Coaxial

Power Splitter/Combiner

ZX10-4-19-S+

4 Way-0° 50Ω 1425 to 1900 MHz

Generic photo used for illustration purposes only

CASE STYLE: GR1026

Connectors	Model
SMA	ZX10-4-19-S+

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

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	2.5W max.*
Power Input (as a combiner)	0.125W max.

*maximum VSWR at output 1.2:1

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4

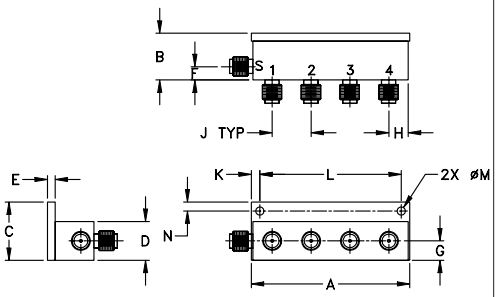
Features

- low insertion loss, 0.75 dB typ.
- high isolation, 20 dB typ.
- rigid unibody construction
- gold plated connectors; nickel plated body
- low cost
- small size
- protected by US patent 6,790,049

Applications

- GPS
- antenna arrays
- signal distribution
- test bench

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
2.04	.60	.75	.50	.10	.17	.25	.25
51.82	15.24	19.05	12.70	2.54	4.32	6.35	6.35

J	K	L	M	N			wt
.50	.11	1.820	.106	.12			grams
12.70	2.79	46.23	2.69	3.05			60.0

Electrical Specifications (T_{AMB}=25°C)

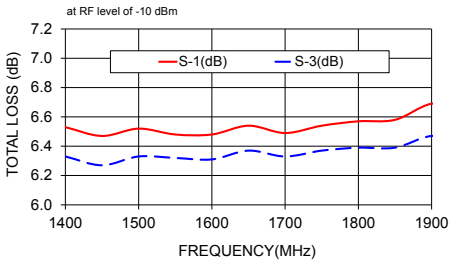
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 6 dB		PHASE UNBALANCE (Deg.)	AMPLITUDE UNBALANCE (dB)	INPUT VSWR (:1)	OUTPUT VSWR (:1)
f_L-f_U	Typ.	Min.	Typ.	Max.	Max.	Max.	Typ.	Typ.
1425-1900	**20**	**16**	**0.75**	**1.0**	**6.0**	**0.9**	**1.2**	**1.2**
1450-1775	24	20	0.75	1.0	5.0	0.8	1.2	1.2

Typical Performance Data

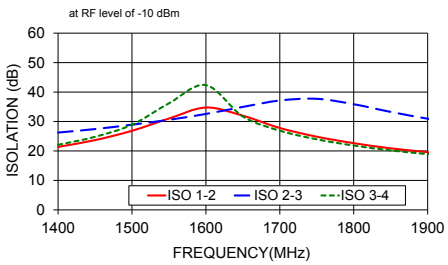
Freq. (MHz)	Total Loss[1] (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	3-4						
1400.00	6.53	6.64	6.33	6.26	0.38	21.38	26.25	22.07	1.28	1.20	1.16	1.17	1.16	1.18
1450.00	6.47	6.59	6.27	6.18	0.41	23.68	27.43	24.80	1.31	1.16	1.16	1.18	1.16	1.18
1500.00	6.52	6.66	6.33	6.22	0.44	26.85	28.92	28.90	1.47	1.13	1.17	1.18	1.16	1.18
1550.00	6.48	6.66	6.32	6.18	0.47	31.00	30.58	36.18	1.78	1.10	1.17	1.19	1.16	1.18
1600.00	6.48	6.64	6.31	6.15	0.49	34.74	32.57	42.35	2.00	1.08	1.18	1.19	1.16	1.18
1650.00	6.54	6.72	6.37	6.20	0.52	31.97	34.96	31.70	2.17	1.07	1.18	1.20	1.17	1.18
1700.00	6.49	6.68	6.33	6.13	0.55	27.80	37.13	26.89	2.59	1.06	1.19	1.20	1.18	1.19
1750.00	6.54	6.71	6.37	6.14	0.57	24.84	37.71	23.95	2.80	1.06	1.20	1.21	1.19	1.19
1800.00	6.57	6.74	6.39	6.14	0.60	22.65	35.87	21.84	3.08	1.06	1.22	1.22	1.20	1.20
1850.00	6.58	6.71	6.39	6.10	0.62	20.89	33.26	20.18	3.46	1.05	1.24	1.23	1.22	1.21
1900.00	6.69	6.79	6.47	6.16	0.64	19.59	30.95	18.94	3.58	1.05	1.26	1.24	1.24	1.23
1950.00	6.67	6.77	6.44	6.11	0.66	18.39	28.85	17.81	4.01	1.04	1.29	1.26	1.27	1.25
1975.00	6.75	6.79	6.50	6.13	0.66	17.91	27.99	17.36	4.09	1.03	1.30	1.27	1.28	1.25
2000.00	6.71	6.73	6.44	6.07	0.66	17.37	27.07	16.85	4.45	1.03	1.31	1.28	1.29	1.26

