DC Pass

Power Splitter/Combiner

ZAPD-21+

2 Way-0° 50Ω 500 to 2000 MHz

N-Type version shown

CASE STYLE: F53

Connectors	Model
BNC	ZAPD-21+
SMA	ZAPD-21-S+
N-TYPE	ZAPD-21-N+

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	0.125W max.
DC Current	800 mA (400mA for each port)

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2

Features

- wideband, 500 to 2000 MHz
- low insertion loss, 0.25 dB typ.
- good isolation, 25 dB typ.
- up to 10W power input as splitter
- excellent amplitude unbalance, 0.1 dB typ.
- excellent phase unbalance, 1 deg. typ.
- excellent VSWR, 1.20:1 typ.
- rugged shielded case

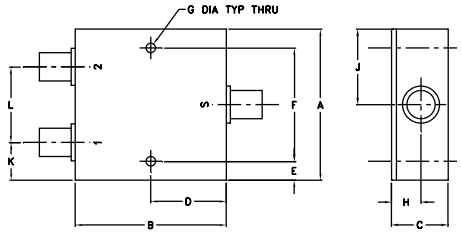
Applications

- UHF
- GPS
- cellular
- PCS/DCS
- communications systems
- instrumentation

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
2.00	2.00	.75	1.00	.13	1.750	.125
50.80	50.80	19.05	25.40	3.30	44.45	3.18

H	J	K	L	wt
.39	1.00	.50	1.00	grams
9.91	25.40	12.70	25.40	170.0

Electrical Specifications

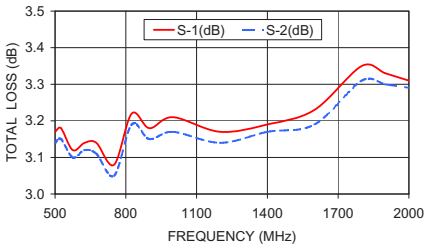
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 3.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)
f_L-f_U	Typ.	Min	Typ.	Max.	Max.	Max.
500-2000	25	18	0.25	1.0	3	0.2

Typical Performance Data

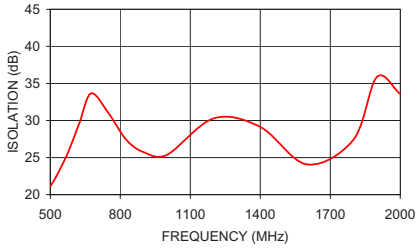
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
500.00	3.17	3.14	0.03	21.12	0.45	1.31	1.16	1.17
525.00	3.18	3.15	0.03	22.44	0.48	1.27	1.13	1.14
575.00	3.12	3.10	0.02	25.62	0.50	1.18	1.07	1.08
625.00	3.14	3.12	0.02	29.70	0.53	1.10	1.02	1.03
675.00	3.14	3.11	0.03	33.67	0.60	1.03	1.04	1.02
750.00	3.08	3.05	0.03	30.96	0.61	1.08	1.11	1.09
825.00	3.22	3.19	0.03	27.43	0.73	1.17	1.17	1.15
900.00	3.18	3.15	0.03	25.73	0.77	1.24	1.21	1.19
1000.00	3.21	3.17	0.04	25.37	0.68	1.29	1.23	1.22
1200.00	3.17	3.14	0.03	30.28	0.92	1.21	1.15	1.16
1400.00	3.19	3.17	0.02	29.13	1.15	1.03	1.01	1.03
1600.00	3.23	3.19	0.04	24.08	1.27	1.16	1.10	1.08
1800.00	3.35	3.31	0.03	27.44	1.41	1.22	1.16	1.15
1900.00	3.33	3.30	0.03	35.87	1.42	1.19	1.18	1.17
2000.00	3.31	3.29	0.01	33.59	1.48	1.15	1.17	1.18

