DC Pass

Power Splitter/Combiner

ZN4PD-642W-S+

4 Way-0° 50Ω 1600 to 6400 MHz

Generic photo used for illustration purposes only

CASE STYLE: UU182

Connectors	Model
SMA	ZN4PD-642W-S+

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

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	1.2W max.
DC Current (each port)	1A max.

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

Coaxial Connections

SUMPORT	S
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4

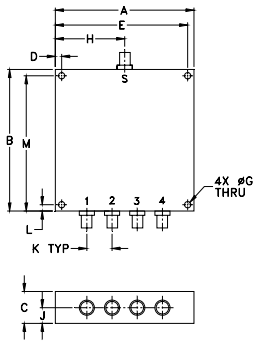
Features

- wideband, 1600 to 6400 MHz
- low insertion loss, 1.0 dB typ.
- low amplitude unbalance, 0.1 dB typ.
- low phase unbalance, 2deg. typ.
- excellent output VSWR, 1.15:1 typ.
- DC Pass from sum port to all output ports

Applications

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

Outline Drawing

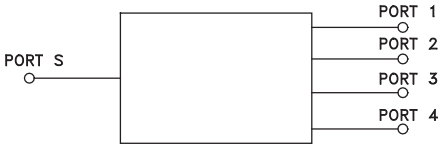


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
2.75	2.80	.63	.125	2.625	_	.125
69.85	71.12	16.00	3.18	66.68	_	3.18

H	J	K	L	M	wt
1.38	.31	.500	.125	2.675	grams
35.05	7.87	12.70	3.18	67.95	140

Electrical Schematic



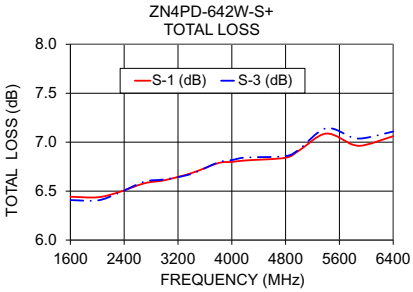
Electrical Specifications at 25°C

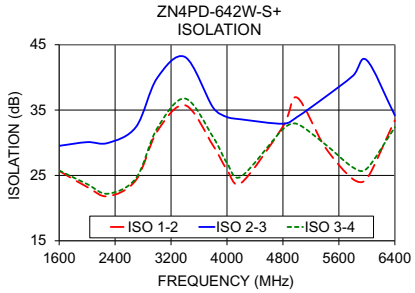
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1600		6400	MHz
Insertion Loss (above theoretical 6.0 dB)	1600 - 4200	—	0.7	1.2	dB
	4200 - 6400	—	1.0	1.6	
Isolation	1600 - 4200	17	23	—	dB
	4200 - 6400	18	25	—	
Phase Unbalance	1600 - 4200	—	2	5	Degree
	4200 - 6400	—	4	8	
Amplitude Unbalance	1600 - 4200	—	0.1	0.4	dB
	4200 - 6400	—	0.2	0.7	
VSWR (Port S)	1600 - 4200	—	1.25	—	:1
	4200 - 6400	—	1.2	—	
VSWR (Port 1-4)	1600 - 4200	—	1.2	—	:1
	4200 - 6400	—	1.15	—	