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

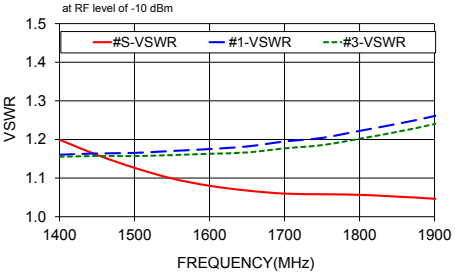
ZX10-4-19-S+
TOTAL LOSS



ZX10-4-19-S+
ISOLATION



ZX10-4-19-S+
VSWR



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

4 Way-0° Power Splitter/Combiner ZX10-4-19+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)				
	S-1	S-2	S-3	S-4		1-2	2-3	3-4			S	1	2	3	4
1425.0	6.57	6.64	6.34	6.25	0.39	22.30	26.03	23.65	1.36	1425.0	1.14	1.16	1.17	1.13	1.16
1430.0	6.57	6.65	6.34	6.25	0.40	22.54	26.15	23.93	1.34	1430.0	1.13	1.16	1.17	1.13	1.16
1435.0	6.57	6.65	6.34	6.25	0.40	22.78	26.27	24.23	1.33	1435.0	1.13	1.16	1.17	1.13	1.16
1440.0	6.57	6.65	6.34	6.25	0.40	23.04	26.39	24.54	1.32	1440.0	1.12	1.16	1.17	1.13	1.16
1445.0	6.57	6.65	6.35	6.24	0.41	23.29	26.51	24.86	1.31	1445.0	1.12	1.16	1.17	1.13	1.17
1450.0	6.57	6.65	6.34	6.24	0.41	23.56	26.64	25.19	1.30	1450.0	1.11	1.16	1.17	1.13	1.17
1460.0	6.57	6.65	6.35	6.24	0.41	24.11	26.90	25.89	1.28	1460.0	1.11	1.16	1.18	1.13	1.17
1470.0	6.57	6.66	6.35	6.24	0.42	24.69	27.17	26.63	1.24	1470.0	1.10	1.16	1.18	1.13	1.17
1480.0	6.57	6.66	6.35	6.23	0.42	25.31	27.46	27.43	1.22	1480.0	1.09	1.16	1.18	1.13	1.17
1490.0	6.57	6.66	6.35	6.23	0.43	25.96	27.76	28.32	1.19	1490.0	1.08	1.16	1.18	1.13	1.17
1500.0	6.57	6.66	6.35	6.23	0.43	26.66	28.06	29.29	1.15	1500.0	1.08	1.16	1.18	1.13	1.17
1510.0	6.58	6.67	6.35	6.23	0.44	27.42	28.37	30.37	1.14	1510.0	1.07	1.16	1.18	1.14	1.17
1520.0	6.58	6.67	6.36	6.23	0.44	28.25	28.68	31.60	1.11	1520.0	1.07	1.16	1.18	1.14	1.17
1530.0	6.58	6.67	6.36	6.23	0.45	29.15	29.00	33.02	1.07	1530.0	1.06	1.17	1.18	1.14	1.17
1540.0	6.58	6.68	6.36	6.23	0.45	30.14	29.34	34.67	1.05	1540.0	1.06	1.17	1.18	1.14	1.17
1550.0	6.58	6.68	6.36	6.22	0.45	31.20	29.69	36.58	1.02	1550.0	1.05	1.17	1.19	1.14	1.17
1560.0	6.58	6.68	6.37	6.22	0.46	32.35	30.07	38.77	0.98	1560.0	1.05	1.17	1.19	1.14	1.18
1570.0	6.59	6.69	6.37	6.22	0.46	33.59	30.48	41.11	0.95	1570.0	1.05	1.17	1.19	1.14	1.18
