

Engineering Development Model

Power Splitter/Combiner

4 Way-0°

ZB4PD-ED10955/1

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.



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CASE STYLE : UU188

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		550		2350 MHz
Isolation	550 - 2350 MHz		30	dB
Insertion Loss Above 6.0 dB	550 - 2350 MHz		0.40	dB
Phase Unbalance	550 - 2350 MHz		0.883	deg.
Amplitude Unbalance	550 - 2350 MHz		0.043	dB
VSWR	SUM Port		1.20	(:1)
	OUT Ports		1.25	(:1)

MAXIMUM RATINGS	
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C

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

Functional Diagram



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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)				AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)				
	S-1	S-2	S-3	S-4		1-2	2-3	3-4			S	1	2	3	4
550.0	6.45	6.45	6.47	6.49	0.04	10.65	19.36	10.60	0.29	550.0	1.53	1.25	1.26	1.28	1.26
590.0	6.38	6.39	6.42	6.43	0.04	12.11	19.89	12.04	0.45	590.0	1.38	1.25	1.26	1.28	1.26
630.0	6.32	6.33	6.36	6.38	0.05	13.75	20.43	13.67	0.37	630.0	1.23	1.23	1.25	1.26	1.25
670.0	6.29	6.29	6.32	6.33	0.04	15.60	21.06	15.51	0.33	670.0	1.12	1.21	1.22	1.23	1.24
710.0	6.25	6.26	6.28	6.31	0.05	17.76	21.71	17.64	0.41	710.0	1.02	1.18	1.19	1.19	1.20
750.0	6.26	6.26	6.31	6.31	0.05	20.30	22.49	20.13	0.48	750.0	1.09	1.14	1.15	1.15	1.16
790.0	6.27	6.27	6.30	6.32	0.05	23.22	23.34	22.98	0.47	790.0	1.16	1.09	1.10	1.10	1.11
830.0	6.28	6.28	6.29	6.31	0.03	26.60	24.21	26.19	0.56	830.0	1.21	1.05	1.06	1.06	1.06
870.0	6.33	6.33	6.36	6.37	0.04	30.33	25.26	29.61	0.48	870.0	1.28	1.01	1.02	1.03	1.02
910.0	6.34	6.35	6.37	6.36	0.03	33.39	26.28	32.23	0.71	910.0	1.28	1.04	1.03	1.02	1.03
950.0	6.38	6.40	6.40	6.40	0.02	34.50	27.42	33.45	0.64	950.0	1.26	1.08	1.07	1.06	1.07
1000.0	6.42	6.44	6.45	6.44	0.03	34.63	28.89	34.08	0.75	1000.0	1.28	1.13	1.12	1.12	1.12
1050.0	6.44	6.44	6.44	6.44	0.01	35.68	30.35	35.65	0.67	1050.0	1.23	1.16	1.16	1.17	1.16
1100.0	6.44	6.46	6.48	6.46	0.04	39.02	31.90	39.94	0.72	1100.0	1.23	1.18	1.19	1.20	1.19
1150.0	6.42	6.43	6.45	6.43	0.02	44.86	33.47	55.36	0.75	1150.0	1.16	1.20	1.20	1.22	1.21
1200.0	6.40	6.42	6.44	6.43	0.04	40.64	35.01	40.65	0.79	1200.0	1.11	1.20	1.21	1.21	1.22
