

Engineering Development Model

Power Splitter/Combiner ZN4PD1-ED12591/1

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.

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CASE STYLE : UU846

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter	Min.	Typ.	Max.	Units
Frequency	350		6000	MHz
Isolation		26		dB
Insertion Loss Above 6.0 dB		1.05		dB
Phase Unbalance		2.25		deg.
Amplitude Unbalance		0.10		dB
VSWR	SUM Port	1.30		(:1)
	OUT Ports	1.21		(:1)

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

COAXIAL CONNECTIONS	
SUM PORT	3
PORT 1	1
PORT 2	2
PORT 3	4
PORT 4	5

Functional Diagram



4 Way-0° Power Splitter/Combiner

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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹				AMP UNBAL. (dB)	ISOLATION			PHASE UNBAL. (Deg)	FREQ. (MHz)	VSWR				
	S1	S2	S3	S4		1-2	2-3	3-4			S	1	2	3	4
200.0	6.69	6.65	6.65	6.66	0.04	9.12	17.91	9.11	0.33	200.0	1.94	1.23	1.22	1.22	1.22
250.0	6.38	6.34	6.34	6.35	0.04	11.85	19.42	11.85	0.30	250.0	1.46	1.11	1.11	1.10	1.11
300.0	6.25	6.21	6.21	6.22	0.03	15.62	21.29	15.65	0.32	300.0	1.14	1.06	1.06	1.05	1.05
350.0	6.26	6.22	6.23	6.23	0.03	20.78	23.80	20.87	0.38	350.0	1.12	1.05	1.06	1.05	1.05
400.0	6.31	6.27	6.28	6.28	0.04	26.99	27.30	27.22	0.39	400.0	1.23	1.07	1.08	1.07	1.07
450.0	6.33	6.29	6.30	6.31	0.04	28.52	32.66	28.55	0.45	450.0	1.26	1.09	1.09	1.08	1.08
500.0	6.33	6.28	6.29	6.30	0.04	26.58	42.85	26.46	0.45	500.0	1.21	1.10	1.11	1.10	1.09
550.0	6.33	6.28	6.29	6.30	0.05	25.27	37.41	25.16	0.47	550.0	1.16	1.10	1.11	1.10	1.09
600.0	6.36	6.30	6.31	6.32	0.05	23.80	31.51	23.78	0.52	600.0	1.20	1.10	1.11	1.10	1.09
650.0	6.42	6.37	6.38	6.39	0.05	22.33	28.54	22.39	0.52	650.0	1.31	1.09	1.10	1.10	1.09
700.0	6.49	6.44	6.45	6.46	0.05	21.51	26.88	21.64	0.55	700.0	1.42	1.10	1.11	1.11	1.09
750.0	6.53	6.48	6.49	6.50	0.05	21.62	25.99	21.80	0.59	750.0	1.46	1.12	1.13	1.12	1.10
800.0	6.53	6.48	6.50	6.50	0.04	22.95	25.64	23.18	0.62	800.0	1.45	1.13	1.14	1.13	1.11
850.0	6.50	6.46	6.47	6.47	0.04	25.65	25.76	25.88	0.66	850.0	1.37	1.14	1.14	1.14	1.11
900.0	6.46	6.43	6.44	6.43	0.03	28.59	26.37	28.68	0.72	900.0	1.28	1.12	1.12	1.12	1.10