1580.0	6.59	6.69	6.37	6.22	0.47	34.90	30.91	42.80	0.92	1580.0	1.04	1.17	1.19	1.14	1.18
1590.0	6.59	6.69	6.38	6.22	0.47	36.23	31.34	42.37	0.88	1590.0	1.04	1.17	1.19	1.15	1.17
1600.0	6.59	6.69	6.38	6.22	0.47	37.38	31.77	40.30	0.85	1600.0	1.04	1.18	1.19	1.15	1.17
1620.0	6.60	6.70	6.39	6.22	0.48	37.82	32.74	35.92	0.77	1620.0	1.04	1.18	1.19	1.15	1.18
1640.0	6.60	6.70	6.39	6.22	0.49	35.75	33.84	32.73	0.72	1640.0	1.05	1.18	1.19	1.15	1.18
1660.0	6.61	6.71	6.40	6.22	0.49	33.23	35.07	30.35	0.65	1660.0	1.05	1.19	1.19	1.16	1.18
1680.0	6.62	6.71	6.41	6.22	0.50	31.00	36.46	28.49	0.58	1680.0	1.06	1.19	1.20	1.16	1.18
1700.0	6.62	6.72	6.42	6.22	0.50	29.14	37.99	26.95	0.49	1700.0	1.06	1.20	1.20	1.17	1.19
1715.0	6.63	6.73	6.43	6.22	0.51	27.97	39.33	25.98	0.44	1715.0	1.07	1.20	1.20	1.17	1.19
1730.0	6.64	6.73	6.44	6.22	0.51	26.96	40.86	25.15	0.41	1730.0	1.07	1.20	1.21	1.17	1.20
1745.0	6.64	6.73	6.44	6.22	0.51	26.05	42.24	24.39	0.40	1745.0	1.07	1.21	1.21	1.18	1.20
1760.0	6.65	6.74	6.45	6.22	0.51	25.21	43.04	23.67	0.39	1760.0	1.07	1.21	1.21	1.18	1.20
1775.0	6.66	6.74	6.46	6.22	0.52	24.45	43.17	23.02	0.38	1775.0	1.07	1.22	1.21	1.19	1.20
1790.0	6.66	6.74	6.47	6.22	0.52	23.76	42.53	22.43	0.37	1790.0	1.08	1.22	1.22	1.19	1.21
1805.0	6.67	6.75	6.48	6.22	0.52	23.14	41.38	21.89	0.36	1805.0	1.08	1.23	1.22	1.20	1.21
1820.0	6.68	6.75	6.48	6.23	0.52	22.56	40.01	21.39	0.34	1820.0	1.08	1.23	1.22	1.20	1.21
1835.0	6.69	6.75	6.49	6.23	0.52	22.02	38.62	20.91	0.36	1835.0	1.08	1.24	1.22	1.21	1.22
1850.0	6.69	6.75	6.50	6.23	0.53	21.51	37.35	20.47	0.44	1850.0	1.08	1.24	1.23	1.21	1.22
1860.0	6.70	6.75	6.51	6.23	0.53	21.20	36.57	20.18	0.48	1860.0	1.07	1.25	1.23	1.22	1.22
1870.0	6.71	6.75	6.51	6.23	0.53	20.90	35.83	19.92	0.53	1870.0	1.07	1.25	1.23	1.22	1.23
1880.0	6.71	6.76	6.52	6.23	0.53	20.61	35.10	19.67	0.57	1880.0	1.07	1.26	1.24	1.23	1.23
1890.0	6.72	6.76	6.52	6.23	0.53	20.34	34.42	19.44	0.61	1890.0	1.07	1.26	1.24	1.23	1.24
1900.0	6.72	6.76	6.53	6.23	0.53	20.08	33.75	19.21	0.67	1900.0	1.07	1.27	1.25	1.23	1.24

