

DC Pass, Ultra-Thin

Power Splitter/Combiner ZN6PD1-63SMP+

6 Way-0° 50Ω 600 to 6000 MHz

The Big Deal

- Wideband, 600 to 6000 MHz
- Low insertion loss, 2.0 dB
- High-Power Handling, 20W as a splitter
- Ultra-thin case, 0.43" height (10.92mm)
- SMP snap-on connectors



CASE STYLE: UU2372

Product Overview

Mini-Circuits' ZN6PD1-63SMP+ is a 6-way 0° splitter/combiner supporting a wide variety of applications from 600 to 6000 MHz. This model is capable of handling up to 20W RF input power as a splitter and provides low insertion loss, high isolation. It comes housed in an ultra-thin, aluminum alloy case (9.50 x 4.25 x 0.43") with SMP snap-on connectors, saving space in crowded system layouts.

Key Features

Feature	Advantages
Wideband, 600 to 6000 MHz	ZN6PD1-63SMP+ supports bandwidth requirements for a wide variety of applications.
Ultra-thin case design, 9.50 x 4.25 x 0.43"	Saves space in crowded system layouts.
Blind mate, snap-on SMP connectors	Blind mate SMP connectors enable direct connection to adjacent modules while facilitating thin case height.
High power handling: • 20W as a splitter • 1.5W as a combiner	Suitable for a variety of system power requirements.
Low insertion loss, 2.0 dB	Provides good signal power transmission, making this model ideal for signal distribution applications where low loss is a requirement.
DC Passing, 0.6A (100mA each port)	Supports applications where DC power is needed at later stages in the system.

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



DC Pass, Ultra-Thin

Power Splitter/Combiner

6 Way-0° 50Ω 600 to 6000 MHz

ZN6PD1-63SMP+

Maximum Ratings

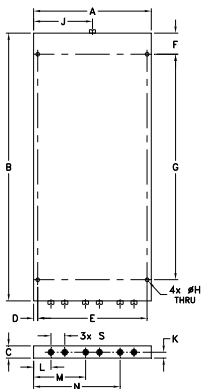
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	20W max.
Internal Dissipation	2.25W max.
DC Current	0.6A(100mA for each port)

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

Coaxial Connections

SUM PORT	S
PORT 1,2,3,4,5,6	1,2,3,4,5,6

Outline Drawing

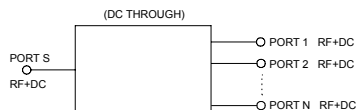


Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
4.25	9.50	.43	.15	3.95	.75	8.000	.136
107.95	241.30	10.92	3.81	100.33	19.05	203.20	3.45

J	K	L	M	N	S	wt
2.13	.205	.63	1.88	3.13	0.5	grams
54.10	5.21	16.00	47.75	79.50	12.70	580

Electrical Schematic



Features

- wideband, 600 to 6000 MHz
- snap-on blind mate SMP connectors
- low insertion loss, 2.0 dB typ.
- good isolation, 20 dB typ.
- rugged, shielded case
- up to 20W power input as splitter

Applications

- high band PCS
- UNII
- WiMAX
- WiFi



Generic photo used for illustration purposes only

CASE STYLE: UU2372

Connectors	Model
SMP(Snap-on)	ZN6PD1-63SMP+

+RoHS Compliant

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

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		600		6000	MHz
Insertion Loss (above theoretical 7.8 dB)	600 - 3000 3000 - 6000	— —	1.0 2.5	1.6 3.5	dB
Isolation	600 - 6000	14	20	—	dB
Phase Unbalance	600 - 3000 3000 - 6000	— —	8 10	12 18	Degree
Amplitude Unbalance	600 - 3000 3000 - 6000	— —	0.6 0.8	0.8 1.4	dB
VSWR (Port S)	600 - 6000	—	1.5	—	:1
VSWR (Port 1-6)	600 - 6000	—	1.4	—	:1
Power Handling¹	as splitter			20	W
	as combiner ²			1.5	

