Coaxial

Power Splitter/Combiner

ZC9PD-172-S+

9 Way-0° 50Ω 1200 to 1700 MHz

CASE STYLE: AB204

Connectors	Model
SMA	ZC9PD-172-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	1.5W max.

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

Coaxial Connections

SUM PORT	S(COM)
PORT 1,2,3,.....,9	1,2,3,.....,9

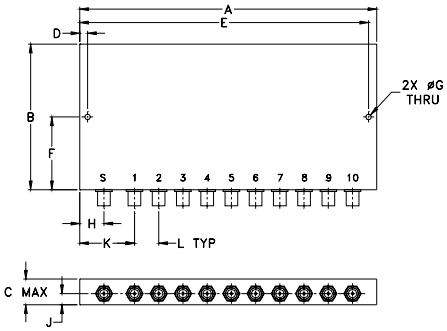
Features

- useable from 1100 to 1700 MHz
- low insertion loss, 0.6 dB typ.
- high isolation, 18 dB typ.
- excellent output VSWR, 1.2:1 typ.
- rugged shielded case

Applications

- GPS
- instrumentation
- signal processing

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F
6.13	3.00	.53	.162	5.962	1.500
155.70	76.20	13.46	4.11	151.43	38.10

G	H	J	K	L	wt
.116	.50	.25	1.13	.50	grams
2.95	12.70	6.35	28.70	12.70	207

Electrical Schematic

Electrical Specifications at 25°C

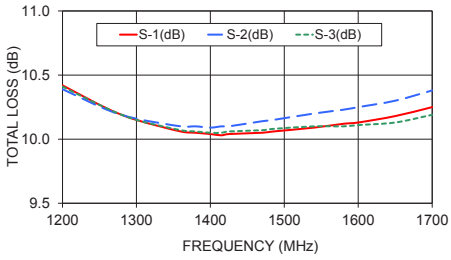
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1200	—	1700	MHz
Insertion Loss Above 9.6 dB	1200 - 1700	—	0.6	1.5	dB
Isolation	1200 - 1500 1500 - 1700	17 13	20 18	—	dB
Phase Unbalance	1200 - 1700	—	7.0	10	Degree
Amplitude Unbalance	1200 - 1700	—	0.4	0.8	dB
VSWR Input	1200 - 1300 1300 - 1700	—	1.5 1.2	2.0 1.7	:1
VSWR Output	1200 - 1700	—	1.2	1.5	:1

Typical Performance Data

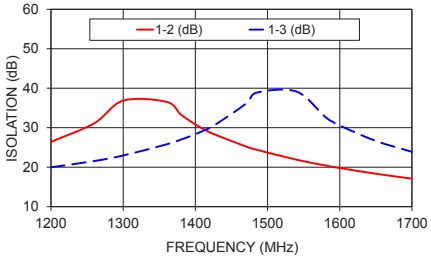
Freq. (MHz)	Total Loss[1] (dB)			Amplitude Unbalance (dB)	Isolation (dB)		Phase unbalance (deg.)	VSWR S	VSWR 1	VSWR 3
	S-1	S-2	S-3		1-2	1-3				
1200.00	10.42	10.39	10.41	0.14	26.40	19.98	6.01	1.75	1.09	1.09
1260.00	10.24	10.23	10.24	0.15	31.13	21.56	6.42	1.50	1.09	1.10
1300.00	10.15	10.16	10.15	0.16	36.86	22.96	6.63	1.36	1.09	1.10
1360.00	10.06	10.10	10.07	0.20	36.55	25.78	6.93	1.17	1.09	1.04
1380.00	10.05	10.10	10.06	0.23	33.32	26.98	6.98	1.13	1.09	1.03
1400.00	10.04	10.09	10.05	0.25	30.83	28.36	7.05	1.08	1.09	1.03
1415.00	10.03	10.10	10.05	0.26	29.30	29.56	7.11	1.06	1.09	1.03
1425.00	10.04	10.10	10.06	0.27	28.42	30.45	7.15	1.05	1.09	1.03
1470.00	10.05	10.14	10.07	0.33	25.25	36.08	7.28	1.07	1.09	1.03
1485.00	10.06	10.15	10.08	0.33	24.41	38.88	7.33	1.09	1.09	1.04
1540.00	10.09	10.20	10.10	0.36	21.90	39.16	7.52	1.13	1.09	1.10
1580.00	10.12	10.23	10.10	0.42	20.44	32.73	7.43	1.15	1.09	1.05
1600.00	10.13	10.25	10.11	0.42	19.79	30.57	7.40	1.15	1.09	1.10
1650.00	10.18	10.30	10.13	0.39	18.34	26.65	7.71	1.18	1.08	1.10
1700.00	10.25	10.38	10.19	0.42	17.10	23.89	8.35	1.25	1.09	1.10

