

Power Splitter/Combiner

8 Way-0° 50Ω 2000 to 11000 MHz

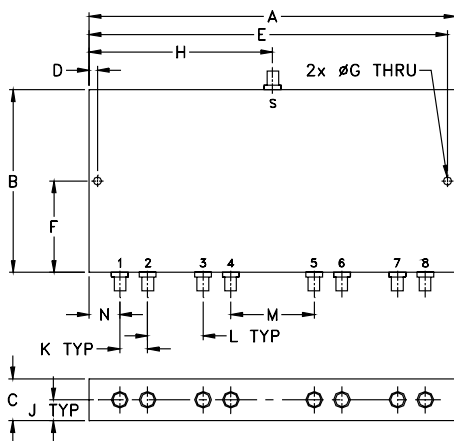
Maximum Ratings

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.
DC Current	1.2A(150mA for each port)
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

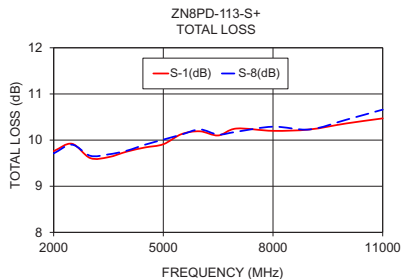
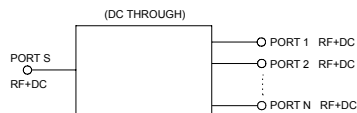
Outline Drawing



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



Features

- wideband, 2000 to 11000 MHz
- low insertion loss, 1.7 dB typ.
- low amplitude unbalance, 0.3 dB typ.
- DC PASS from sum port to output ports

Applications

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

Electrical Specifications at 25°C

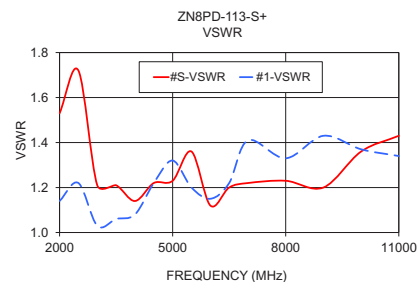
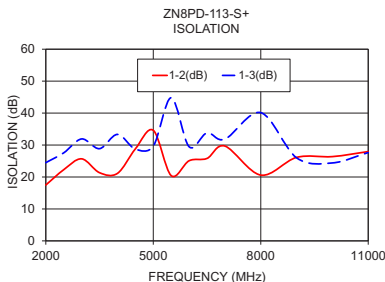
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range	2000-4600	2000	—	11000	MHz
	4600-7200	—	0.9	1.4	dB
	7200-11000	—	1.3	1.9	dB
Insertion Loss (above theoretical 9.0 dB)	2000-4600	—	1.9	2.6	dB
	4600-7200	15	20	—	dB
	7200-11000	17	22	—	dB
Isolation	2000-4600	15	20	—	dB
	4600-7200	17	22	—	dB
	7200-11000	15	20	—	dB
Phase Unbalance	2000-4600	—	3	6	Degree
	4600-7200	—	6	10	Degree
	7200-11000	—	8	15	Degree
Amplitude Unbalance	2000-4600	—	0.3	0.5	dB
	4600-7200	—	0.4	0.7	dB
	7200-11000	—	0.5	0.9	dB
VSWR (Port S)	2000-4600	—	1.55	1.95	:1
	4600-7200	—	1.30	1.60	:1
	7200-11000	—	1.50	1.95	:1
VSWR (Port 1-8)	2000-4600	—	1.33	1.60	:1
	4600-7200	—	1.33	1.60	:1
	7200-11000	—	1.45	2.2	:1