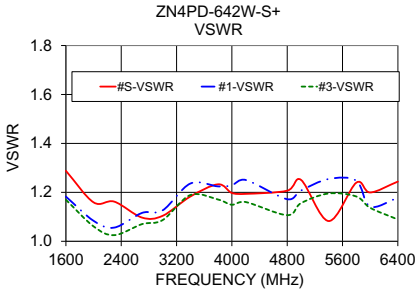
Typical Performance Data

Freq. (MHz)	Total Loss[1] (dB)				Amp. Unb. (dB)	Isolation (dB)			Phase Unb. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	3-4						
1600	6.44	6.41	6.42	6.43	0.03	25.70	29.53	25.76	0.98	1.29	1.18	1.16	1.17	1.16
2000	6.44	6.40	6.42	6.43	0.03	23.23	30.09	23.68	1.19	1.16	1.08	1.06	1.06	1.06
2300	6.48	6.48	6.46	6.47	0.03	21.81	29.98	22.21	1.42	1.16	1.06	1.02	1.03	1.02
2700	6.58	6.60	6.57	6.56	0.03	24.31	32.44	24.60	1.45	1.10	1.12	1.06	1.07	1.07
3000	6.61	6.62	6.60	6.58	0.04	31.71	39.88	32.19	1.67	1.10	1.13	1.07	1.09	1.09
3400	6.68	6.68	6.66	6.64	0.04	35.74	43.12	36.76	1.99	1.18	1.24	1.17	1.19	1.18
3800	6.79	6.79	6.77	6.72	0.07	29.58	35.39	30.88	2.21	1.23	1.22	1.16	1.17	1.15
4000	6.80	6.82	6.78	6.74	0.08	25.87	33.94	26.91	2.25	1.20	1.23	1.15	1.15	1.14
4200	6.81	6.84	6.79	6.75	0.10	23.81	33.58	24.81	2.30	1.19	1.25	1.16	1.16	1.15
4800	6.84	6.86	6.86	6.81	0.05	32.49	32.91	32.09	2.57	1.21	1.17	1.07	1.11	1.10
5000	6.91	6.93	6.94	6.89	0.05	36.92	33.92	32.89	2.63	1.25	1.21	1.11	1.16	1.14
5400	7.09	7.14	7.12	7.07	0.07	29.36	36.97	29.80	3.02	1.08	1.25	1.17	1.20	1.18
5800	6.97	7.05	7.01	6.92	0.13	24.44	40.24	26.23	3.46	1.24	1.25	1.18	1.18	1.19
6000	6.97	7.04	7.02	6.95	0.10	24.50	42.61	26.05	3.78	1.20	1.14	1.14	1.14	1.15
6400	7.06	7.11	7.09	7.05	0.06	33.44	34.19	32.35	4.55	1.24	1.18	1.06	1.09	1.08

1. Total Loss = Insertion Loss + 6dB splitter loss.







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

4 Way-0° Power Splitter/Combiner ZN4PD-642W-S+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (Deg)
	S1	S2	S3	S4		1-2	2-3	3-4	
1600	6.44	6.41	6.42	6.43	0.03	25.70	29.53	25.76	0.98
1800	6.41	6.38	6.39	6.40	0.03	25.15	30.48	25.52	1.05
2000	6.44	6.40	6.42	6.43	0.03	23.23	30.09	23.68	1.19
2200	6.48	6.45	6.45	6.46	0.03	22.01	29.81	22.45	1.42
2300	6.48	6.48	6.46	6.47	0.03	21.81	29.98	22.21	1.42
2500	6.53	6.54	6.51	6.50	0.04	22.31	30.77	22.72	1.42
2700	6.58	6.60	6.57	6.56	0.03	24.31	32.44	24.60	1.45
2900	6.60	6.62	6.59	6.56	0.06	28.29	36.66	28.53	1.70
3000	6.61	6.62	6.60	6.58	0.04	31.71	39.88	32.19	1.67
3400	6.68	6.68	6.66	6.64	0.04	35.74	43.12	36.76	1.99
3600	6.76	6.76	6.73	6.70	0.06	33.12	37.65	34.28	2.03
3800	6.79	6.79	6.77	6.72	0.07	29.58	35.39	30.88	2.21
4000	6.80	6.82	6.78	6.74	0.08	25.87	33.94	26.91	2.25
4200	6.81	6.84	6.79	6.75	0.10	23.81	33.58	24.81	2.30
4400	6.81	6.83	6.79	6.75	0.09	24.11	32.71	25.12	2.38
4600	6.83	6.85	6.82	6.78	0.07	26.53	32.87	27.62	2.44
4800	6.84	6.86	6.86	6.81	0.05	32.49	32.91	32.09	2.57
5000	6.91	6.93	6.94	6.89	0.05	36.92	33.92	32.89	2.63
5200	7.01	7.03	7.03	6.96	0.07	33.09	35.44	31.61	2.80
5400	7.09	7.14	7.12	7.07	0.07	29.36	36.97	29.80	3.02
5600	6.93	7.02	7.00	6.89	0.13	27.31	37.08	29.25	3.21
5800	6.97	7.05	7.01	6.92	0.13	24.44	40.24	26.23	3.46
6000	6.97	7.04	7.02	6.95	0.10	24.50	42.61	26.05	3.78
6200	6.97	7.03	7.00	6.95	0.08	27.69	39.02	29.65	4.10
6400	7.06	7.11	7.09	7.05	0.06	33.44	34.19	32.35	4.55