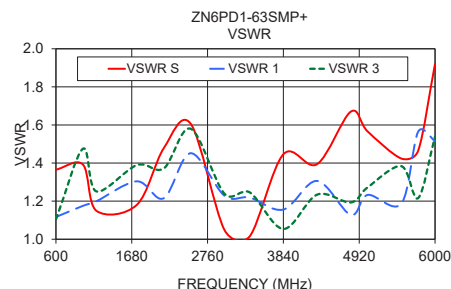
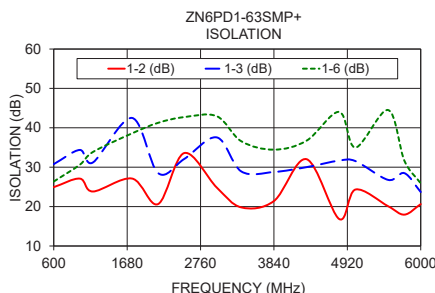
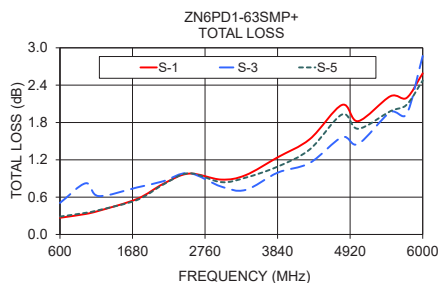
1. Over 25°C to 100°C. Derate linearly to 50% of rating at 100°C.

2. As a combiner of non-coherent signals max power per port is 1.5Watt power rating divided by number of ports.

Typical Performance Data

Frequency (MHz)	Total Loss ¹ (dB)			Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 3
	S-1	S-3	S-5		1-2	1-3	1-6				
600.00	0.27	0.51	0.29	0.25	24.93	30.78	26.37	0.86	1.37	1.12	1.10
984.00	0.33	0.82	0.35	0.52	27.10	34.38	30.63	2.64	1.39	1.18	1.48
1176.00	0.38	0.62	0.39	0.24	23.83	31.20	33.86	3.55	1.15	1.20	1.25
1752.00	0.57	0.76	0.56	0.25	27.11	42.50	38.59	5.40	1.18	1.30	1.39
2136.00	0.81	0.86	0.80	0.08	20.64	28.50	41.26	3.86	1.48	1.22	1.37
2520.00	0.98	0.99	0.98	0.10	33.59	32.09	42.71	5.66	1.61	1.45	1.58
3000.00	0.88	0.77	0.84	0.11	24.81	37.56	42.93	4.96	1.05	1.23	1.24
3360.00	0.95	0.72	0.91	0.24	19.79	28.92	36.58	4.87	1.02	1.22	1.25
3840.00	1.24	0.99	1.09	0.25	21.41	28.78	34.45	5.34	1.45	1.16	1.05
4320.00	1.53	1.15	1.37	0.39	32.03	30.01	36.73	5.49	1.39	1.31	1.23
4800.00	2.08	1.56	1.93	0.53	16.84	31.67	44.03	5.32	1.67	1.13	1.19
5040.00	1.82	1.45	1.70	0.37	24.33	31.54	34.99	6.97	1.57	1.23	1.27
5520.00	2.22	1.97	1.98	0.35	20.09	26.78	44.51	7.25	1.42	1.19	1.38
5760.00	2.19	1.93	2.08	0.30	17.96	28.48	31.61	7.77	1.46	1.56	1.22
6000.00	2.59	2.87	2.47	0.39	20.63	23.69	25.90	8.92	1.92	1.52	1.54

1. Total Loss = Insertion Loss + 7.8dB theoretical splitter loss.



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M160953
ZN6PD1-63SMP+
ED-16102102
JC/TD/CP/AM
201119