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

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (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				
2000	9.76	9.75	9.75	9.77	9.68	9.71	0.09	17.49	24.49	28.33	19.30	1.68	1.53	1.14	1.14
2500	9.92	9.91	9.87	9.89	9.87	9.90	0.06	22.28	27.55	33.24	23.67	1.42	1.72	1.22	1.19
3000	9.61	9.62	9.57	9.61	9.60	9.66	0.09	25.68	31.91	41.40	22.10	2.22	1.21	1.03	1.06
3500	9.63	9.67	9.65	9.69	9.66	9.69	0.06	21.34	28.87	38.51	18.63	3.01	1.21	1.06	1.09
4000	9.75	9.83	9.77	9.78	9.81	9.77	0.08	21.13	33.33	33.96	18.57	3.49	1.14	1.08	1.09
4500	9.84	9.94	9.97	9.84	9.97	9.90	0.13	28.80	28.72	32.85	23.34	2.87	1.22	1.22	1.26
5000	9.91	9.99	9.91	9.81	9.93	10.01	0.20	34.61	29.63	32.93	40.77	3.18	1.23	1.32	1.37
5500	10.13	10.25	10.17	10.05	10.14	10.12	0.20	20.43	44.81	34.93	21.51	4.80	1.36	1.20	1.19
6000	10.19	10.28	10.27	10.15	10.47	10.23	0.33	25.08	29.47	35.44	27.44	6.40	1.12	1.15	1.15
6500	10.10	10.18	10.17	10.07	10.25	10.12	0.24	25.81	33.82	34.91	28.84	5.11	1.20	1.22	1.21
7000	10.25	10.33	10.17	10.13	10.29	10.18	0.32	29.68	31.83	38.17	29.47	5.38	1.22	1.41	1.35
8000	10.20	10.21	10.30	10.29	10.40	10.29	0.22	20.59	40.14	35.50	20.44	6.39	1.23	1.33	1.27
9000	10.23	10.37	10.27	10.25	10.25	10.23	0.15	26.13	26.00	32.38	23.71	6.47	1.20	1.43	1.36
10000	10.36	10.51	10.49	10.56	10.53	10.44	0.22	26.38	24.40	36.09	24.54	8.13	1.36	1.37	1.26
11000	10.47	10.61	10.76	10.50	10.79	10.66	0.32	27.95	27.65	30.03	28.65	7.25	1.43	1.34	1.30

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



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.
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ZN8PD-113-S+



