

Coaxial

Power Splitter/Combiner

ZC16PD-222-S+

16 Way-0° 50Ω 10 to 2200 MHz

The Big Deal

- Wideband, 10 to 2200 MHz
- Good isolation, 17 dB
- Low unbalance, 0.3 dB, 5°



CASE STYLE: UU179

Product Overview

Mini-Circuits' ZC16PD-222-S+ is a 16-way 0° splitter/combiner providing 1W RF power handling as a splitter across the 10 to 2200 MHz range, covering many wireless communications bands as well as Sat-Com IF and more. It provides a high port-count with excellent isolation and low unbalance, making this model ideal for systems requiring distribution of signal into many channels. The splitter/combiner comes housed in a rugged aluminum alloy case (8.5 x 3.95 x 0.75") with SMA connectors.

Key Features

Feature	Advantages
Wideband, 10 to 2200 MHz	ZC16PD-222-S+ covers many popular wireless communications bands, making it suitable for a wide variety of applications.
1W power handling	Suitable for a variety of system power requirements.
Good isolation: • 25 dB @ 100 MHz • 16 dB @ 2200 MHz	Minimizes signal leakage and interference between ports.
Low unbalance: • 0.3 dB amplitude unbalance • 5° phase unbalance	ZC16PD-222-S+ produces nearly equal output signals, ideal for parallel path / multi-channel systems.

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



Coaxial Power Splitter/Combiner

16 Way-0° 50Ω 10 to 2200 MHz

ZC16PD-222-S+

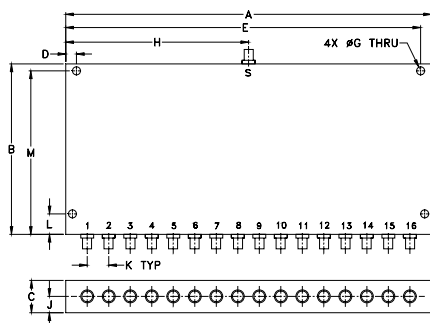
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.75W max.
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

SUM PORT	S
PORT 1,2,3,.....,16	1,2,3,.....,16

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
8.50	3.95	.75	.250	8.250	—	.187
215.90	100.33	19.05	6.35	209.55	—	4.75
H	J	K	L	M	wt	
4.250	.38	.500	.475	3.475	grams	
107.95	9.65	12.70	12.07	88.27	710	

Electrical Schematic



Features

- wide frequency band 10 to 2200 MHz
- good amplitude unbalance, 0.3 dB typ.
- good phase unbalance, 5 deg. typ.

Applications

- UHF
- cellular, GPS, PCS
- communication systems



CASE STYLE: UU179

Connectors Model
SMA ZC16PD-222-S+

+RoHS Compliant

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

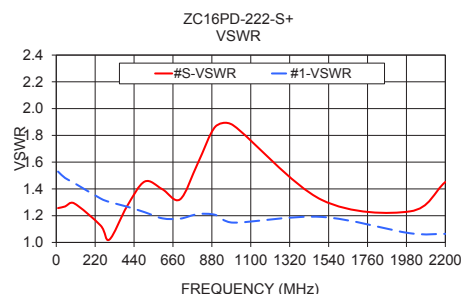
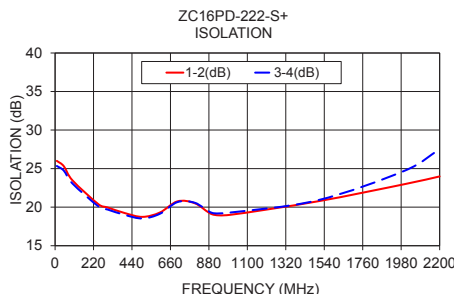
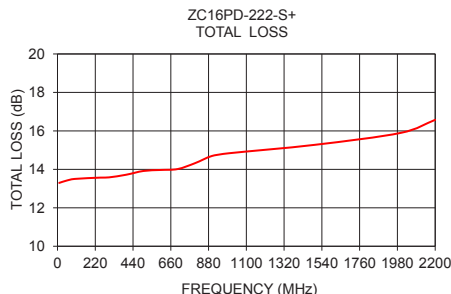
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		10		2200	MHz
Insertion Loss Above 12 dB	10-100	—	1.5	2.8	dB
	100-1100	—	3.2	4.5	
	1100-2200	—	4.5	5.6	
Isolation	10-100	20	25	—	dB
	100-1100	14	17	—	
	1100-2200	14	16	—	
Phase Unbalance	10-100	—	—	2.0	Degree
	100-1100	—	—	10	
	1100-2200	—	—	18	
Amplitude Unbalance	10-100	—	—	0.7	dB
	100-1100	—	—	0.7	
	1100-2200	—	—	1.0	
VSWR (S)	10-100				(:1)
	100-1100		1.65	2.30	
	1100-2200				
VSWR (OUT)	10-100		1.50	2.10	(:1)
	100-1100		1.30	1.80	
	1100-2200		1.45	2.0	

