DC Pass

Power Splitter/Combiner ZN12PD-63-S+

12 Way-0° 50Ω 600 to 6000 MHz 20Watt

The Big Deal

- Wideband, 600 - 6000 MHz
- High power, 20W as a splitter
- Good isolation, 19 dB
- Ultra-slim case, 8.5 x 9.5 x 0.50”
- SMA connectors

CASE STYLE: UU2061-1

Product Overview

Mini-Circuits’ ZN12PD-63-S+ is a connectorized, wideband 12-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 and good isolation. It comes housed in an aluminum alloy case (8.5 x 9.5 x 0.50”) with SMA connectors, saving space in crowded system layouts. This model covers all cellular bands including LTE through WiFi in a single unit.

Key Features

Feature	Advantages
Wideband, 600 to 6000 MHz	ZN12PD-63-S+ supports bandwidth requirements for a wide variety of applications.
Power handling up to 20W as a splitter (1.5W as a combiner)	Supports a wide range of power requirements.
Low insertion loss, 1.4 – 3.0 dB	Provides good transmission of signal power, making this model an excellent candidate for signal distribution applications where low loss is a requirement.
DC passing up to 1.2A (100 mA each port)	Supports applications where DC power is needed through the RF line.
High isolation, 19 dB	Minimizes interference between input ports.
Case design, 8.5 x 9.5 x 0.50”	Saves space in crowded system layouts.

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Power Splitter/Combiner

ZN12PD-63-S+

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Connectors	Model
SMA	ZN12PD-63-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
DC Current	1.2 A (100mA for each port)

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

Coaxial Connections

SUM PORT	S(COM)
PORT 1,2,3,.....,12	1,2,3.....,12

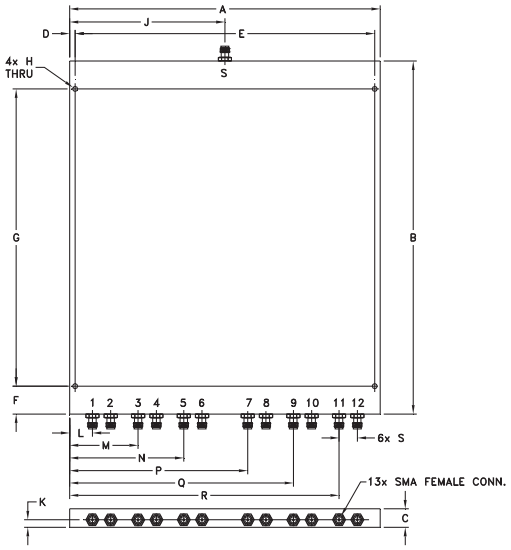
Features

- Wideband 600 to 6000 MHz
- High isolation, 19 dB typ.
- Good output VSWR, 1.4:1 typ.
- Good amplitude unbalance, 0.7 dB typ.

Applications

- All cellular bands including LTE
- WiFi
- Bluetooth
- Lab
- Test and measurement

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
8.50	9.50	.50	.15	8.200	.75	8.00	.136	4.25
215.90	241.30	12.70	3.81	208.28	19.05	203.20	3.45	107.95

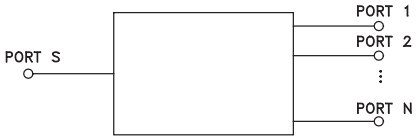
K	L	M	N	P	Q	R	S	wt
.205	.63	1.88	3.13	4.88	6.13	7.38	0.5	grams
5.21	16.00	47.75	79.50	123.95	155.70	187.45	12.70	1320

Electrical Specifications at 25°C

Parameter		Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range			600		6000	MHz
Insertion Loss Above 10.8 dB		600 - 3000	—	1.4	2.4	dB
		3000 - 6000	—	3.0	4.5	
Isolation		600 - 3000	14	20	—	dB
		3000 - 6000	13	18	—	
Phase Unbalance		600 - 3000	—	8.0	—	Degree
		3000 - 6000	—	10.0	—	
Amplitude Unbalance		600 - 3000	—	0.4	0.9	dB
		3000 - 6000	—	0.9	1.6	
VSWR (Port S)		600 - 6000	—	1.5	2.4	:1
VSWR (Port 1-2)		600 - 3000	—	1.6	—	:1
		3000 - 6000	—	1.5	—	
Power Handling[1]	As Splitter	600 - 6000	–	—	20	Watt
	As Combiner[2]	600 - 6000			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 1.5 watt power rating divided by number of ports.