Generic photo used for illustration purposes only

CASE STYLE: UU1676

Connectors	Model
SMA	ZN8PD-113-S+

+RoHS Compliant

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

HT-Series
Tight Spot
SMA Wrench

8 Way-0° Power Splitter/Combiner

ZN8PD-113-S+

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	S-6	S-8		1-2	1-3	3-4	5-6			S	1	8
2000	9.76	9.75	9.75	9.77	9.68	9.71	0.09	17.49	24.49	28.33	19.30	1.68	2000	1.53	1.14	1.14
2100	9.66	9.65	9.64	9.68	9.59	9.61	0.11	17.98	24.91	29.22	20.04	1.62	2100	1.34	1.17	1.16
2200	9.70	9.70	9.68	9.73	9.63	9.65	0.12	18.43	25.15	30.18	20.64	1.56	2200	1.41	1.20	1.18
2300	9.82	9.81	9.78	9.84	9.75	9.78	0.11	19.09	25.49	31.19	21.32	1.50	2300	1.61	1.23	1.20
2400	9.91	9.91	9.87	9.91	9.85	9.88	0.07	20.30	26.24	32.21	22.37	1.45	2400	1.73	1.23	1.20
2500	9.92	9.91	9.87	9.89	9.87	9.90	0.06	22.28	27.55	33.24	23.67	1.42	2500	1.72	1.22	1.19
2600	9.84	9.83	9.80	9.81	9.82	9.84	0.04	24.99	29.59	34.39	24.44	1.44	2600	1.60	1.18	1.16
2700	9.73	9.73	9.71	9.72	9.74	9.76	0.06	27.38	32.45	35.77	24.04	1.52	2700	1.44	1.14	1.13
2800	9.66	9.66	9.63	9.66	9.67	9.70	0.08	27.41	35.10	37.44	23.03	1.69	2800	1.32	1.10	1.11
2900	9.63	9.63	9.58	9.62	9.63	9.67	0.09	26.26	34.53	39.41	22.29	1.95	2900	1.26	1.06	1.08
3000	9.61	9.62	9.57	9.61	9.60	9.66	0.09	25.68	31.91	41.40	22.10	2.22	3000	1.21	1.03	1.06
3100	9.60	9.61	9.56	9.59	9.58	9.64	0.08	25.82	29.83	42.66	22.22	2.42	3100	1.14	1.02	1.04
3200	9.60	9.61	9.56	9.58	9.56	9.63	0.07	25.93	28.59	42.68	22.11	2.57	3200	1.05	1.02	1.04
3300	9.61	9.62	9.59	9.60	9.58	9.65	0.07	24.92	28.08	41.58	21.26	2.69	3300	1.07	1.04	1.06
3400	9.62	9.65	9.62	9.64	9.61	9.67	0.06	23.06	28.20	40.04	19.91	2.84	3400	1.16	1.06	1.08
3500	9.63	9.67	9.65	9.69	9.66	9.69	0.06	21.34	28.87	38.51	18.63	3.01	3500	1.21	1.06	1.09
3600	9.64	9.68	9.67	9.72	9.69	9.69	0.09	20.19	30.07	37.04	17.76	3.27	3600	1.21	1.05	1.08
3700	9.64	9.69	9.68	9.73	9.71	9.69	0.11	19.64	31.64	35.78	17.38	3.53	3700	1.15	1.04	1.05
3800	9.66	9.72	9.69	9.73	9.73	9.70	0.10	19.66	33.14	34.84	17.45	3.68	3800	1.07	1.03	1.01
3900	9.69	9.76	9.72	9.74	9.75	9.72	0.08	20.18	33.82	34.28	17.87	3.66	3900	1.07	1.05	1.04
4000	9.75	9.83	9.77	9.78	9.81	9.77	0.08	21.13	33.33	33.96	18.57	3.49	4000	1.14	1.08	1.09
4100	9.81	9.90	9.85	9.84	9.88	9.84	0.09	22.47	32.34	33.81	19.48	3.26	4100	1.18	1.12	1.14
4200	9.84	9.95	9.92	9.88	9.95	9.88	0.10	24.14	31.33	33.73	20.52	3.04	4200	1.17	1.15	1.18
4300	9.84	9.95	9.94	9.88	9.96	9.87	0.12	25.98	30.23	33.55	21.63	2.92	4300	1.14	1.18	1.22
4400	9.83	9.94	9.95	9.86	9.96	9.88	0.13	27.57	29.36	33.20	22.58	2.87	4400	1.16	1.20	1.25
4500	9.84	9.94	9.97	9.84	9.97	9.90	0.13	28.80	28.72	32.85	23.34	2.87	4500	1.22	1.22	1.26
4600	9.86	9.96	9.98	9.84	9.98	9.94	0.14	30.06	28.36	32.54	24.07	2.92	4600	1.26	1.23	1.27
4700	9.88	9.97	9.99	9.85	9.98	9.96	0.13	32.22	28.27	32.41	25.23	2.96	4700	1.27	1.24	1.30
4800	9.89	9.97	9.96	9.85	9.97	9.97	0.12	36.85	28.38	32.47	27.28	2.98	4800	1.25	1.27	1.32
5000	9.91	9.99	9.91	9.81	9.93	10.01	0.20	34.61	29.63	32.93	40.77	3.18	5000	1.23	1.32	1.37
5100	9.97	10.04	9.94	9.82	9.96	10.07	0.25	28.19	30.99	33.22	36.01	3.45	5100	1.28	1.34	1.38
5200	10.04	10.12	9.99	9.87	10.02	10.13	0.26	24.60	33.06	33.40	28.40	3.70	5200	1.33	1.33	1.37