6 Way-0° Power Splitter/Combiner

ZN6PD1-63SMP+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-3	S-5		1-2	1-3	1-6			S	1	6
600	8.07	8.31	8.09	0.25	24.93	30.78	26.37	0.86	600	1.37	1.12	1.10
984	8.13	8.62	8.15	0.52	27.10	34.38	30.63	2.64	984	1.39	1.18	1.48
1176	8.18	8.42	8.19	0.24	23.83	31.20	33.86	3.55	1176	1.15	1.20	1.25
1752	8.37	8.56	8.36	0.25	27.11	42.50	38.59	5.40	1752	1.18	1.30	1.39
2136	8.61	8.66	8.60	0.08	20.64	28.50	41.26	3.86	2136	1.48	1.22	1.37
2520	8.78	8.79	8.78	0.10	33.59	32.09	42.71	5.66	2520	1.61	1.45	1.58
3000	8.68	8.57	8.64	0.11	24.81	37.56	42.93	4.96	3000	1.05	1.23	1.24
3360	8.75	8.52	8.71	0.24	19.79	28.92	36.58	4.87	3360	1.02	1.22	1.25
3840	9.04	8.79	8.89	0.25	21.41	28.78	34.45	5.34	3840	1.45	1.16	1.05
4320	9.33	8.95	9.17	0.39	32.03	30.01	36.73	5.49	4320	1.39	1.31	1.23
4800	9.88	9.36	9.73	0.53	16.84	31.67	44.03	5.32	4800	1.67	1.13	1.19
5040	9.62	9.25	9.50	0.37	24.33	31.54	34.99	6.97	5040	1.57	1.23	1.27
5520	10.02	9.77	9.78	0.35	20.09	26.78	44.51	7.25	5520	1.42	1.19	1.38
5760	9.99	9.73	9.88	0.30	17.96	28.48	31.61	7.77	5760	1.46	1.56	1.22
6000	10.39	10.67	10.27	0.39	20.63	23.69	25.90	8.92	6000	1.92	1.52	1.54

¹Total Loss = Insertion Loss + 7.8dB Splitter Loss

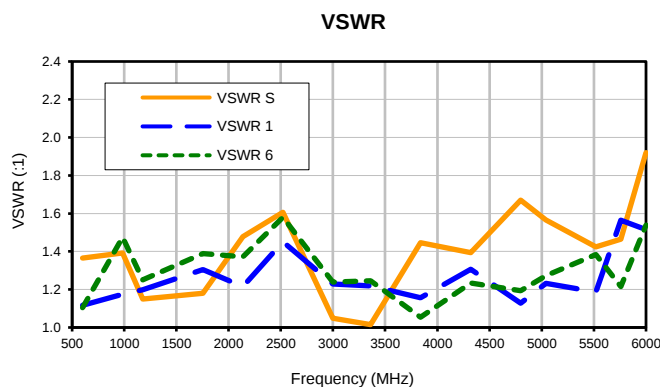
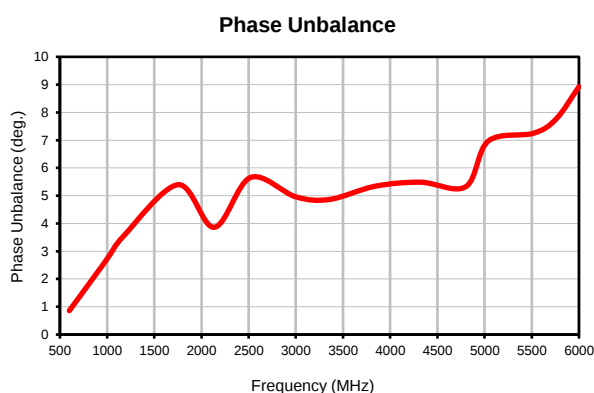
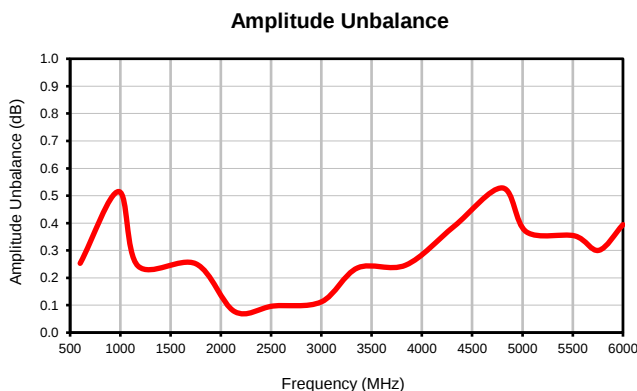
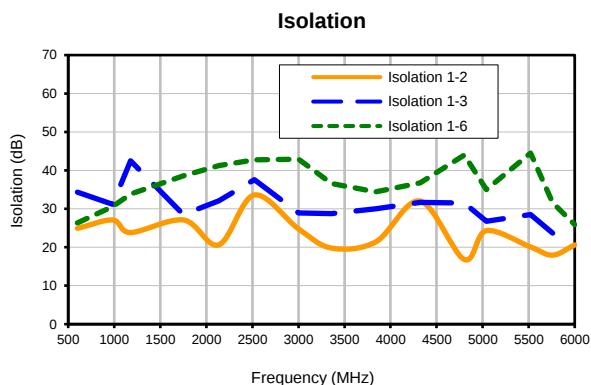
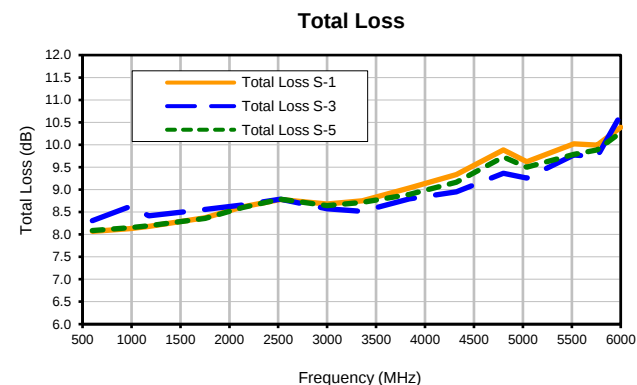