FREQ. (MHz)	VSWR (:1)				
	S	1	2	3	4
1600	1.29	1.18	1.16	1.17	1.16
1800	1.16	1.15	1.11	1.12	1.12
2000	1.16	1.08	1.06	1.06	1.06
2200	1.18	1.04	1.01	1.01	1.01
2300	1.16	1.06	1.02	1.03	1.02
2500	1.10	1.10	1.05	1.06	1.06
2700	1.10	1.12	1.06	1.07	1.07
2900	1.12	1.12	1.06	1.08	1.08
3000	1.10	1.13	1.07	1.09	1.09
3400	1.18	1.24	1.17	1.19	1.18
3600	1.24	1.25	1.18	1.20	1.19
3800	1.23	1.22	1.16	1.17	1.15
4000	1.20	1.23	1.15	1.15	1.14
4200	1.19	1.25	1.16	1.16	1.15
4400	1.17	1.25	1.16	1.15	1.14
4600	1.15	1.19	1.11	1.11	1.11
4800	1.21	1.17	1.07	1.11	1.10
5000	1.25	1.21	1.11	1.16	1.14
5200	1.18	1.24	1.14	1.18	1.16
5400	1.08	1.25	1.17	1.20	1.18
5600	1.15	1.24	1.18	1.19	1.18
5800	1.24	1.25	1.18	1.18	1.19
6000	1.20	1.14	1.14	1.14	1.15
6200	1.11	1.08	1.06	1.03	1.07
6400	1.24	1.18	1.06	1.09	1.08

[1] Total Loss = Insertion Loss + 6dB Splitter Loss

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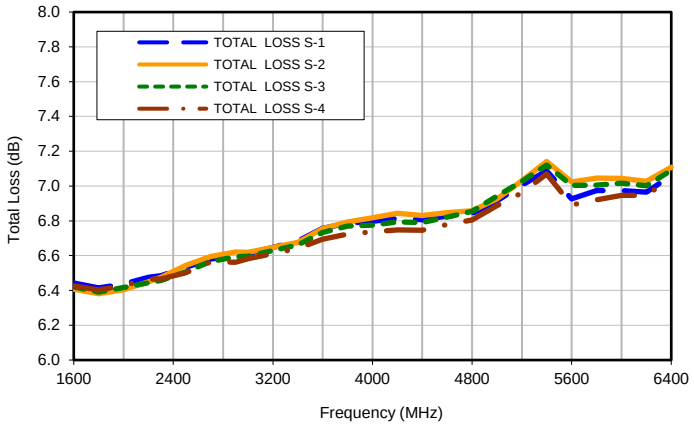
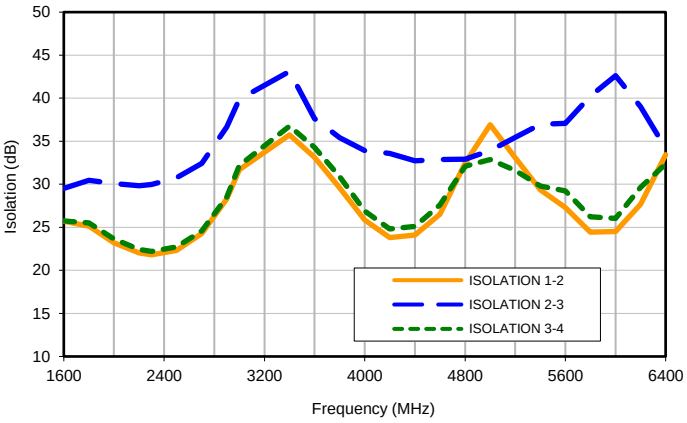
Typical Performance Curves

