High Power, DC Pass

Power Splitter/Combiner ZN4PD1-63HP+

4 Way-0° 50Ω 30W 250 to 6000 MHz

CASE STYLE: UU846-4

The Big Deal

- Wideband, 250 to 6000 MHz
- High power, up to 30W as a splitter
- Low insertion loss, 1.0 dB
- Low unbalance, 0.2 dB, 2˚
- High isolation, up to 24 dB

Product Overview

Mini-Circuits' ZN4PD1-63HP+ is a 4-way 0˚ high-power splitter/combiner providing 30W power handling as a splitter (2W as a combiner) and low insertion loss across the 250 to 6000 MHz frequency range. Its outstanding combination of high power handling and low loss minimize power dissipation and provide excellent signal fidelity from input to output. The ZN4PD1-63HP+ comes housed in a rugged aluminum alloy case measuring 3.5 x 4.5 x 0.65" with SMA connectors and all input/output ports on one side of the case, allowing easy cabling in tight layouts.

Feature	Advantages
Wideband, 250 to 6000 MHz	This model supports bandwidth requirements for a wide variety of applications.
High power handling: • 30W as a splitter • 2.0W as a combiner	The ZN4PD1-63HP+ is suitable for a wide range of power requirements.
Low insertion loss, 1.0 dB	The combination of 30W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
Low unbalance: • 0.2 dB amplitude unbalance • 2˚ phase unbalance	Produces nearly equal output signals, ideal for parallel path and multichannel systems.
DC Passing, 1.0A (250mA each port)	Supports applications where DC power is needed through the RF line.

High Power, DC Pass

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Connectors	Model
SMA	ZN4PD1-63HP-S+

+RoHS Compliant

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

Maximum Ratings

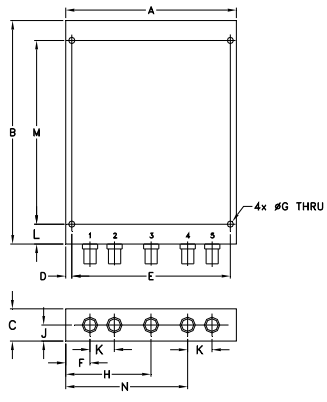
Operating Temperature(@<30W)	-55°C to 60°C
Operating Temperature(@<10W)	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	1.0 A (250mA for each port)

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

Coaxial Connections

SUM PORT	3
PORT 1	1
PORT 2	2
PORT 3	4
PORT 4	5

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
3.50	4.50	.65	.125	3.250	.50	.125
88.90	114.30	16.51	3.18	82.55	12.70	3.18

H	J	K	L	M	N	wt
1.75	.33	.50	.400	3.700	2.5	grams
44.45	8.38	12.70	10.16	93.98	63.50	288

Features

- power handling up to 30 W
- wide frequency band, 250 to 6000 MHz
- low insertion loss, 1.0 dB typ.
- low amplitude unbalance 0.2 dB typ.
- low phase unbalance 2 deg. typ.

Applications

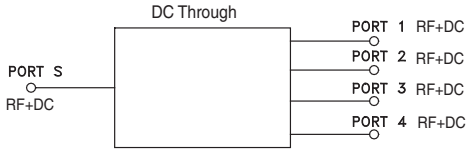
- high band PCS
- UNII
- ISM 802.11A
- WiFi
- Bluetooth

Electrical Specifications

Parameter		Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency			250		6000	MHz
Insertion Loss (above theoretical 6.0 dB)		250-400	—	0.4	0.8	dB
		400-3000	—	0.8	1.4	
		3000-5700	—	1.3	2.2	
		5700-6000	—	1.8	2.5	
Isolation		250-400	8	15	—	dB
		400-3000	16	22	—	
		3000-5700	18	24	—	
		5700-6000	13	17	—	
Phase Unbalance		250-400	—	0.5	3	Degree
		400-3000	—	1.5	5	
		3000-5700	—	2	6	
		5700-6000	—	3	6	
Amplitude Unbalance		250-400	—	0.1	0.3	dB
		400-3000	—	0.1	0.4	
		3000-5700	—	0.2	0.6	
		5700-6000	—	0.3	0.6	
VSWR (Port S)		250-400	—	1.20	1.7	:1
		400-3000	—	1.25	1.7	
		3000-5700	—	1.25	1.65	
		5700-6000	—	1.4	1.7	
VSWR (Port 1-4)		250-400	—	1.1	1.25	:1
		400-3000	—	1.2	1.5	
		3000-5700	—	1.2	1.45	
		5700-6000	—	1.25	1.55	
Power Handling[3]	**As Splitter[1]**	250-4000	—	—	30	W
		4000-6000	—	—	20	
	As Combiner[2]	250-6000	—	—	2.0	

1. All outputs must terminate 50 ohm (VSWR 1.5:1 or better)
2. As a combiner of non-coherent signals, max. power per port is 2.0 watt power rating divided by number of ports.
3. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 60°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 10°C/W.