1250.0	6.36	6.38	6.40	6.37	0.03	34.56	36.44	34.06	0.74	1250.0	1.07	1.20	1.21	1.20	1.23
1300.0	6.37	6.40	6.41	6.40	0.04	31.14	37.58	30.62	0.90	1300.0	1.12	1.19	1.21	1.20	1.22
1350.0	6.33	6.34	6.36	6.33	0.03	28.98	38.25	28.45	0.79	1350.0	1.13	1.19	1.21	1.21	1.22
1400.0	6.36	6.40	6.41	6.39	0.05	27.86	38.76	27.41	0.98	1400.0	1.16	1.19	1.22	1.23	1.23
1450.0	6.37	6.40	6.40	6.38	0.04	27.37	39.07	26.97	0.95	1450.0	1.18	1.21	1.24	1.25	1.25
1500.0	6.40	6.44	6.43	6.42	0.04	27.58	39.47	27.24	1.00	1500.0	1.16	1.22	1.26	1.27	1.27
1550.0	6.50	6.52	6.53	6.53	0.04	28.46	39.94	28.26	0.90	1550.0	1.20	1.22	1.26	1.28	1.29
1600.0	6.47	6.49	6.50	6.47	0.04	29.60	40.71	29.54	1.02	1600.0	1.17	1.21	1.25	1.26	1.29
1650.0	6.62	6.66	6.67	6.65	0.06	30.33	41.91	30.51	1.01	1650.0	1.24	1.18	1.23	1.23	1.27
1700.0	6.56	6.56	6.59	6.56	0.03	29.13	43.33	29.08	1.10	1700.0	1.20	1.16	1.20	1.21	1.24
1750.0	6.69	6.71	6.73	6.72	0.04	26.90	44.04	26.68	1.30	1750.0	1.16	1.14	1.18	1.20	1.22
1800.0	6.63	6.64	6.63	6.62	0.02	24.46	42.99	24.08	1.15	1800.0	1.15	1.12	1.14	1.18	1.18
1850.0	6.67	6.70	6.70	6.69	0.03	22.60	39.95	22.14	1.34	1850.0	1.11	1.12	1.13	1.17	1.16
1900.0	6.75	6.76	6.75	6.73	0.02	21.23	37.41	20.68	1.16	1900.0	1.19	1.09	1.09	1.12	1.12
1950.0	6.71	6.72	6.69	6.67	0.05	20.18	34.78	19.55	1.18	1950.0	1.23	1.10	1.07	1.07	1.08
1990.0	6.79	6.79	6.77	6.76	0.03	19.82	32.98	19.15	1.19	1990.0	1.24	1.13	1.09	1.08	1.07
2030.0	6.77	6.75	6.73	6.70	0.06	19.65	31.34	18.90	1.25	2030.0	1.33	1.19	1.13	1.14	1.11
2070.0	6.77	6.78	6.75	6.72	0.06	19.86	29.86	19.03	1.05	2070.0	1.35	1.24	1.18	1.19	1.17
2110.0	6.75	6.77	6.74	6.72	0.05	20.29	28.57	19.38	1.09	2110.0	1.31	1.27	1.22	1.23	1.22
2150.0	6.67	6.68	6.67	6.64	0.04	21.07	27.33	20.04	1.11	2150.0	1.36	1.29	1.24	1.23	1.24
2190.0	6.73	6.74	6.75	6.72	0.03	22.26	26.37	21.13	1.06	2190.0	1.37	1.31	1.27	1.25	1.29
2230.0	6.57	6.60	6.63	6.59	0.06	23.34	25.23	22.14	1.19	2230.0	1.35	1.30	1.29	1.25	1.31
2270.0	6.50	6.51	6.55	6.51	0.05	23.98	24.22	22.90	1.16	2270.0	1.42	1.31	1.29	1.28	1.33
2310.0	6.59	6.62	6.70	6.65	0.11	23.47	23.48	22.88	1.35	2310.0	1.47	1.30	1.29	1.31	1.34
2350.0	6.42	6.46	6.54	6.48	0.12	21.49	22.39	21.33	1.36	2350.0	1.43	1.26	1.27	1.30	1.33

