

# Power Splitter/Combiner

## ZN8PD-642W-S+

8 Way-0° 50Ω 1800 to 6400 MHz

### Maximum Ratings

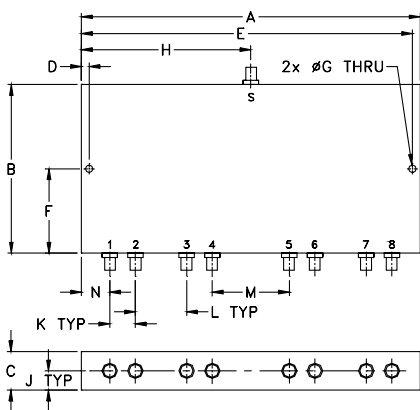
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	10W max.
Internal Dissipation	0.875W max.

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

### Coaxial Connections

SUM PORT	S(COM)
PORT 1,2,3,.....,8	1,2,3,.....,8

### Outline Drawing



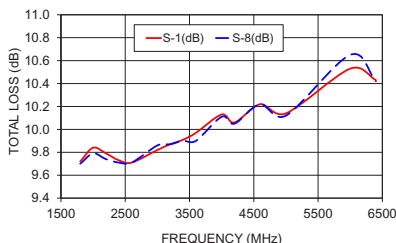
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
6.60	3.28	.75	.150	6.45	1.64	.144
167.64	83.31	19.05	3.81	163.83	41.66	3.66
H	J	K	L	M	N	wt
3.30	.38	.500	1.000	1.500	0.550	grams
83.82	9.65	12.70	25.4	38.1	13.97	360

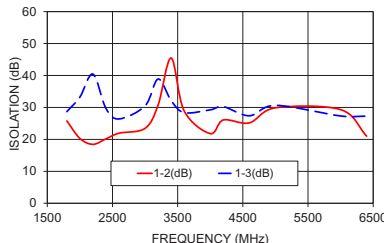
### Electrical Schematic



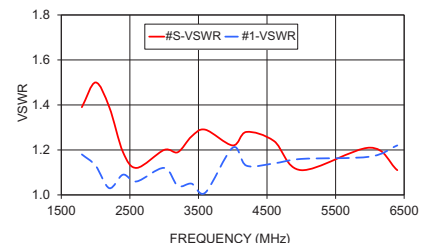
ZN8PD-642W-S+ TOTAL LOSS



ZN8PD-642W-S+ ISOLATION



ZN8PD-642W-S+ VSWR



### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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/WCLStore/terms.jsp](http://www.minicircuits.com/WCLStore/terms.jsp)

### Features

- wideband, 1800 to 6400 MHz
- low insertion loss, 1.5 dB typ.
- low amplitude unbalance, 0.2 dB typ.
- excellent output VSWR, 1.15:1 typ.
- DC PASS from sum port to output ports

### Applications

- high band PCS
- UNII
- WIMAX
- WiFi
- bluetooth

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
<b>Frequency Range</b>		1800		6400	MHz
<b>Insertion Loss</b> (above theoretical 9.0 dB)	1800-3200 3200-6400	—	0.9 1.5	1.4 2.3	dB
<b>Isolation</b>	1800-3200 3200-6400	15 18	20 25	—	dB
<b>Phase Unbalance</b>	1800-3200 3200-6400	—	2 5	8 12	Degree
<b>Amplitude Unbalance</b>	1800-3200 3200-6400	—	0.15 0.30	0.5 0.7	dB
<b>VSWR (Port S)</b>	1800-3200 3200-6400	—	1.4 1.2	—	:1
<b>VSWR (Port 1-8)</b>	1800-3200 3200-6400	—	1.15 1.15	—	:1