950.0	6.44	6.42	6.42	6.42	0.03	27.40	27.55	27.32	0.76	950.0	1.20	1.09	1.08	1.09	1.07
970.0	6.44	6.41	6.42	6.42	0.03	26.21	28.21	26.16	0.79	970.0	1.19	1.07	1.07	1.08	1.05
980.0	6.44	6.42	6.42	6.42	0.03	25.67	28.59	25.64	0.81	980.0	1.18	1.07	1.06	1.07	1.04
990.0	6.44	6.42	6.42	6.42	0.03	25.18	29.00	25.16	0.83	990.0	1.18	1.06	1.05	1.06	1.04
1000.0	6.45	6.42	6.42	6.42	0.03	24.74	29.45	24.74	0.84	1000.0	1.18	1.05	1.04	1.05	1.03
1100.0	6.47	6.44	6.44	6.45	0.03	23.60	37.13	23.73	0.88	1100.0	1.16	1.07	1.05	1.04	1.05
1200.0	6.52	6.49	6.48	6.49	0.04	26.34	36.81	26.49	0.92	1200.0	1.04	1.11	1.09	1.08	1.08
1300.0	6.55	6.52	6.51	6.52	0.04	24.22	29.40	24.19	1.09	1300.0	1.20	1.08	1.07	1.07	1.05
1400.0	6.64	6.63	6.61	6.63	0.02	23.30	26.47	23.43	1.07	1400.0	1.38	1.10	1.11	1.11	1.09
1500.0	6.65	6.64	6.63	6.64	0.01	28.83	25.57	28.76	1.25	1500.0	1.37	1.15	1.14	1.15	1.12
1600.0	6.62	6.61	6.61	6.62	0.01	24.74	26.28	24.32	1.42	1600.0	1.28	1.10	1.09	1.10	1.06
1700.0	6.68	6.66	6.66	6.67	0.02	19.79	28.86	19.73	1.43	1700.0	1.35	1.04	1.04	1.03	1.06
1800.0	6.74	6.71	6.71	6.73	0.03	19.82	33.16	19.91	1.65	1800.0	1.41	1.17	1.15	1.17	1.18
1900.0	6.73	6.70	6.70	6.71	0.04	22.98	33.40	23.16	1.74	1900.0	1.33	1.24	1.21	1.24	1.22
2000.0	6.75	6.73	6.75	6.74	0.02	27.14	29.61	27.64	1.78	2000.0	1.33	1.25	1.22	1.26	1.22
2100.0	6.83	6.83	6.86	6.83	0.03	37.24	27.54	38.84	1.59	2100.0	1.41	1.26	1.23	1.27	1.21
2200.0	6.85	6.86	6.87	6.83	0.04	25.38	27.16	24.15	1.79	2200.0	1.35	1.18	1.17	1.19	1.13
2300.0	6.84	6.84	6.86	6.84	0.02	19.09	28.40	18.40	1.87	2300.0	1.34	1.05	1.02	1.02	1.03
2400.0	6.94	6.93	6.95	6.96	0.03	17.90	31.80	17.41	1.90	2400.0	1.51	1.23	1.17	1.20	1.22
2500.0	7.00	6.97	6.98	7.01	0.04	20.50	37.16	20.16	1.95	2500.0	1.52	1.39	1.31	1.36	1.36
2600.0	6.93	6.92	6.91	6.93	0.02	27.41	34.77	27.47	2.06	2600.0	1.34	1.41	1.34	1.38	1.37
2700.0	6.91	6.94	6.93	6.93	0.03	39.45	30.35	44.09	2.23	2700.0	1.31	1.36	1.31	1.35	1.31
2800.0	6.98	7.05	7.02	7.00	0.07	30.30	28.09	29.14	2.30	2800.0	1.43	1.32	1.29	1.32	1.27
2900.0	7.01	7.11	7.06	7.05	0.09	20.83	27.05	20.46	2.56	2900.0	1.41	1.19	1.19	1.19	1.15
3000.0	7.18	7.26	7.22	7.22	0.08	17.24	26.69	17.12	2.73	3000.0	1.35	1.10	1.03	1.10	1.07