1. Total Loss = Insertion Loss + 9.6dB theoretical splitter loss.

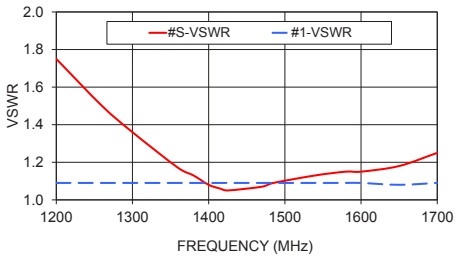
ZC9PD-172-S+
TOTAL LOSS



ZC9PD-172-S+
ISOLATION



ZC9PD-172-S+
VSWR



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

9 Way-0° Power Splitter/Combiner ZC9PD-172+

Typical Data Performance

FREQ.	TOTAL LOSS[1]			AMP. UNBAL.	ISOLATION		PHASE UNBAL.
(MHz)	(dB)			(dB)	(dB)		(Deg.)
	S-1	S-2	S-3		1-2	1-3	
1200.0	10.42	10.39	10.41	0.14	26.40	19.98	6.01
1240.0	10.30	10.28	10.29	0.15	29.19	20.96	6.30
1260.0	10.24	10.23	10.24	0.15	31.13	21.56	6.42
1280.0	10.19	10.19	10.19	0.15	33.62	22.22	6.57
1300.0	10.15	10.16	10.15	0.16	36.86	22.96	6.63
1320.0	10.11	10.13	10.12	0.17	40.37	23.78	6.76
1340.0	10.09	10.11	10.09	0.18	40.18	24.72	6.88
1360.0	10.06	10.10	10.07	0.20	36.55	25.78	6.93
1380.0	10.05	10.10	10.06	0.23	33.32	26.98	6.98
1385.0	10.05	10.09	10.06	0.23	32.63	27.31	7.00
1392.5	10.04	10.09	10.06	0.24	31.70	27.81	7.03
1400.0	10.04	10.09	10.05	0.25	30.83	28.36	7.05
1405.0	10.04	10.10	10.05	0.25	30.29	28.74	7.06
1410.0	10.04	10.10	10.05	0.26	29.79	29.13	7.09
1415.0	10.03	10.10	10.05	0.26	29.30	29.56	7.11
1420.0	10.04	10.10	10.06	0.27	28.86	29.98	7.13
1425.0	10.04	10.10	10.06	0.27	28.42	30.45	7.15
1440.0	10.04	10.12	10.06	0.29	27.22	32.00	7.19
1455.0	10.04	10.13	10.07	0.31	26.18	33.84	7.22
1470.0	10.05	10.14	10.07	0.33	25.25	36.08	7.28
1485.0	10.06	10.15	10.08	0.33	24.41	38.88	7.33
1500.0	10.07	10.16	10.08	0.33	23.65	42.07	7.36
1520.0	10.08	10.18	10.09	0.34	22.73	43.18	7.43
1540.0	10.09	10.20	10.10	0.36	21.90	39.16	7.52
1560.0	10.11	10.21	10.10	0.39	21.14	35.49	7.49
1580.0	10.12	10.23	10.10	0.42	20.44	32.73	7.43
1600.0	10.13	10.25	10.11	0.42	19.79	30.57	7.40
1650.0	10.18	10.30	10.13	0.39	18.34	26.65	7.71
1700.0	10.25	10.38	10.19	0.42	17.10	23.89	8.35

FREQ.	VSWR		
(MHz)	(:1)		
	S	1	3
1200.0	1.75	1.09	1.09
1240.0	1.58	1.09	1.09
1260.0	1.50	1.09	1.10
1280.0	1.43	1.09	1.10
1300.0	1.36	1.09	1.10
1320.0	1.29	1.09	1.10
1340.0	1.23	1.09	1.10
1360.0	1.17	1.09	1.10
1380.0	1.13	1.09	1.10
1385.0	1.11	1.09	1.10
1392.5	1.10	1.09	1.10
1400.0	1.08	1.09	1.10
1405.0	1.08	1.09	1.10
1410.0	1.07	1.09	1.10
1415.0	1.06	1.09	1.10
1420.0	1.06	1.09	1.10
1425.0	1.05	1.09	1.10
1440.0	1.05	1.09	1.10
1455.0	1.06	1.09	1.10
1470.0	1.07	1.09	1.10
1485.0	1.09	1.09	1.10
1500.0	1.10	1.09	1.10
1520.0	1.12	1.09	1.10
1540.0	1.13	1.09	1.10
1560.0	1.14	1.09	1.10
1580.0	1.15	1.09	1.10
1600.0	1.15	1.09	1.10
1650.0	1.18	1.08	1.10
1700.0	1.25	1.09	1.10