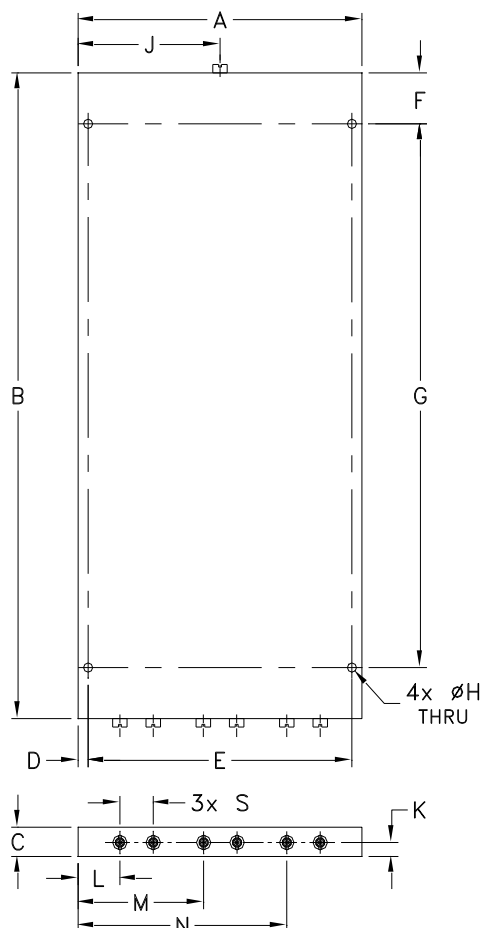
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 • Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site
The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

IF/RF MICROWAVE COMPONENTS

REV. A
ZN6PD1-63SMP+
12/21/2017
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Typical Performance Curves





CASE#	A	B	C	D	E	F	G	H	J	K	L	M
UU2372	4.25 (108.0)	9.50 (241.30)	.43 (10.92)	.15 (3.81)	3.95 (100.33)	.75 (19.05)	8.000 (203.2)	.136 (3.45)	2.13 (53.98)	.205 (5.21)	.63 (15.88)	1.88 (47.63)

CASE#	N	P	Q	R	S	WT. GRAMS
UU2372	3.13 (79.38)	-	-	-	.500 (12.70)	580

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