Electrical Schematic



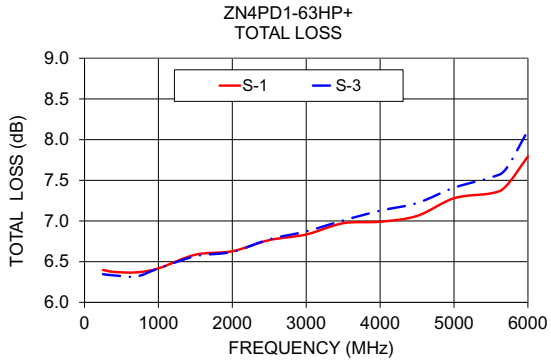
Notes

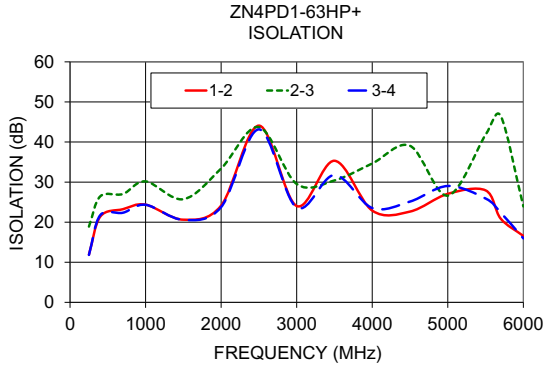
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

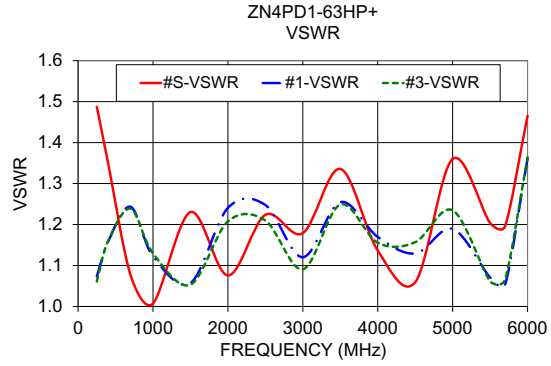
Typical Performance Data

Freq. (MHz)	Total Loss[1] (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (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						
250	6.40	6.36	6.35	6.35	0.05	11.89	18.90	11.82	0.23	1.49	1.07	1.07	1.06	1.06
400	6.37	6.34	6.33	6.34	0.04	21.39	26.45	21.75	0.17	1.35	1.16	1.16	1.16	1.16
700	6.37	6.34	6.32	6.33	0.05	23.24	27.03	22.36	0.30	1.08	1.24	1.24	1.24	1.24
1000	6.42	6.41	6.42	6.42	0.01	24.37	30.18	24.34	0.62	1.01	1.12	1.12	1.13	1.14
1500	6.59	6.59	6.57	6.58	0.02	20.62	25.73	20.57	0.96	1.23	1.06	1.06	1.05	1.05
2000	6.63	6.65	6.62	6.64	0.03	24.15	33.39	23.77	1.32	1.08	1.24	1.21	1.21	1.22
2500	6.77	6.83	6.77	6.78	0.06	44.09	43.72	43.16	1.62	1.22	1.25	1.23	1.21	1.23
3000	6.83	6.94	6.87	6.86	0.11	24.03	29.53	23.65	1.73	1.18	1.12	1.13	1.09	1.09
3500	6.97	7.10	7.01	7.00	0.12	35.32	30.41	31.77	2.27	1.34	1.25	1.28	1.25	1.24
4000	6.99	7.21	7.13	7.04	0.22	22.89	34.65	23.53	2.09	1.14	1.17	1.18	1.16	1.18
4500	7.06	7.29	7.22	7.08	0.23	22.65	39.05	25.15	2.81	1.06	1.13	1.15	1.16	1.15
5000	7.28	7.46	7.41	7.29	0.18	27.07	26.62	29.03	3.06	1.36	1.19	1.29	1.23	1.21
5500	7.34	7.58	7.54	7.31	0.27	27.94	41.81	25.91	3.25	1.20	1.07	1.02	1.06	1.10
5700	7.42	7.69	7.64	7.36	0.33	20.88	46.50	22.39	3.62	1.20	1.05	1.05	1.07	1.06
6000	7.79	8.12	8.11	7.76	0.37	16.56	23.92	15.96	3.39	1.47	1.36	1.36	1.36	1.33

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







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