3100.0	7.61	7.70	7.67	7.67	0.09	17.39	27.10	17.45	2.94	3100.0	1.28	1.36	1.26	1.34	1.32
3200.0	7.37	7.42	7.39	7.41	0.05	22.70	28.32	23.01	2.89	3200.0	1.41	1.53	1.42	1.50	1.47
3300.0	7.17	7.22	7.19	7.19	0.05	30.18	26.75	29.31	3.08	3300.0	1.39	1.49	1.42	1.47	1.44
3400.0	7.10	7.16	7.14	7.10	0.06	23.13	25.27	22.96	3.32	3400.0	1.40	1.36	1.33	1.37	1.33
3500.0	7.05	7.14	7.12	7.07	0.08	19.13	24.78	19.28	3.51	3500.0	1.36	1.20	1.21	1.24	1.19
3600.0	7.15	7.22	7.20	7.17	0.08	16.88	25.51	17.00	3.60	3600.0	1.44	1.12	1.10	1.13	1.11
3700.0	7.31	7.36	7.34	7.35	0.06	17.22	27.58	17.35	3.71	3700.0	1.61	1.29	1.24	1.26	1.28
3800.0	7.29	7.34	7.32	7.34	0.06	21.01	30.86	21.33	3.84	3800.0	1.53	1.42	1.35	1.37	1.40
3900.0	7.14	7.23	7.19	7.21	0.09	23.23	33.63	23.11	3.69	3900.0	1.21	1.36	1.32	1.32	1.35
4000.0	7.11	7.29	7.21	7.24	0.18	18.78	32.42	18.38	3.73	4000.0	1.21	1.29	1.28	1.27	1.27
4100.0	7.13	7.38	7.28	7.31	0.25	17.73	30.52	17.34	3.77	4100.0	1.30	1.34	1.36	1.36	1.33
4200.0	7.10	7.37	7.25	7.32	0.26	18.67	29.66	18.38	3.69	4200.0	1.15	1.36	1.38	1.40	1.37
4300.0	7.21	7.43	7.31	7.42	0.22	19.34	30.10	19.50	3.59	4300.0	1.27	1.35	1.35	1.36	1.37
4400.0	7.34	7.53	7.39	7.53	0.19	20.62	32.50	21.33	3.77	4400.0	1.41	1.35	1.34	1.33	1.38
4500.0	7.29	7.47	7.35	7.47	0.18	23.00	37.55	23.62	4.09	4500.0	1.28	1.33	1.32	1.29	1.35
4700.0	7.34	7.56	7.52	7.53	0.23	22.16	34.32	21.76	4.57	4700.0	1.30	1.29	1.33	1.32	1.31
4900.0	7.38	7.56	7.52	7.56	0.19	20.11	29.92	20.79	4.45	4900.0	1.23	1.27	1.31	1.32	1.29
5000.0	7.62	7.77	7.70	7.82	0.19	21.11	29.73	22.02	4.53	5000.0	1.56	1.35	1.36	1.36	1.36
5100.0	7.62	7.77	7.69	7.86	0.25	27.36	31.25	27.36	4.64	5100.0	1.51	1.35	1.36	1.33	1.37
5300.0	7.43	7.77	7.63	7.80	0.37	20.51	53.99	20.15	4.60	5300.0	1.18	1.21	1.25	1.21	1.29
5500.0	7.70	8.07	7.89	8.08	0.38	20.89	30.98	20.63	4.62	5500.0	1.11	1.23	1.33	1.26	1.32
5700.0	7.85	8.14	7.97	8.29	0.44	18.91	30.53	18.99	4.33	5700.0	1.38	1.26	1.34	1.27	1.37
6000.0	7.82	8.17	8.04	8.17	0.34	20.51	31.74	19.74	4.89	6000.0	1.04	1.24	1.32	1.20	1.30
6100.0	8.43	8.73	8.74	8.84	0.41	16.56	26.27	15.39	5.38	6100.0	1.78	1.01	1.11	1.02	1.08