5300	10.09	10.19	10.06	9.93	10.07	10.15	0.26	22.34	36.34	33.62	24.66	4.04	5300	1.37	1.30	1.33
5400	10.12	10.23	10.12	10.00	10.11	10.14	0.23	20.99	41.71	34.09	22.56	4.38	5400	1.39	1.26	1.26
5500	10.13	10.25	10.17	10.05	10.14	10.12	0.20	20.43	44.81	34.93	21.51	4.80	5500	1.36	1.20	1.19
5600	10.13	10.25	10.21	10.08	10.18	10.12	0.17	20.53	38.48	35.84	21.35	5.09	5600	1.31	1.16	1.13
5700	10.11	10.22	10.20	10.08	10.23	10.11	0.15	21.30	34.37	36.84	21.97	5.32	5700	1.21	1.13	1.11
5800	10.09	10.19	10.17	10.05	10.29	10.13	0.24	22.49	32.00	36.98	23.30	5.53	5800	1.10	1.13	1.12
5900	10.11	10.21	10.19	10.07	10.38	10.18	0.31	23.98	30.35	36.49	25.31	5.87	5900	1.03	1.14	1.13
6000	10.19	10.28	10.27	10.15	10.47	10.23	0.33	25.08	29.47	35.44	27.44	6.40	6000	1.12	1.15	1.15
6100	10.27	10.35	10.35	10.22	10.52	10.28	0.30	25.22	29.08	34.70	28.68	6.63	6100	1.22	1.16	1.16
6200	10.29	10.34	10.36	10.24	10.48	10.26	0.25	24.60	29.29	34.29	28.42	6.47	6200	1.28	1.16	1.16
6300	10.24	10.29	10.32	10.20	10.40	10.21	0.23	24.16	30.07	34.22	27.71	5.97	6300	1.31	1.16	1.16
6400	10.17	10.23	10.24	10.13	10.32	10.15	0.21	24.46	31.59	34.40	27.70	5.39	6400	1.27	1.18	1.17
6500	10.10	10.18	10.17	10.07	10.25	10.12	0.24	25.81	33.82	34.91	28.84	5.11	6500	1.20	1.22	1.21
6600	10.06	10.16	10.12	10.02	10.23	10.10	0.27	28.67	36.99	35.62	31.44	5.06	6600	1.09	1.27	1.26
6700	10.07	10.18	10.11	10.02	10.23	10.12	0.30	34.38	39.41	36.30	35.15	5.12	6700	1.07	1.34	1.31
6800	10.13	10.23	10.14	10.06	10.26	10.15	0.34	46.07	37.84	36.93	35.27	5.27	6800	1.15	1.38	1.35
6900	10.20	10.29	10.16	10.10	10.28	10.18	0.35	34.21	34.50	37.44	31.79	5.41	6900	1.21	1.40	1.36
7000	10.25	10.33	10.17	10.13	10.29	10.18	0.32	29.68	31.83	38.17	29.47	5.38	7000	1.22	1.41	1.35
7100	10.25	10.30	10.13	10.13	10.28	10.16	0.25	28.01	29.86	39.34	28.64	5.18	7100	1.19	1.41	1.34
7200	10.21	10.23	10.08	10.11	10.26	10.16	0.18	28.22	28.58	41.15	29.01	5.03	7200	1.18	1.42	1.34
7300	10.23	10.21	10.08	10.15	10.27	10.21	0.18	29.56	27.97	43.51	29.69	4.99	7300	1.26	1.45	1.37
7400	10.32	10.27	10.17	10.26	10.34	10.32	0.16	29.66	27.89	46.01	28.37	5.34	7400	1.39	1.49	1.40
7500	10.40	10.35	10.28	10.36	10.42	10.42	0.14	27.30	28.23	46.71	25.67	5.74	7500	1.49	1.51	1.43
7600	10.42	10.38	10.34	10.40	10.45	10.46	0.15	24.67	28.89	45.07	23.41	6.06	7600	1.52	1.51	1.42
7700	10.36	10.35	10.33	10.37	10.41	10.41	0.16	22.62	29.99	41.79	21.78	6.27	7700	1.45	1.48	1.40
7800	10.28	10.28	10.29	10.31	10.36	10.35	0.16	21.25	31.80	39.04	20.70	6.21	7800	1.35	1.41	1.35
7900	10.22	10.23	10.28	10.28	10.36	10.31	0.19	20.57	34.78	36.82	20.24	6.14	7900	1.26	1.35	1.30
8000	10.20	10.21	10.30	10.29	10.40	10.29	0.22	20.59	40.14	35.50	20.44	6.39	8000	1.23	1.33	1.27
8500	10.29	10.35	10.43	10.30	10.39	10.29	0.24	35.90	30.56	33.93	30.70	5.72	8500	1.33	1.60	1.49
9000	10.23	10.37	10.27	10.25	10.25	10.23	0.15	26.13	26.00	32.38	23.71	6.47	9000	1.20	1.43	1.36
9500	10.37	10.54	10.37	10.51	10.38	10.45	0.17	22.84	43.02	32.47	21.77	8.02	9500	1.37	1.27	1.22
10000	10.36	10.51	10.49	10.56	10.53	10.44	0.22	26.38	24.40	36.09	24.54	8.13	10000	1.36	1.37	1.26
10500	10.62	10.78	11.07	10.79	10.94	10.61	0.48	18.98	31.68	33.83	17.71	7.08	10500	1.67	1.60	1.47
11000	10.47	10.61	10.76	10.50	10.79	10.66	0.32	27.95	27.65	30.03	28.65	7.25	11000	1.43	1.34	1.30