1. Total Loss = Insertion Loss + 3dB splitter loss.

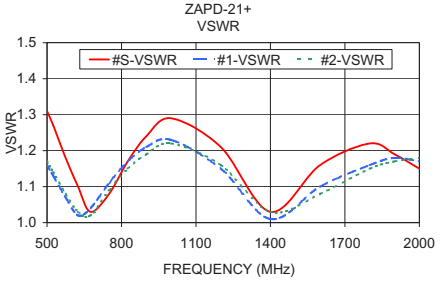
ZAPD-21+
TOTAL LOSS



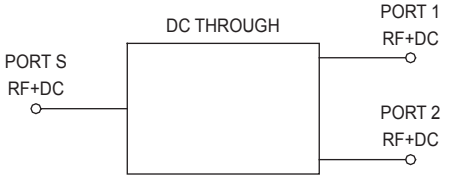
ZAPD-21+
ISOLATION



ZAPD-21+
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

REV. E
M151107
ZAPD-21+
HY/TD/CP/AM
151015

2 Way-0° Power Splitter/Combiner ZAPD-21+

Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS[1] (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)	PHASE UNBALANCE (deg.)
	S-1	S-2		1-2	
500.0	3.17	3.14	0.03	21.12	0.45
525.0	3.18	3.15	0.03	22.44	0.48
550.0	3.14	3.11	0.03	23.93	0.43
575.0	3.12	3.10	0.02	25.62	0.50
600.0	3.12	3.09	0.03	27.55	0.50
625.0	3.14	3.12	0.02	29.70	0.53
650.0	3.13	3.09	0.03	31.94	0.59
675.0	3.14	3.11	0.03	33.67	0.60
700.0	3.13	3.12	0.01	33.86	0.62
725.0	3.15	3.12	0.03	32.66	0.58
750.0	3.08	3.05	0.03	30.96	0.61
775.0	3.14	3.11	0.04	29.56	0.77
800.0	3.19	3.14	0.04	28.38	0.63
825.0	3.22	3.19	0.03	27.43	0.73
850.0	3.19	3.15	0.04	26.62	0.76
875.0	3.09	3.07	0.03	25.97	0.79
900.0	3.18	3.15	0.03	25.73	0.77
925.0	3.22	3.18	0.03	25.50	0.73
950.0	3.25	3.21	0.04	25.35	0.75
975.0	3.23	3.19	0.04	25.28	0.77
1000.0	3.21	3.17	0.04	25.37	0.68
1050.0	3.16	3.15	0.01	25.90	0.82
1100.0	3.28	3.24	0.04	26.94	0.98
1150.0	3.18	3.16	0.03	28.28	0.76
1200.0	3.17	3.14	0.03	30.28	0.92
1250.0	3.27	3.23	0.04	32.32	0.99
1300.0	3.20	3.19	0.02	33.12	1.03
1350.0	3.23	3.21	0.02	31.50	1.12
1400.0	3.19	3.17	0.02	29.13	1.15
1450.0	3.24	3.23	0.01	27.09	1.17
1500.0	3.21	3.18	0.02	25.58	1.20
1550.0	3.27	3.23	0.03	24.62	1.32
1600.0	3.23	3.19	0.04	24.08	1.27
1650.0	3.27	3.24	0.03	24.13	1.39
1700.0	3.29	3.25	0.04	24.57	1.32
1750.0	3.24	3.22	0.02	25.55	1.40
1800.0	3.35	3.31	0.03	27.44	1.41
1850.0	3.30	3.27	0.03	30.36	1.43
1900.0	3.33	3.30	0.03	35.87	1.42
1950.0	3.33	3.32	0.01	43.17	1.38
2000.0	3.31	3.29	0.01	33.59	1.48