[1] Total Loss = Insertion Loss+ 6dB Splitter Loss

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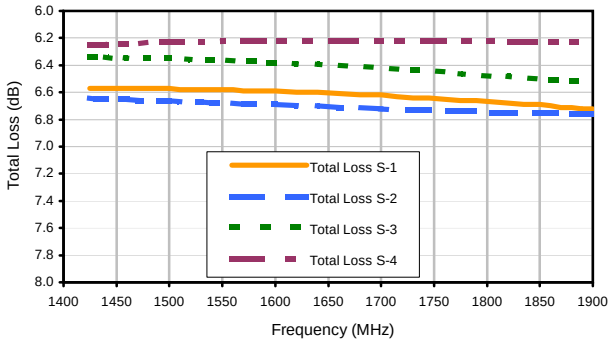
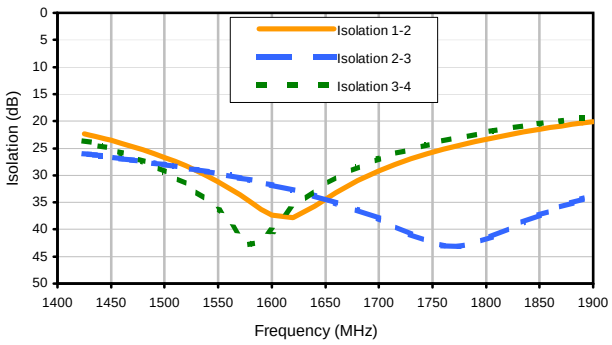
4 Way-0° Power Splitter/Combiner ZX10-4-19+