¹Total Loss = Insertion Loss + 9dB Splitter Loss

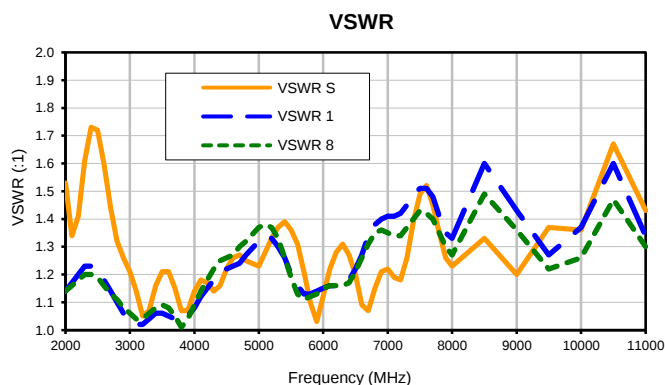
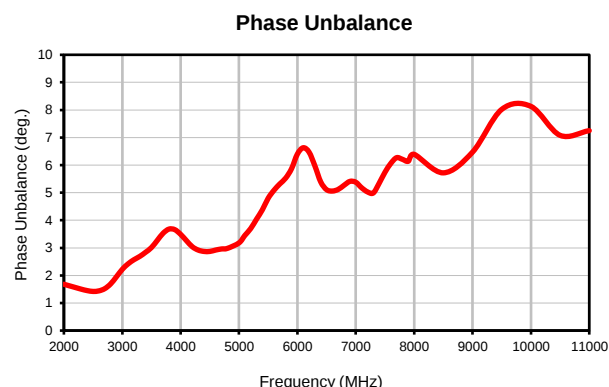
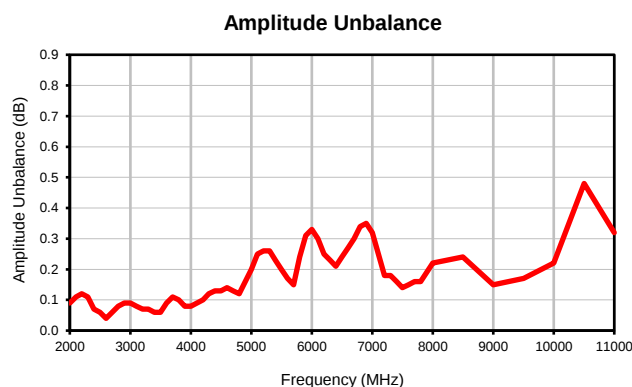
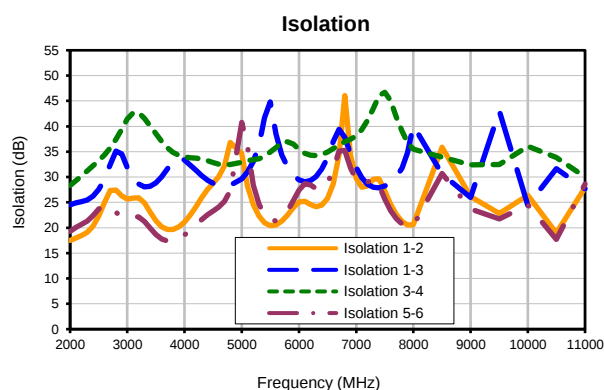
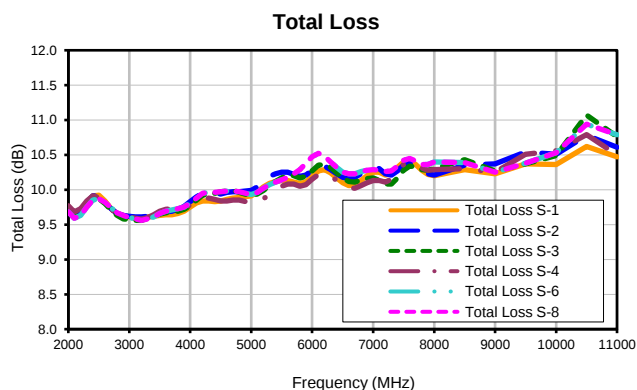