[1]Total Loss = Insertion Loss + 9.6dB Splitter Loss

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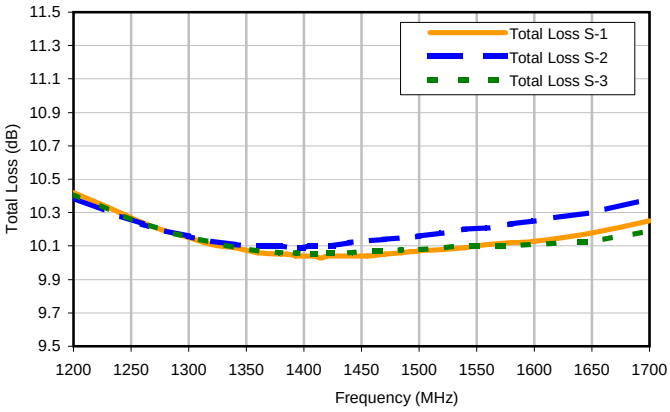
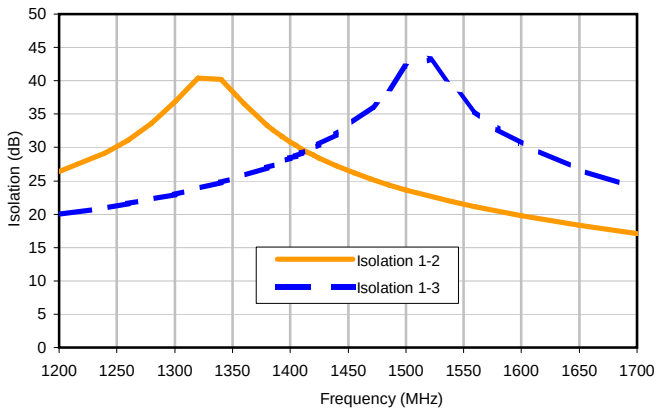
Typical Performance Curves