1. Over -55°C to +55°C. Derate linearly to 20% of rating at 100°C

### Typical Performance Data

Freq. (MHz)	Total Loss <sup>1</sup> (dB)						Amp. Unb. (dB)	Isolation (dB)				Phase Unb. (deg.)	VSWR S	VSWR 1	VSWR 8
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-3	3-4	5-6				
1800	9.72	9.67	9.66	9.64	9.77	9.70	0.16	25.78	28.68	26.43	24.46	1.73	1.39	1.18	1.19
2000	9.84	9.80	9.83	9.81	9.92	9.79	0.13	20.29	33.24	20.60	19.95	1.89	1.50	1.13	1.15
2200	9.79	9.77	9.74	9.72	9.81	9.74	0.14	18.45	40.43	18.75	18.57	1.44	1.39	1.03	1.09
2400	9.73	9.74	9.70	9.66	9.80	9.71	0.15	20.16	29.69	19.86	19.97	1.49	1.19	1.09	1.07
2600	9.71	9.75	9.73	9.71	9.83	9.71	0.12	21.93	26.40	21.99	22.22	1.40	1.12	1.06	1.04
3000	9.82	9.87	9.88	9.84	9.99	9.86	0.17	23.46	30.50	23.32	23.43	1.64	1.20	1.12	1.11
3200	9.87	9.90	9.90	9.86	9.99	9.87	0.13	30.75	38.89	28.89	29.31	2.00	1.19	1.04	1.07
3400	9.91	9.91	9.90	9.88	10.03	9.90	0.16	45.47	32.14	35.75	37.68	2.11	1.26	1.05	1.02
3600	9.97	9.97	9.95	9.96	10.03	9.90	0.13	28.90	28.38	27.91	28.25	2.21	1.29	1.01	1.03
4000	10.13	10.19	10.24	10.28	10.34	10.11	0.28	21.81	29.25	20.71	20.89	2.25	1.22	1.21	1.12
4200	10.06	10.14	10.15	10.13	10.23	10.05	0.20	26.07	30.25	24.95	23.54	2.48	1.28	1.13	1.07
4600	10.22	10.27	10.19	10.13	10.30	10.22	0.18	25.17	27.39	23.49	25.46	3.48	1.24	1.14	1.05
5000	10.14	10.17	10.16	10.12	10.35	10.12	0.24	29.89	30.66	32.53	29.80	4.17	1.11	1.16	1.11
6000	10.53	10.56	10.49	10.39	10.78	10.65	0.38	29.32	27.33	29.76	29.12	5.23	1.21	1.17	1.15
6400	10.43	10.46	10.48	10.49	10.59	10.42	0.23	21.01	27.28	20.87	21.95	5.65	1.11	1.22	1.11

1. Total Loss = Insertion Loss + 9dB theoretical splitter loss.



Generic photo used for illustration purposes only  
CASE STYLE: UU1676

Connectors	Model
SMA	ZN8PD-642W-S+

### +RoHS Compliant

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



# 8 Way-0° Power Splitter/Combiner

# ZN8PD-642W-S+

## Typical Performance Data

FREQ. (MHz)	TOTAL LOSS <sup>1</sup> (dB)						AMP. UNBAL. (dB)	ISOLATION (dB)				PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-3	3-4	5-6			S	1	8
1800	9.72	9.67	9.66	9.64	9.77	9.70	0.16	25.78	28.68	26.43	24.46	1.73	1800	1.39	1.18	1.19
1900	9.81	9.76	9.76	9.73	9.86	9.78	0.14	22.70	30.39	23.32	21.99	2.00	1900	1.47	1.17	1.19
2000	9.84	9.80	9.83	9.81	9.92	9.79	0.13	20.29	33.24	20.60	19.95	1.89	2000	1.50	1.13	1.15
2100	9.79	9.77	9.77	9.75	9.83	9.74	0.11	18.89	39.06	18.75	18.57	1.49	2100	1.46	1.07	1.09
2200	9.79	9.77	9.74	9.72	9.81	9.74	0.14	18.45	40.43	18.09	18.17	1.44	2200	1.39	1.03	1.02
2300	9.77	9.76	9.72	9.69	9.81	9.74	0.16	18.91	33.63	18.52	18.68	1.45	2300	1.31	1.07	1.05
2400	9.73	9.74	9.70	9.66	9.80	9.71	0.15	20.16	29.69	19.86	19.97	1.49	2400	1.19	1.09	1.07
2600	9.71	9.75	9.73	9.71	9.83	9.71	0.12	21.93	26.40	21.99	22.22	1.40	2600	1.12	1.06	1.04
2800	9.83	9.88	9.89	9.83	10.00	9.86	0.17	21.09	26.79	21.06	21.39	1.43	2800	1.33	1.12	1.08
3000	9.82	9.87	9.88	9.84	9.99	9.86	0.17	23.46	30.50	23.32	23.43	1.64	3000	1.19	1.12	1.11
3200	9.87	9.90	9.90	9.86	9.99	9.87	0.13	30.75	38.89	28.89	29.31	2.00	3200	1.19	1.04	1.07
3400	9.91	9.91	9.90	9.88	10.03	9.90	0.16	45.47	32.14	35.75	37.68	2.11	3400	1.26	1.05	1.02
3600	9.97	9.97	9.95	9.96	10.03	9.90	0.13	28.90	28.38	27.91	28.25	2.21	3600	1.29	1.01	1.03
3800	10.11	10.12	10.14	10.13	10.20	10.02	0.18	22.38	27.96	21.40	21.68	2.52	3800	1.21	1.14	1.11
4000	10.13	10.19	10.24	10.28	10.34	10.11	0.28	21.81	29.25	20.71	20.89	2.25	4000	1.22	1.21	1.12
4200	10.06	10.14	10.15	10.13	10.23	10.05	0.20	26.07	30.25	24.95	23.54	2.48	4200	1.28	1.13	1.07
4400	10.08	10.14	10.11	10.05	10.19	10.07	0.14	26.96	28.82	25.04	25.02	2.81	4400	1.08	1.13	1.06
4600	10.22	10.27	10.19	10.13	10.30	10.22	0.18	25.17	27.39	23.49	25.46	3.48	4600	1.24	1.14	1.05
4800	10.22	10.24	10.18	10.13	10.33	10.20	0.20	31.90	27.47	29.17	33.79	4.11	4800	1.27	1.06	1.03
5000	10.14	10.17	10.16	10.12	10.35	10.12	0.24	29.89	30.66	32.53	29.80	4.17	5000	1.11	1.16	1.11
5200	10.26	10.31	10.32	10.30	10.51	10.25	0.26	22.88	43.58	23.43	23.66	4.44	5200	1.22	1.23	1.12
5400	10.24	10.34	10.40	10.37	10.57	10.26	0.33	24.13	31.54	24.05	25.23	4.79	5400	1.19	1.09	1.08
5600	10.31	10.45	10.48	10.39	10.64	10.35	0.33	28.91	26.02	27.81	31.18	5.22	5600	1.26	1.11	1.12
5800	10.31	10.44	10.40	10.30	10.62	10.40	0.33	29.65	25.19	28.34	29.39	5.44	5800	1.09	1.16	1.12
5900	10.38	10.47	10.41	10.31	10.69	10.50	0.37	32.91	25.83	32.09	30.48	5.21	5900	1.08	1.12	1.11
6000	10.53	10.56	10.49	10.39	10.78	10.65	0.38	29.32	27.33	29.76	29.12	5.23	6000	1.21	1.17	1.15
6100	10.64	10.64	10.56	10.47	10.81	10.73	0.33	24.07	28.93	24.48	25.54	5.28	6100	1.28	1.24	1.17
6200	10.65	10.63	10.54	10.50	10.67	10.61	0.20	21.19	29.42	21.47	22.85	5.34	6200	1.24	1.29	1.18
6400	10.43	10.46	10.48	10.49	10.59	10.42	0.23	21.01	27.28	20.87	21.95	5.65	6400	1.11	1.22	1.11