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)	Amplitude Unbalance (dB)	Isolation (dB)		Phase Unbalance (deg.)	VSWR S	VSWR 1
			1-2	3-4			
10.00	13.29	0.05	26.00	25.34	0.18	1.26	1.53
50.00	13.41	0.04	25.31	24.74	0.16	1.27	1.48
100.00	13.50	0.04	23.46	23.05	0.28	1.29	1.45
250.00	13.57	0.06	20.34	20.06	0.75	1.13	1.33
300.00	13.58	0.06	19.96	19.70	0.88	1.02	1.30
400.00	13.72	0.07	19.22	18.98	1.10	1.27	1.27
500.00	13.92	0.08	18.74	18.54	1.31	1.45	1.23
600.00	13.97	0.11	19.31	19.14	1.48	1.40	1.18
700.00	14.02	0.14	20.75	20.66	1.74	1.32	1.18
800.00	14.32	0.15	20.50	20.56	2.08	1.59	1.21
900.00	14.70	0.15	19.06	19.24	2.49	1.87	1.21
1000.00	14.84	0.15	19.00	19.30	2.87	1.88	1.15
1500.00	15.28	0.19	20.75	20.88	4.24	1.32	1.19
2000.00	15.90	0.37	22.99	24.73	5.90	1.23	1.07
2200.00	16.57	0.52	23.99	27.52	8.27	1.45	1.06