¹Total Loss = Insertion Loss + 6dB Splitter Loss

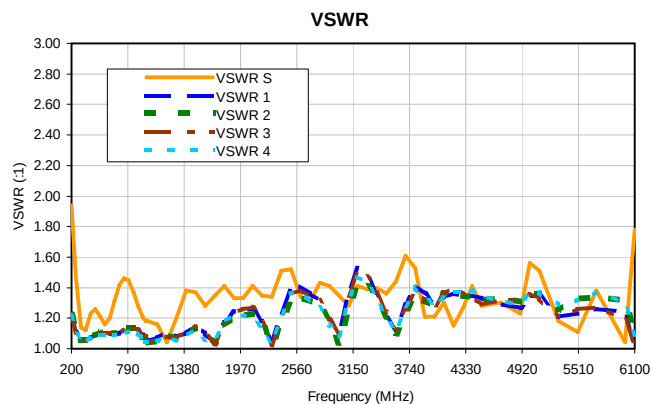
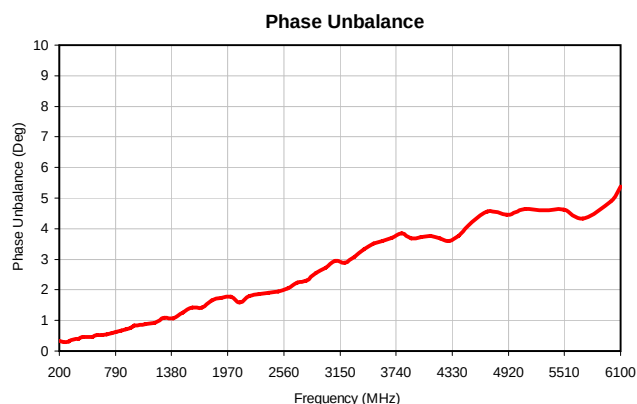
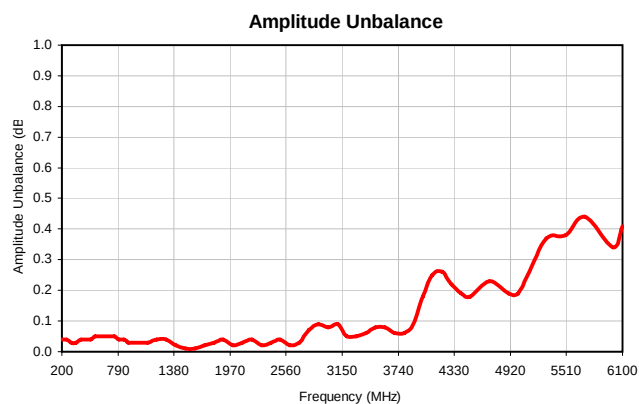
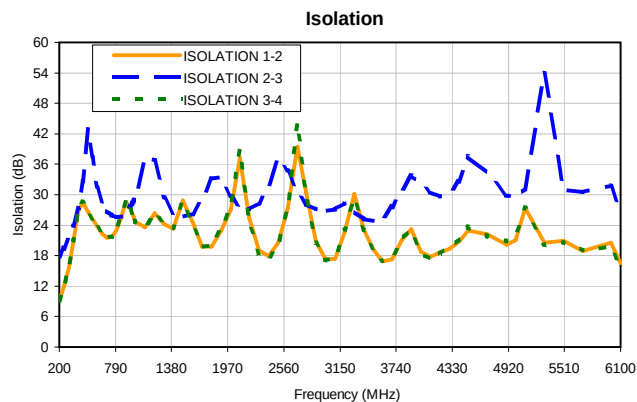
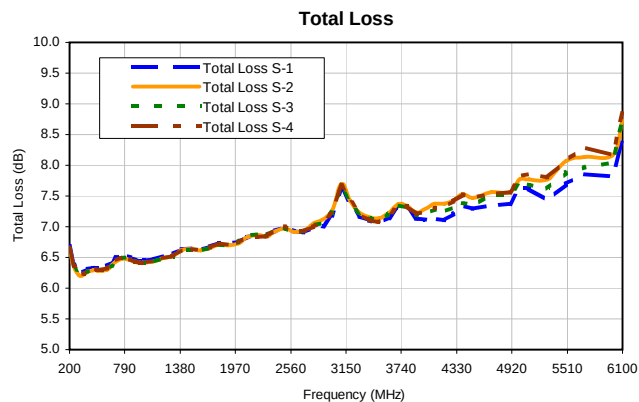


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IF/RF MICROWAVE COMPONENTS

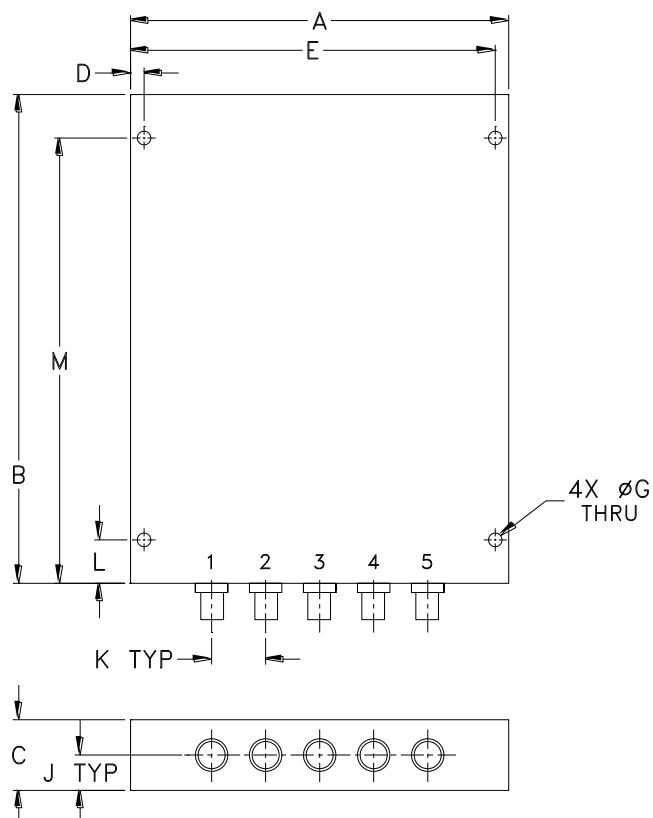
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Typical Performance Curves



Outline Dimensions

UU846



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
UU846	3.50 (88.90)	4.50 (114.30)	.65 (16.51)	.125 (3.18)	3.375 (85.73)	-- --	.125 (3.18)	-- --	.33 (8.38)	.50 (12.70)	.400 (10.16)	4.100 (104.14)	288

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



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