Electrical Schematic



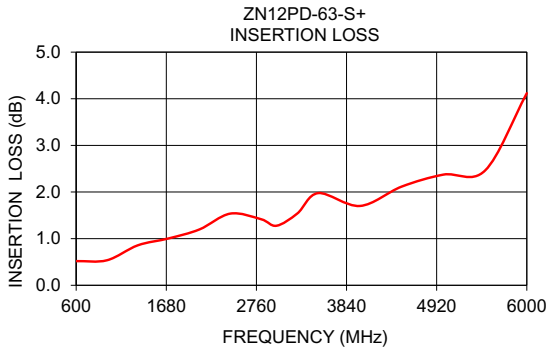
Notes

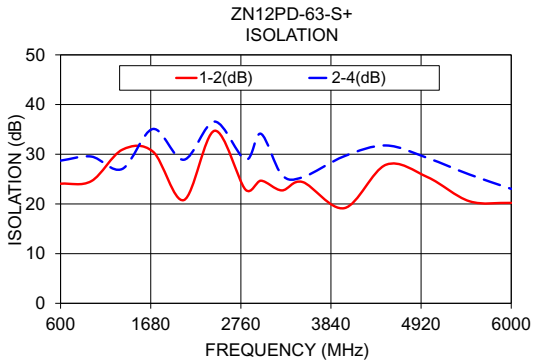
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

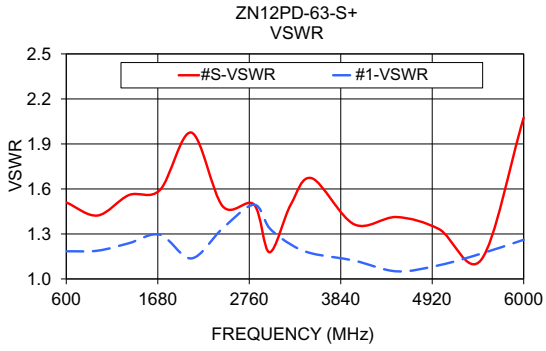
Typical Performance Data

Freq. (MHz)	Insertion Loss[1] (dB)	Amplitude Unbalance (dB)	Isolation (dB)		Phase Unbalance (deg.)	VSWR S	VSWR 12
			Adjacent	Opposite			
600	0.52	0.22	24.07	28.72	0.98	1.51	1.18
969	0.54	0.56	24.60	29.53	2.47	1.42	1.19
1338	0.86	0.21	30.91	27.04	3.01	1.56	1.24
1708	1.01	0.20	30.52	35.09	5.56	1.59	1.29
2077	1.20	0.15	20.77	28.89	4.07	1.98	1.14
2446	1.54	0.24	34.73	36.57	6.15	1.48	1.34
2815	1.42	0.32	22.89	28.90	4.88	1.50	1.49
3000	1.28	0.35	24.68	34.12	6.13	1.18	1.34
3250	1.54	0.48	22.72	25.87	5.07	1.50	1.23
3500	1.98	0.62	24.41	25.37	6.10	1.67	1.17
4000	1.70	0.63	19.15	29.61	6.30	1.36	1.12
4500	2.12	0.62	27.89	31.77	4.46	1.41	1.05
5000	2.37	0.77	25.37	29.22	5.26	1.33	1.09
5500	2.46	1.29	20.53	25.92	6.43	1.13	1.17
6000	4.12	0.72	20.21	23.03	10.65	2.07	1.26

1. Total Loss = Insertion Loss + 10.8dB splitter loss.







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12 Way-0° Power Splitter/Combiner ZN12PD-63-S+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB) S-1	AMP. UNBAL. (dB)	ISOLATION (dB) Adjacent	ISOLATION (dB) Opposite	PHASE UNBAL. (deg.)
600	11.32	0.22	24.07	28.72	0.98
785	11.19	0.41	20.91	28.97	0.78
969	11.34	0.56	24.60	29.53	2.47
1154	11.42	0.27	23.98	30.14	4.34
1338	11.66	0.21	30.91	27.04	3.01
1523	11.58	0.36	21.05	30.06	4.09
1708	11.81	0.20	30.52	35.09	5.56
2077	12.00	0.15	20.77	28.89	4.07
2262	12.18	0.26	25.97	30.98	4.57
2446	12.34	0.24	34.73	36.57	6.15
2631	11.98	0.26	26.98	33.46	5.96
2815	12.22	0.32	22.89	28.90	4.88
3000	12.08	0.35	24.68	34.12	6.13
3250	12.34	0.48	22.72	25.87	5.07
3500	12.78	0.62	24.41	25.37	6.10
3750	12.51	0.34	20.90	35.42	4.18
4000	12.50	0.63	19.15	29.61	6.30
4250	12.79	0.63	24.96	28.31	4.26
4500	12.92	0.62	27.89	31.77	4.46
4750	13.16	0.83	21.30	36.35	5.10
5000	13.17	0.77	25.37	29.22	5.26
5250	13.86	1.16	18.12	25.41	5.31
5500	13.26	1.29	20.53	25.92	6.43
5750	13.96	0.75	18.10	29.26	6.29
6000	14.92	0.72	20.21	23.03	10.65