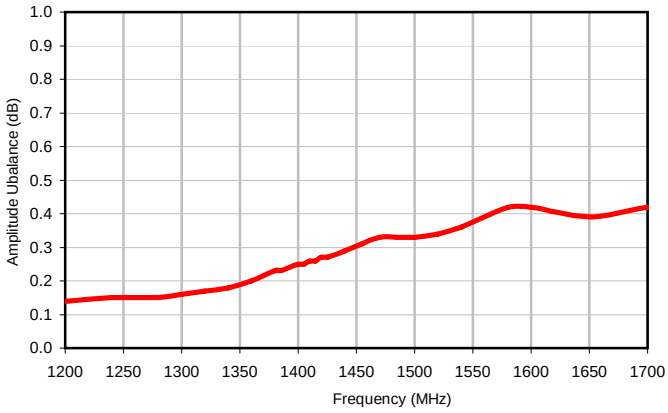
Total Loss



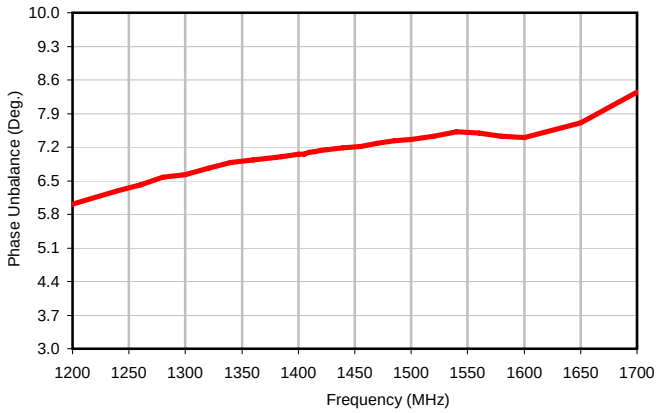
Isolation



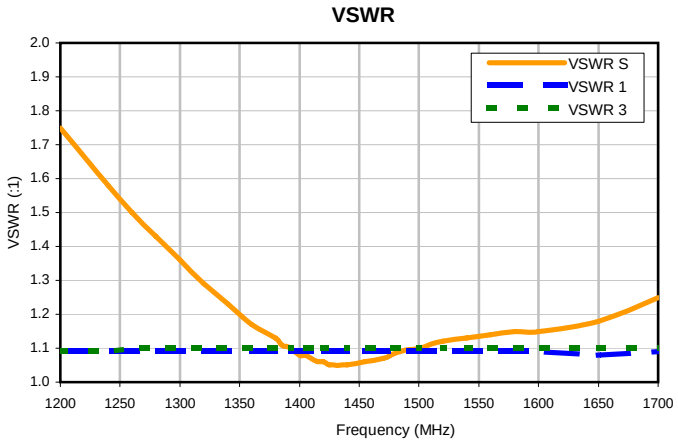
Amplitude Unbalance



Phase Unbalance



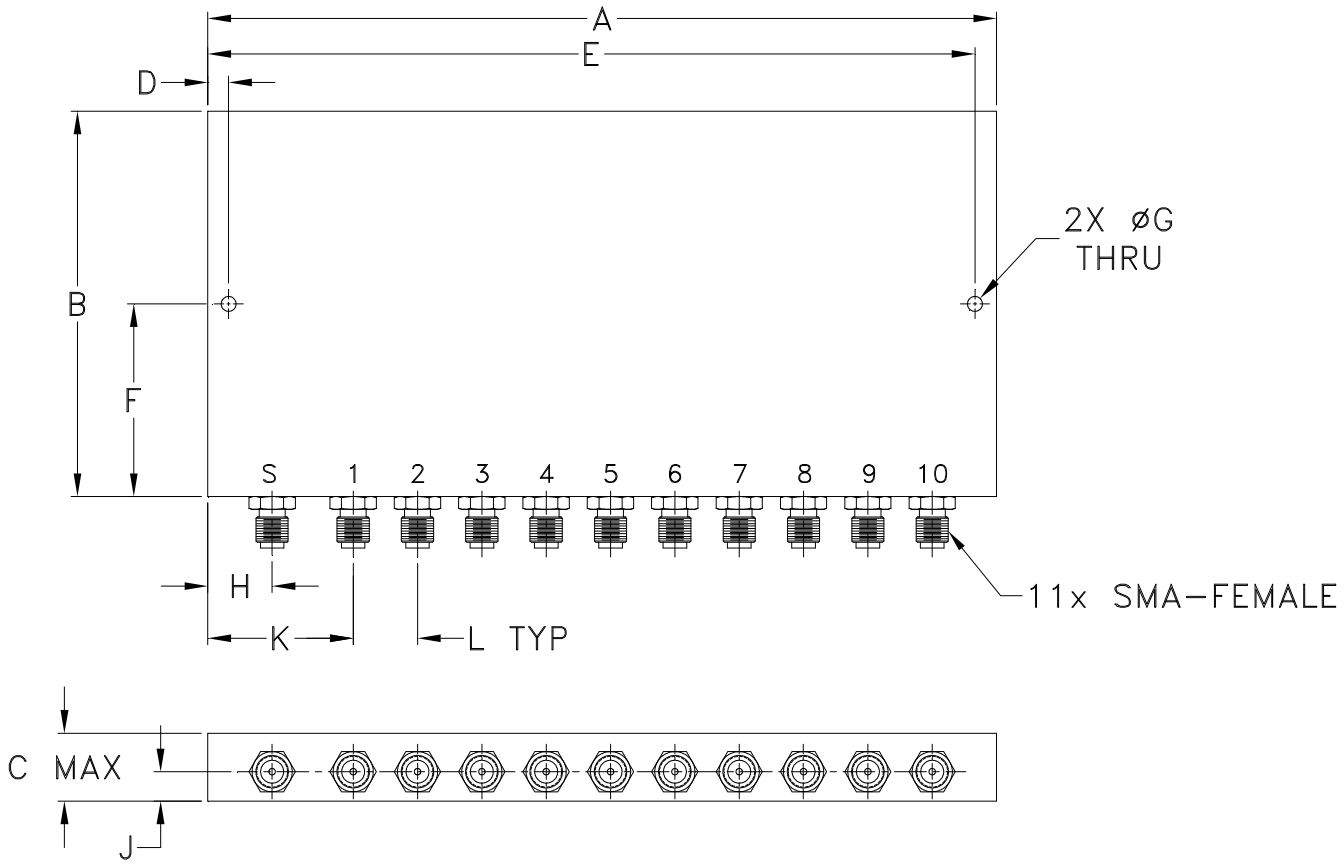
VSWR



Case Style AB

AB204

Outline Dimensions



CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
AB204	6.13 (155.70)	3.00 (76.20)	.53 (13.46)	.162 (4.11)	5.962 (151.43)	1.500 (38.10)	.116 (2.95)	.50 (12.70)	.25 (6.35)	1.13 (28.70)	.50 (12.70)	207

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.

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