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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

IF/RF MICROWAVE COMPONENTS

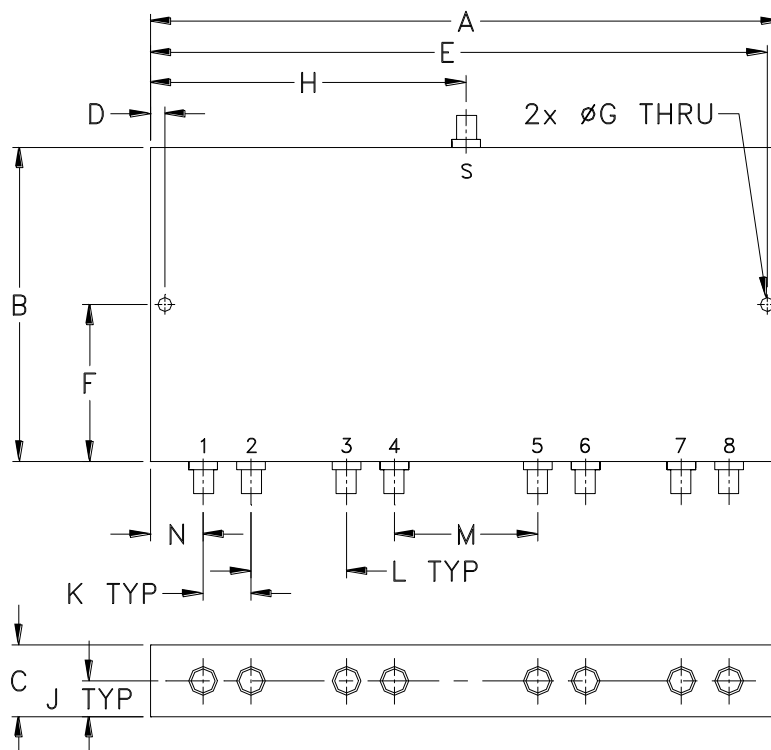
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ZN8PD-113-S+
1/18/2019
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Typical Performance Curves



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.



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



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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
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
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	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215