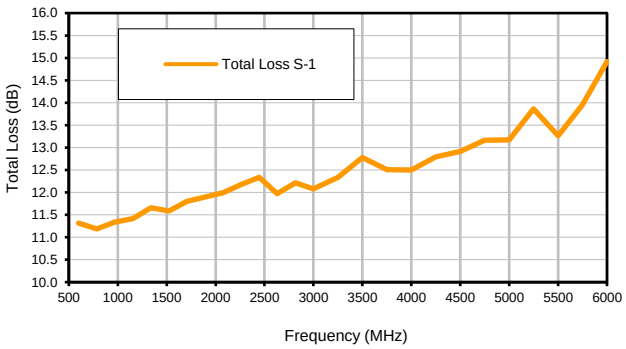
FREQ. (MHz)	VSWR (:1) S	VSWR (:1) 12
600	1.51	1.18
785	1.13	1.15
969	1.42	1.19
1154	1.13	1.16
1338	1.56	1.24
1523	1.32	1.19
1708	1.59	1.29
2077	1.98	1.14
2262	1.55	1.34
2446	1.48	1.34
2631	1.30	1.23
2815	1.50	1.49
3000	1.18	1.34
3250	1.50	1.23
3500	1.67	1.17
3750	1.18	1.12
4000	1.36	1.12
4250	1.15	1.06
4500	1.41	1.05
4750	1.50	1.15
5000	1.33	1.09
5250	1.44	1.22
5500	1.13	1.17
5750	1.24	1.18
6000	2.07	1.26

[1]Total Loss = Insertion Loss + 10.8dB Splitter Loss

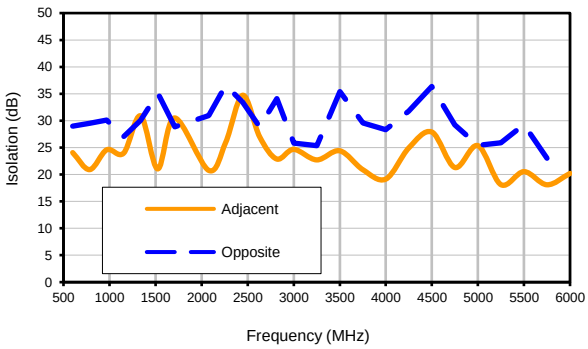
12 Way-0° Power Splitter/Combiner ZN12PD-63-S+