1. Total Loss = Insertion Loss + 12dB splitter loss.



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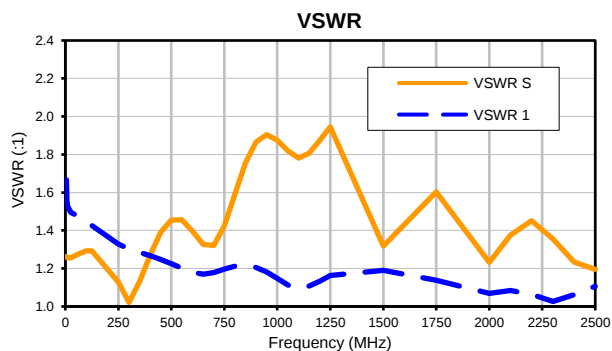
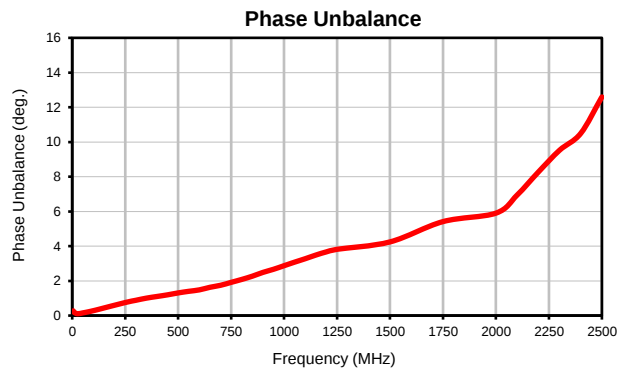
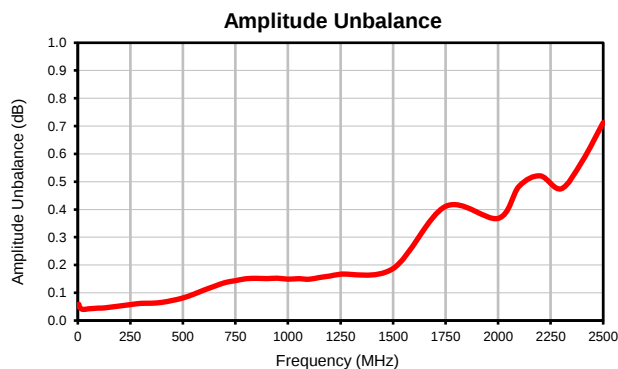
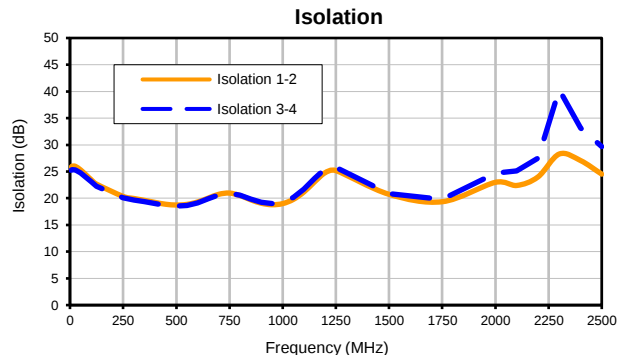
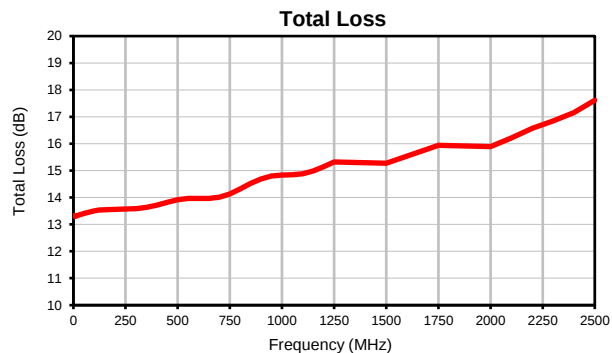
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Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS ¹ (dB) S-1	AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)		PHASE UNBALANCE (deg.)	FREQUENCY (MHz)	VSWR (:1)	
			1-2	3-4			S	1
5	13.33	0.06	25.76	25.25	0.27	5	1.26	1.67
8	13.29	0.05	25.92	25.32	0.20	8	1.26	1.56
10	13.29	0.05	26.00	25.34	0.18	10	1.26	1.53
25	13.35	0.04	25.98	25.32	0.11	25	1.26	1.50
50	13.41	0.04	25.31	24.74	0.16	50	1.27	1.48
75	13.46	0.04	24.39	23.91	0.22	75	1.28	1.46
100	13.50	0.04	23.46	23.05	0.28	100	1.29	1.45
125	13.53	0.05	22.64	22.27	0.36	125	1.29	1.43
250	13.57	0.06	20.34	20.06	0.75	250	1.13	1.33
300	13.58	0.06	19.96	19.70	0.88	300	1.02	1.30
350	13.63	0.06	19.61	19.35	1.01	350	1.13	1.28
400	13.72	0.07	19.22	18.98	1.10	400	1.27	1.27
450	13.83	0.07	18.88	18.66	1.19	450	1.39	1.25
500	13.92	0.08	18.74	18.54	1.31	500	1.45	1.23
550	13.96	0.09	18.86	18.67	1.40	550	1.46	1.20
600	13.97	0.11	19.31	19.14	1.48	600	1.40	1.18
650	13.97	0.12	20.03	19.89	1.63	650	1.33	1.17
700	14.02	0.14	20.75	20.66	1.74	700	1.32	1.18
750	14.13	0.14	20.97	20.95	1.91	750	1.42	1.20
800	14.32	0.15	20.50	20.56	2.08	800	1.59	1.21
850	14.53	0.15	19.71	19.84	2.27	850	1.76	1.22
900	14.70	0.15	19.06	19.24	2.49	900	1.87	1.21
950	14.80	0.15	18.79	19.02	2.67	950	1.90	1.18
1000	14.84	0.15	19.00	19.30	2.87	1000	1.88	1.15
1050	14.84	0.15	19.79	20.16	3.08	1050	1.82	1.11
1100	14.88	0.15	21.19	21.68	3.28	1100	1.78	1.10
1150	14.99	0.16	23.08	23.72	3.49	1150	1.81	1.11
1200	15.15	0.16	24.79	25.52	3.67	1200	1.87	1.13
1250	15.32	0.17	25.18	25.76	3.82	1250	1.95	1.16
1500	15.28	0.19	20.75	20.88	4.24	1500	1.32	1.19
1750	15.94	0.41	19.35	19.77	5.41	1750	1.60	1.14
2000	15.90	0.37	22.99	24.73	5.90	2000	1.23	1.07
2100	16.22	0.48	22.39	25.12	6.94	2100	1.38	1.08
2200	16.57	0.52	23.99	27.52	8.27	2200	1.45	1.06
2300	16.84	0.47	28.28	40.33	9.52	2300	1.36	1.03
2400	17.15	0.57	27.07	33.14	10.49	2400	1.23	1.06
2500	17.62	0.71	24.51	29.70	12.60	2500	1.19	1.11