¹ Total Loss = Insertion Loss + 6dB Splitter Loss

REV. X2

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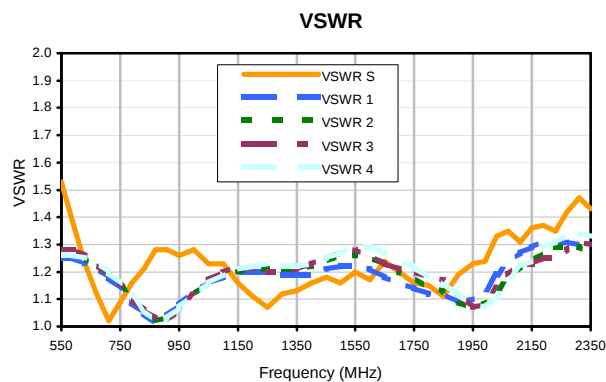
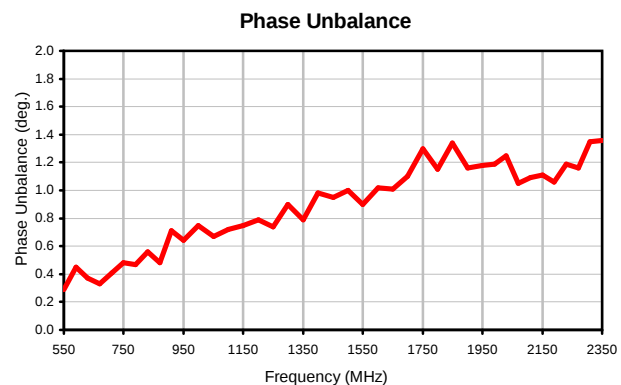
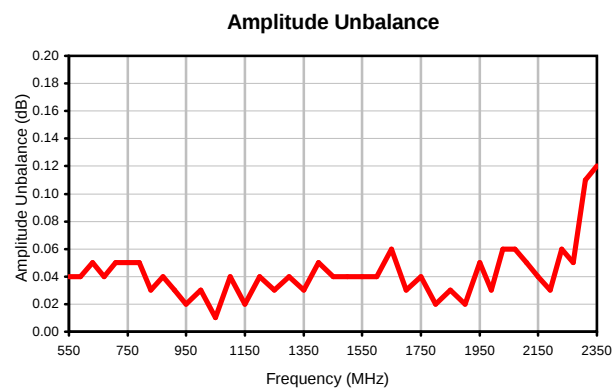
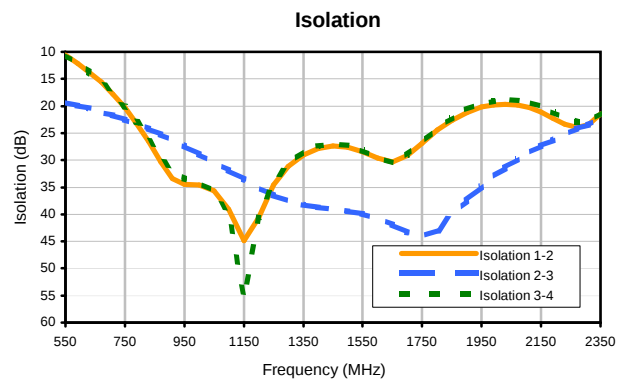
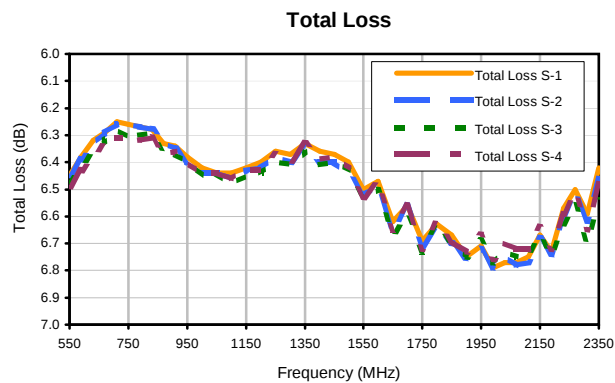
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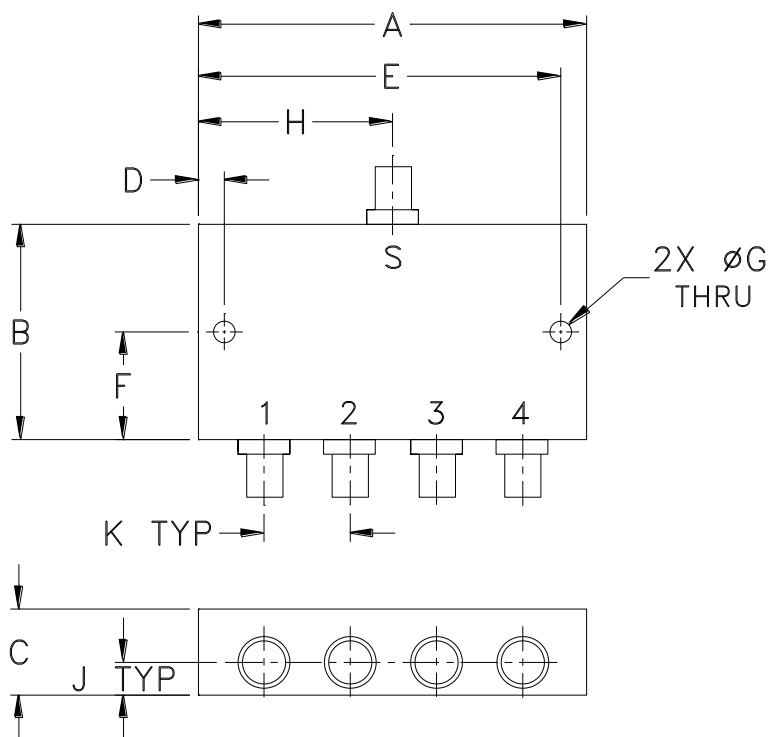
Typical Performance Curves



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Outline Dimensions

UU188



CASE#	A	B	C	D	E	F	G	H	J	K	WT. GRAMS
UU188	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)	260

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.



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RF/IF MICROWAVE COMPONENTS

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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	-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