Typical Performance Curves

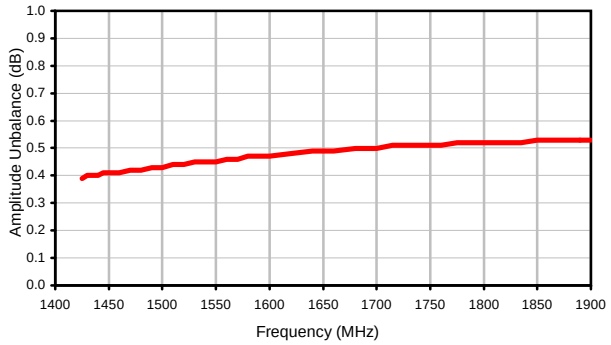
Total Loss



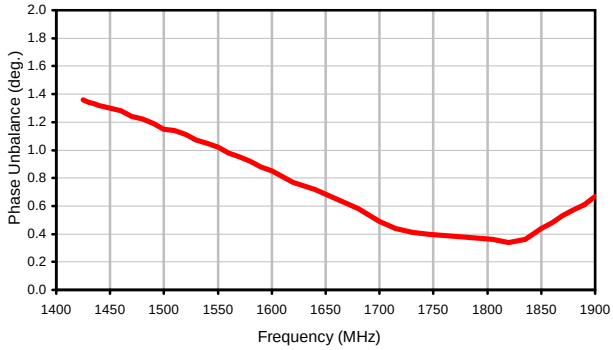
Isolation



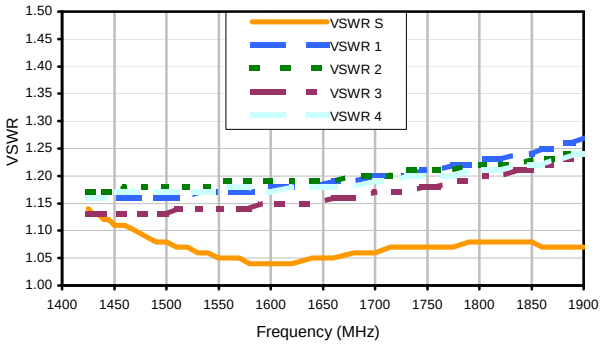
Amplitude Unbalance



Phase Unbalance



VSWR



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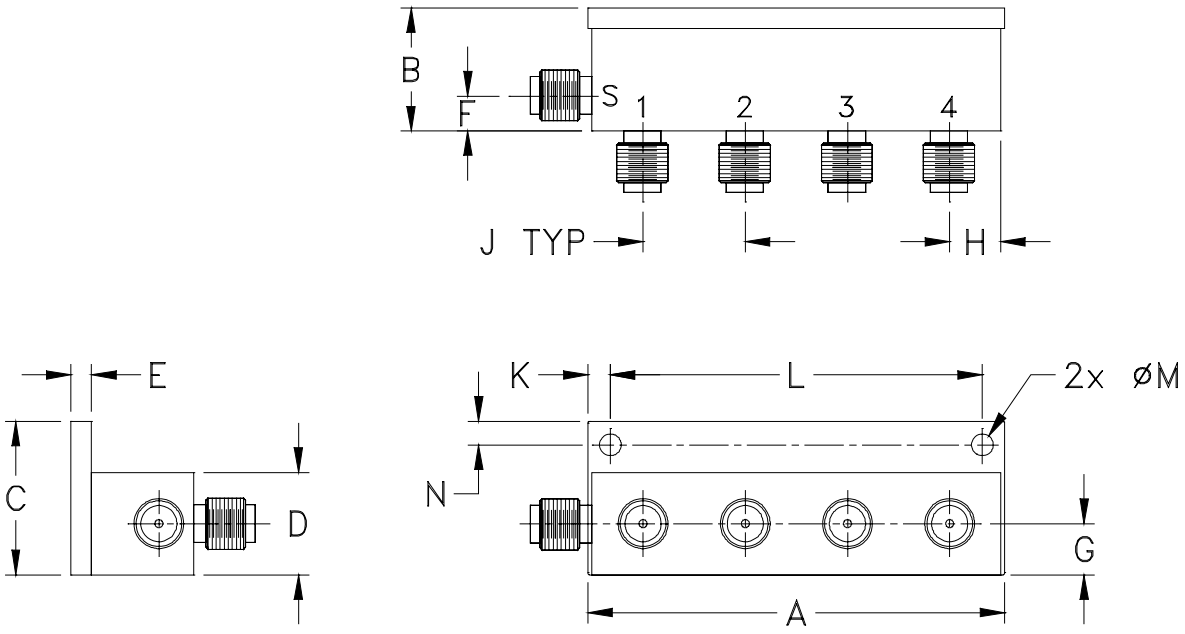
Case Style GR

GR1026

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT. GRAM
GR1026	2.04 (51.82)	.60 (15.24)	.75 (19.05)	.50 (12.70)	.10 (2.54)	.17 (4.32)	.25 (6.35)	.25 (6.35)	.50 (12.70)	.11 (2.79)	1.820 (46.23)	.106 (2.69)	.12 (3.05)	60.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015.
Tolerance on hole size and interaxes dimensions to be ±.005.

Notes:
1. Case material: Brass.
2. Case finish: Nickel plate.

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Mini-Circuits

Environmental Specifications **ENV28T5**

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	-40° to 85°C	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

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