¹Total Loss = Insertion Loss + 12dB Splitter Loss

Typical Performance Curves

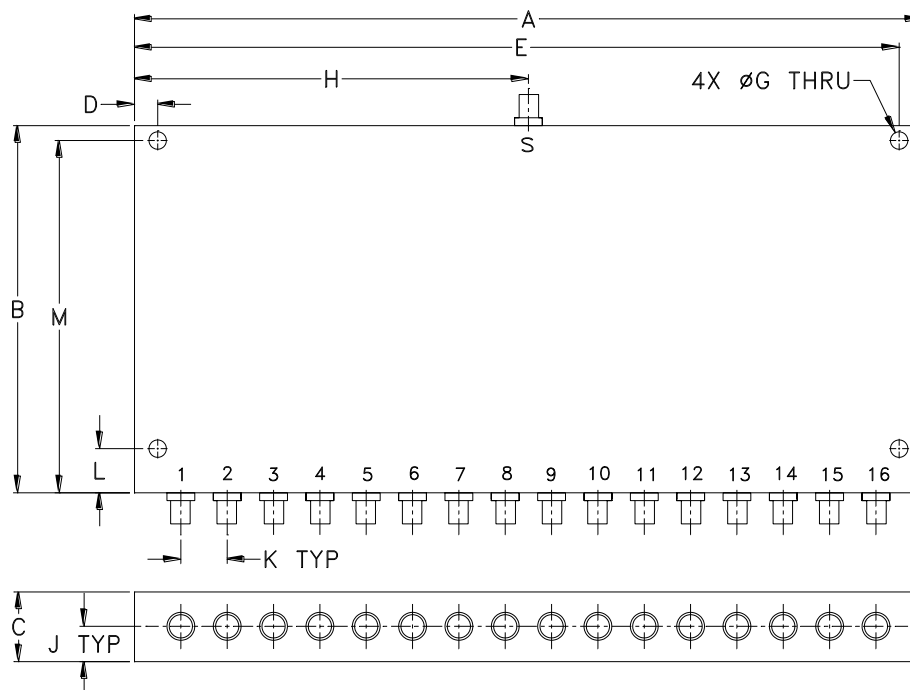


Case Style

UU

Outline Dimensions

UU179



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAMS
UU179	8.50 (215.90)	3.95 (100.33)	.75 (19.05)	.250 (6.35)	8.250 (209.55)	-- --	.187 (4.75)	4.250 (107.95)	.38 (9.65)	.500 (12.70)	.475 (12.07)	3.475 (88.27)	710

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

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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RF/IF MICROWAVE COMPONENTS

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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