Typical Performance Curves

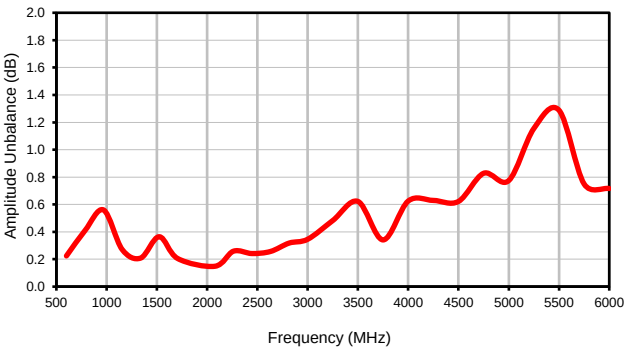
Total Loss



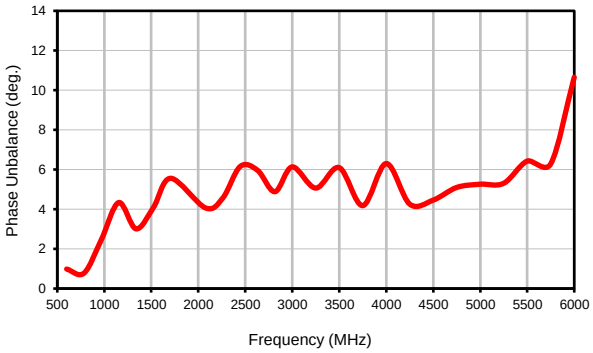
Isolation



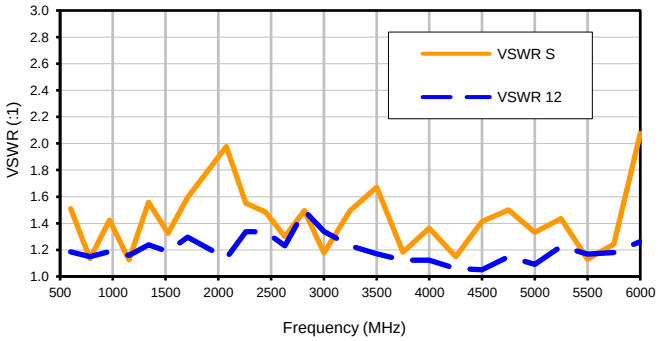
Amplitude Unbalance



Phase Unbalance



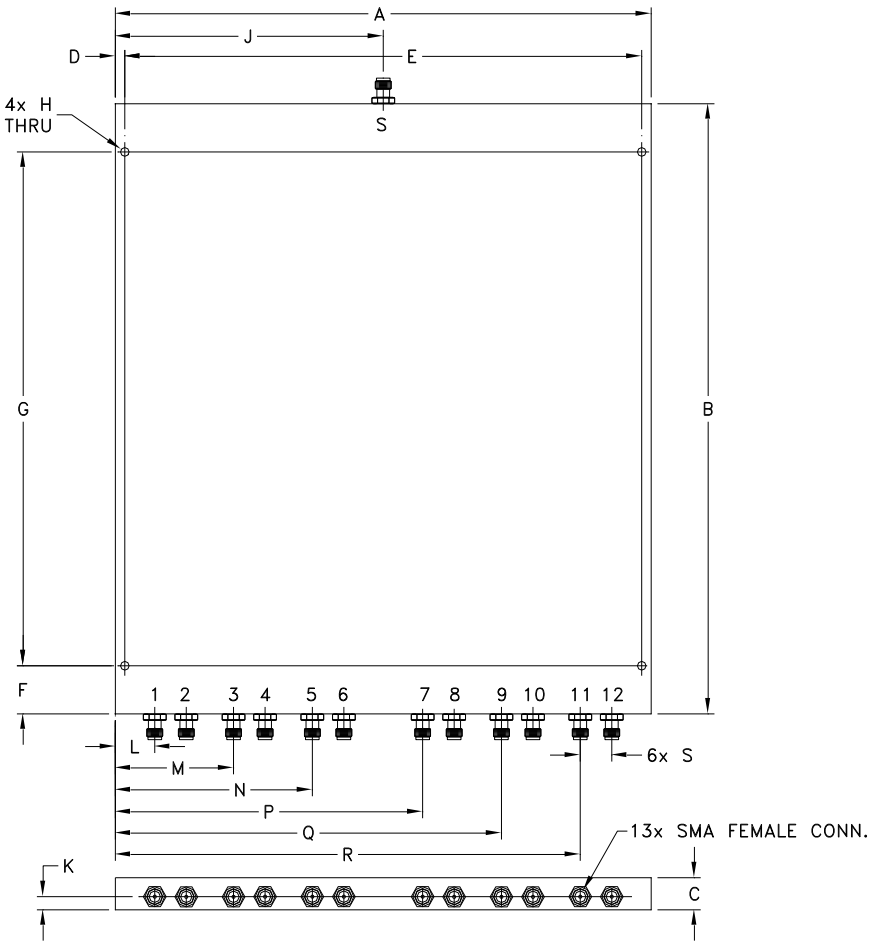
VSWR



Case Style UU

Outline Dimensions

UU2061-1



CASE#	A	B	C	D	E	F	G	H	J	K	L
UU2061-1	8.50 (215.90)	9.50 (241.30)	.50 (12.70)	.15 (3.81)	8.200 (208.28)	.75 (19.05)	8.000 (203.2)	.136 (3.45)	4.25 (107.95)	.205 (5.21)	.63 (15.88)

CASE#	M	N	P	Q	R	S	WT. GRAMS
UU2061-1	1.88 (47.63)	3.13 (79.38)	4.88 (123.83)	6.13 (155.58)	7.38 (187.33)	.500 (12.70)	1.190

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.

Mini-Circuits

Environmental Specifications ENV28

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