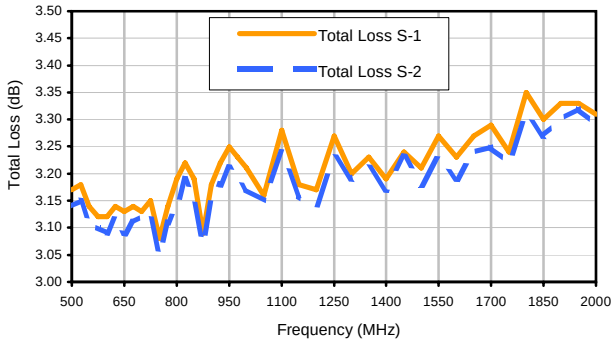
FREQUENCY (MHz)	VSWR (:1)		
	S	1	2
500.0	1.31	1.16	1.17
525.0	1.27	1.13	1.14
550.0	1.22	1.10	1.11
575.0	1.18	1.07	1.08
600.0	1.13	1.04	1.05
625.0	1.10	1.02	1.03
650.0	1.06	1.02	1.01
675.0	1.03	1.04	1.02
700.0	1.03	1.07	1.05
725.0	1.05	1.09	1.07
750.0	1.08	1.11	1.09
775.0	1.12	1.13	1.12
800.0	1.14	1.15	1.13
825.0	1.17	1.17	1.15
850.0	1.20	1.19	1.17
875.0	1.22	1.20	1.18
900.0	1.24	1.21	1.19
925.0	1.26	1.22	1.20
950.0	1.28	1.23	1.21
975.0	1.29	1.23	1.22
1000.0	1.29	1.23	1.22
1050.0	1.29	1.22	1.22
1100.0	1.28	1.21	1.21
1150.0	1.25	1.18	1.19
1200.0	1.21	1.15	1.16
1250.0	1.16	1.12	1.13
1300.0	1.12	1.09	1.10
1350.0	1.07	1.05	1.07
1400.0	1.03	1.01	1.03
1450.0	1.05	1.02	1.01
1500.0	1.09	1.05	1.02
1550.0	1.12	1.08	1.06
1600.0	1.16	1.10	1.08
1650.0	1.18	1.12	1.11
1700.0	1.20	1.14	1.12
1750.0	1.21	1.15	1.14
1800.0	1.22	1.16	1.15
1850.0	1.21	1.17	1.16
1900.0	1.19	1.18	1.17
1950.0	1.18	1.18	1.18
2000.0	1.15	1.17	1.18

[1]Total Loss = Insertion Loss + 3dB Splitter Loss

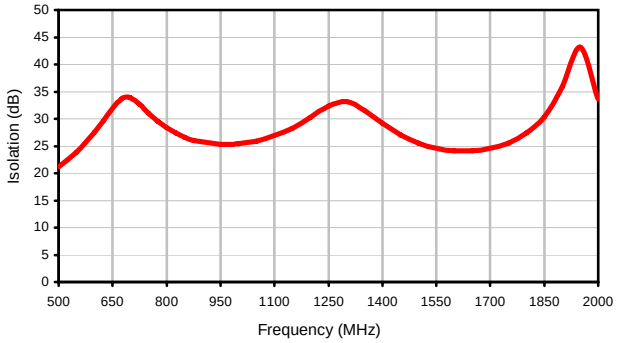
2 Way-0° Power Splitter/Combiner ZAPD-21+