<sup>1</sup>Total Loss = Insertion Loss + 9dB Splitter Loss



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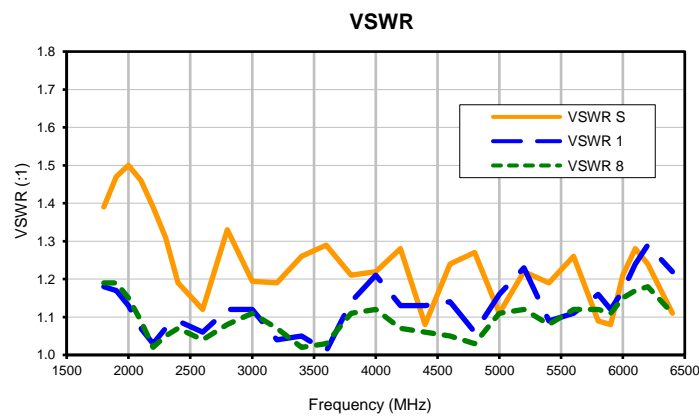
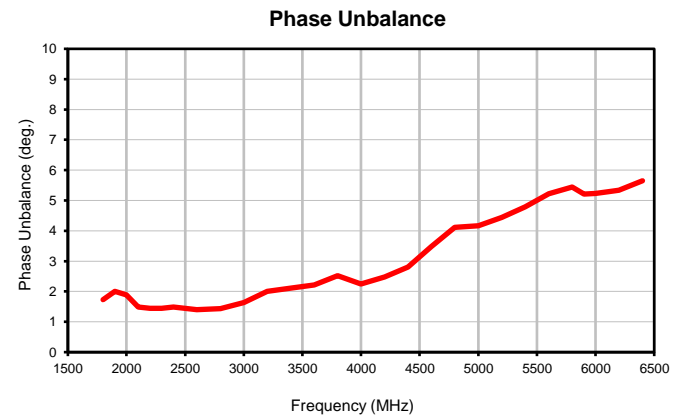
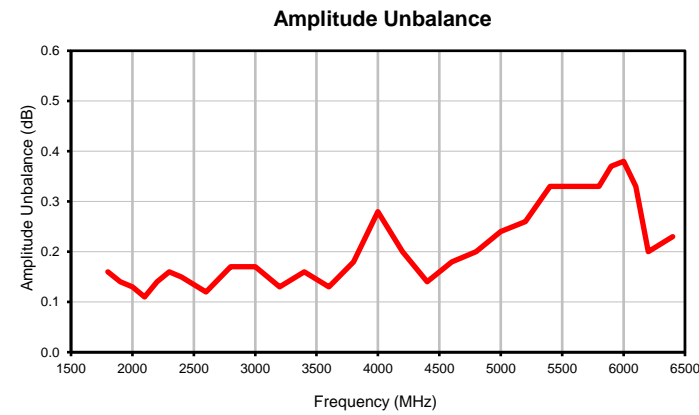
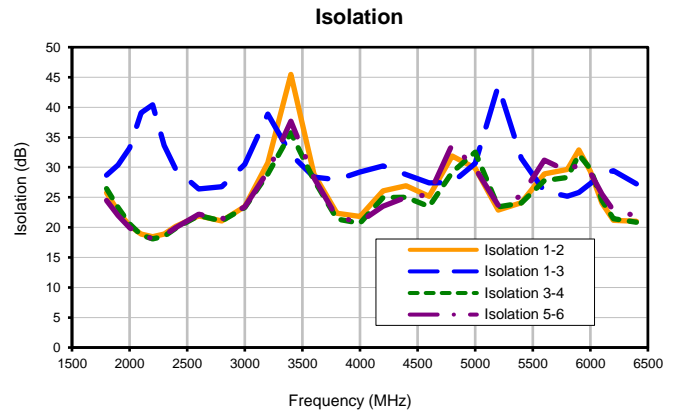
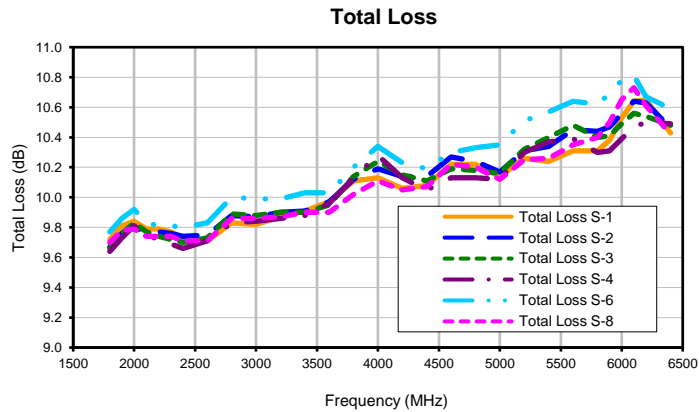


