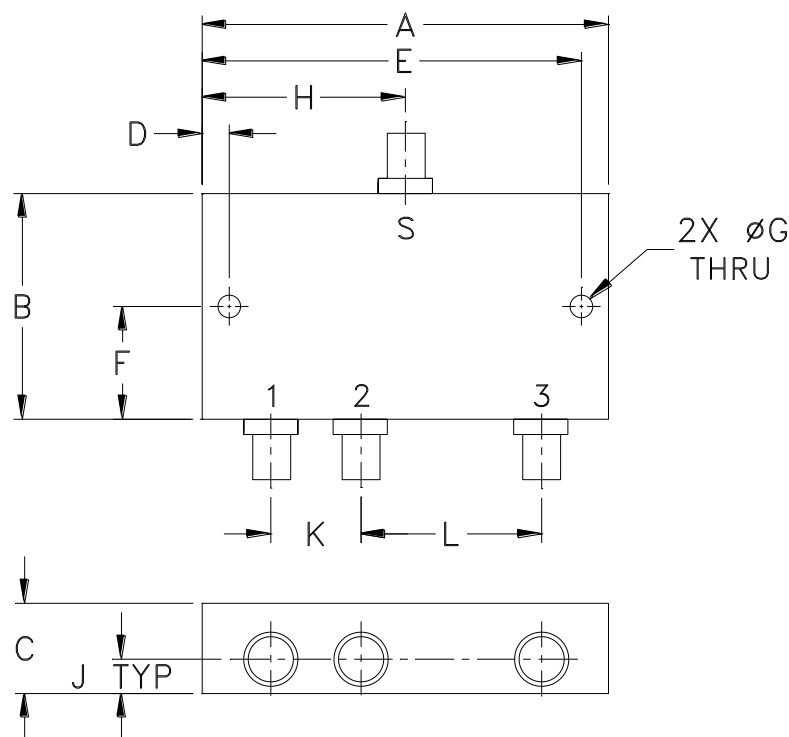
Typical Performance Curves



REV. X2
ZB3PD1-222+
100627
Page 1 of 1

Outline Dimensions

UU188-1



CASE#	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
UU188-1	3.50 (88.90)	2.13 (54.10)	.88 (22.35)	.150 (3.81)	3.350 (85.09)	1.06 (26.92)	.125 (3.18)	1.75 (44.45)	.44 (11.18)	.89 (22.61)	1.78 (45.21)	240

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

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Refer to the individual model data sheet for the type of connectors available.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS



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
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