Typical Performance Curves

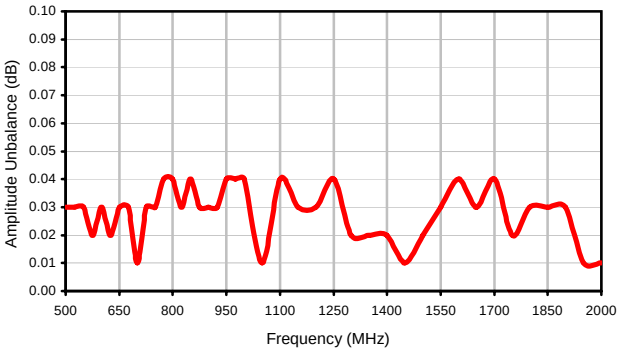
Total Loss



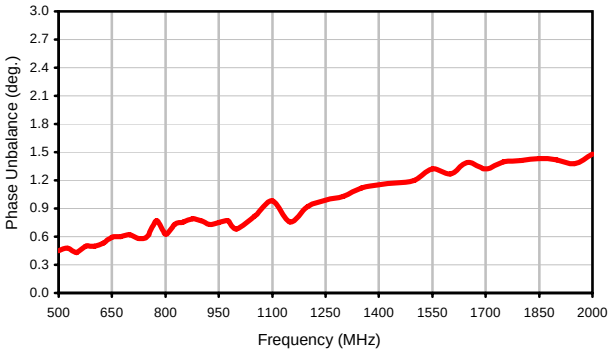
Isolation



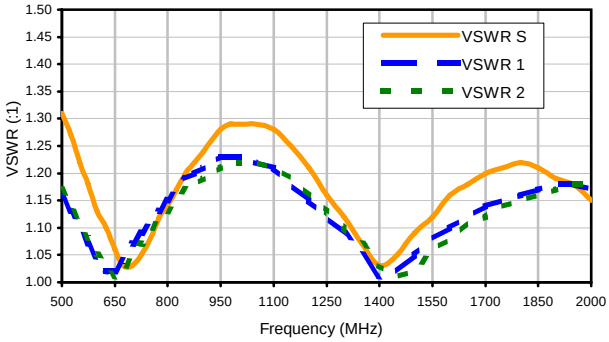
Amplitude Unbalance



Phase Unbalance

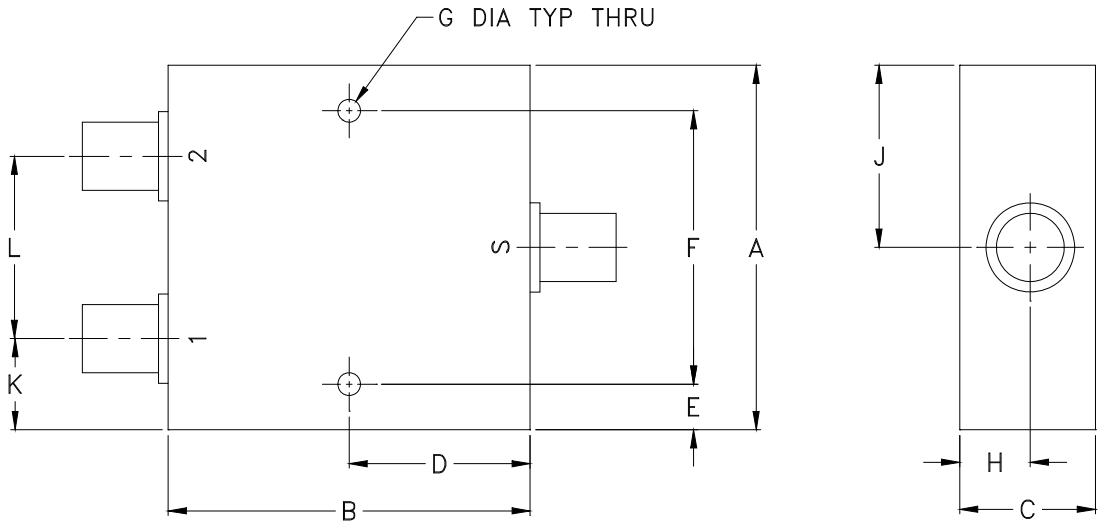


VSWR



Case Style F

Outline Dimensions F53



CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
F53	2.00 (50.80)	2.00 (50.80)	.75 (19.05)	1.00 (25.40)	.13 (3.30)	1.750 (44.45)	.125 (3.18)	.39 (9.91)	1.00 (25.40)	.50 (12.70)	1.00 (25.40)	170.0

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.
3. Refer to the individual model data sheet for the type of connectors available.

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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

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