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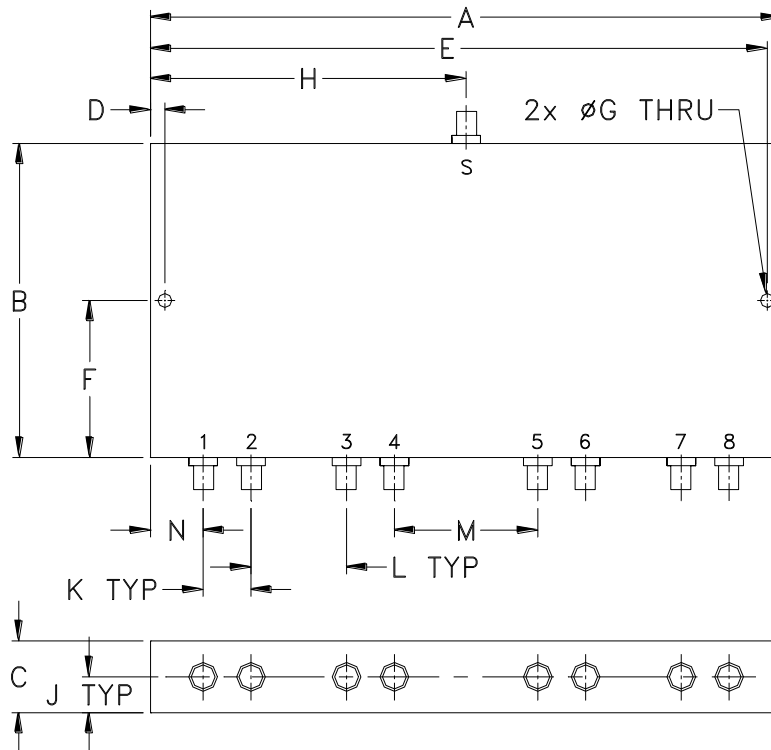
REV. OR  
ZN8PD-642W-S+  
1/18/2019

## Typical Performance Curves



## Outline Dimensions

UU1676



CASE#	A	B	C	D	E	F	G	H	J	K	L
UU1676	6.60 (167.64)	3.28 (83.31)	.75 (19.05)	.150 (3.81)	6.45 (163.83)	1.64 (41.66)	.144 (3.66)	3.30 (83.82)	.38 (9.53)	.500 (12.70)	1.000 (25.40)

CASE#	M	N	WT. GRAMS
UU1676	1.500 (38.10)	.550 (13.97)	360

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.



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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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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