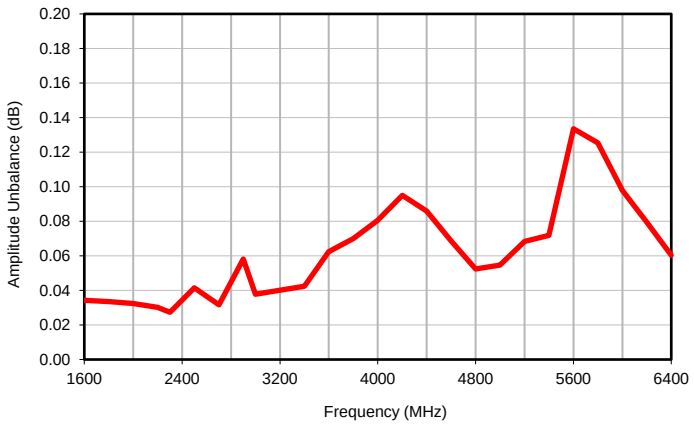
Total Loss



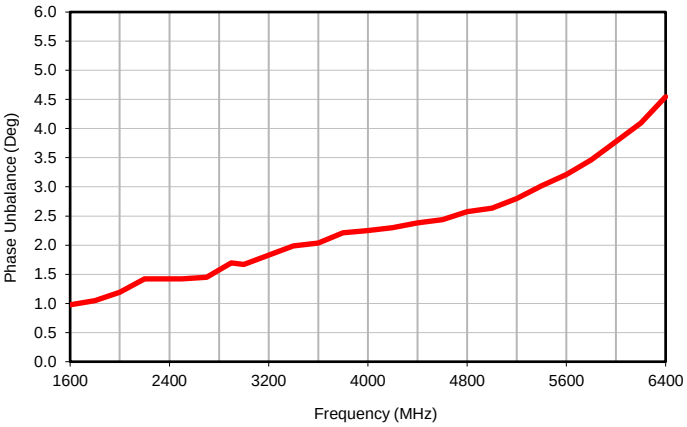
Isolation



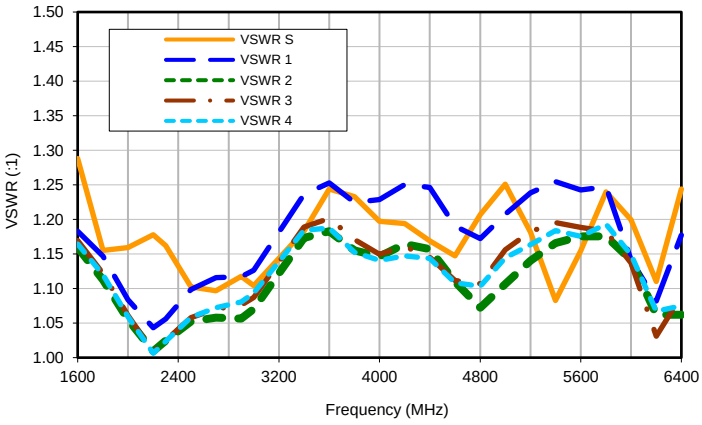
Amplitude Unbalance



Phase Unbalance

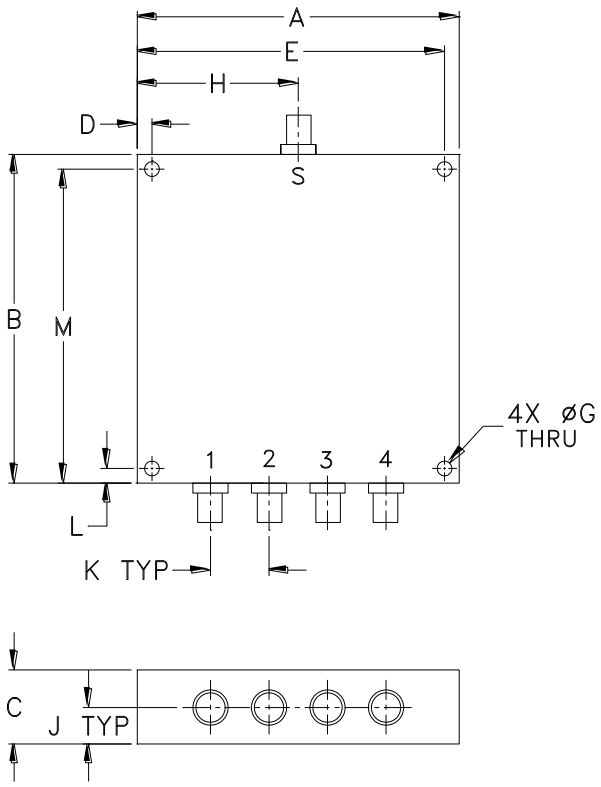


VSWR



Case Style UU

Outline Dimensions UU182



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
UU182	2.75 (69.85)	2.80 (71.12)	.63 (16.00)	.125 (3.18)	2.625 (66.68)	-- --	.125 (3.18)	1.38 (35.05)	.31 (7.87)	.500 (12.70)	.125 (3.18)	2.675 (67.95)	140

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

Notes:

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

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Environmental Specifications ENV02T3

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	0° to 70° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Life (HTOL)	1000 hours at max operating temperature	MIL-STD-202, Method 108, Condition D
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 Eutectic Process: 225°C peak Pb-Free Process, 245°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

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