N-Type / SMA

Adaptenuator

NM-SF-20+

50Ω 0.5W 20dB DC to 3000 MHz

CASE STYLE: DJ1208

Connectors		Model
Conn1	**Conn2**	
N-Male	**SMA-Female**	NM-SF-20+

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C

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

Features

- Wideband, DC to 3000 MHz
- Improved interface matching
- Excellent VSWR, 1.1:1 typ
- Rugged unibody construction

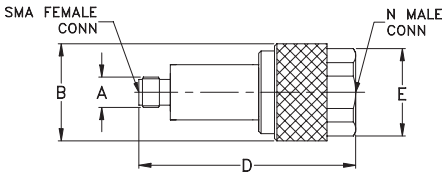
Applications

- Instrumentation
- Provides attenuation and connector type change
- Minimizes hardware

+RoHS Compliant

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

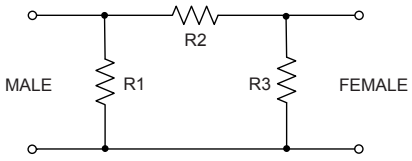
Outline Drawing



Outline Dimensions (inch / mm)

A	B	D	E	wt.
.25	**.80**	**1.79**	**.72**	**grams**
6.35	20.32	45.47	18.29	49.0

Electrical Schematic



Electrical Specifications

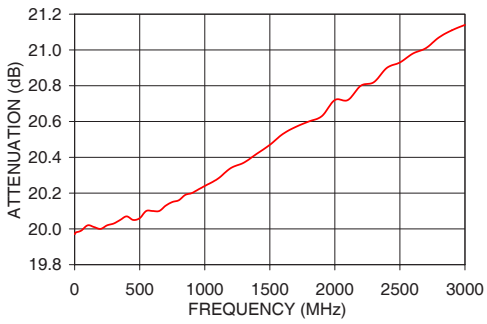
FREQ. (MHz)	ATTENUATION (dB) Flatness *									VSWR (:1)						MAX. INPUT POWER (W)
		DC-0.5 GHz		DC-1 GHz		DC-2 GHz		DC-3 GHz		DC-1 GHz		DC-2 GHz		DC-3 GHz		
f_L - f_U	Nom.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	
DC-3000	20±0.3	0.05	0.15	0.1	0.3	0.4	0.6	0.6	1.0	1.01	1.20	1.04	1.20	1.09	1.25	0.5

* Flatness defined as peak to peak attenuation over band divided by 2.

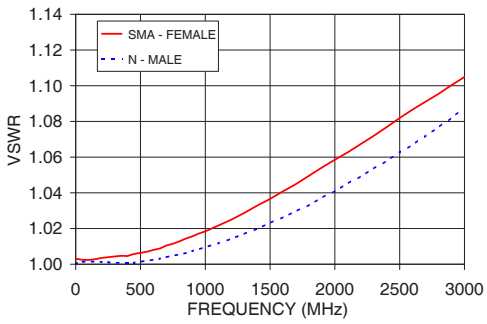
Typical Performance Data

FREQUENCY (MHz)	ATTENUATION (dB)	VSWR (:1)	
		SMA-FEMALE	N-MALE
1	19.97	1.00	1.00
10	19.98	1.00	1.00
100	20.02	1.00	1.00
300	20.03	1.00	1.00
500	20.06	1.01	1.00
750	20.15	1.01	1.00
1000	20.24	1.02	1.01
1200	20.34	1.03	1.01
1400	20.42	1.03	1.02
1600	20.53	1.04	1.03
1800	20.60	1.05	1.03
2000	20.72	1.06	1.04
2200	20.80	1.07	1.05
2500	20.93	1.08	1.06
2700	21.01	1.09	1.07
3000	21.14	1.10	1.09

NM-SF-20+
ATTENUATION



NM-SF-20+
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

Type-N/BNC Adaptenuator NM-SF-20+

Typical Performance Data

FREQUENCY (MHz)	ATTENUATION (dB)	SMA-FEMALE RETURN LOSS (dB)	N-MALE RETURN LOSS (dB)
1	19.97	56.33	80.09
10	19.98	56.54	68.32
50	19.99	58.21	63.53
100	20.02	58.52	62.72
150	20.01	57.15	62.87
200	20.00	55.03	63.79
250	20.02	54.20	65.51
300	20.03	53.31	67.72
350	20.05	52.60	69.18
400	20.07	52.79	68.91
450	20.05	50.81	67.97
500	20.06	50.01	63.33
550	20.10	49.13	59.92
600	20.10	47.96	58.03
650	20.10	47.16	56.07
700	20.13	45.65	54.19
750	20.15	44.87	52.39
800	20.16	43.91	51.28
850	20.19	42.95	50.05
900	20.20	42.21	48.70
950	20.22	41.38	47.57
1000	20.24	40.80	46.49
1100	20.28	39.39	44.74
1200	20.34	38.19	43.00
1300	20.37	36.99	41.54
1400	20.42	35.84	40.13
1500	20.47	34.91	38.87
1600	20.53	33.97	37.71
1700	20.57	33.16	36.71
1800	20.60	32.33	35.73
1900	20.63	31.58	34.76
2000	20.72	30.92	33.93
2100	20.72	30.34	33.12
2200	20.80	29.74	32.37
2300	20.82	29.19	31.67
2400	20.90	28.64	31.01
2500	20.93	28.10	30.35
2600	20.98	27.63	29.79
2700	21.01	27.22	29.18
2800	21.07	26.83	28.65
2900	21.11	26.42	28.09
3000	21.14	26.05	27.55

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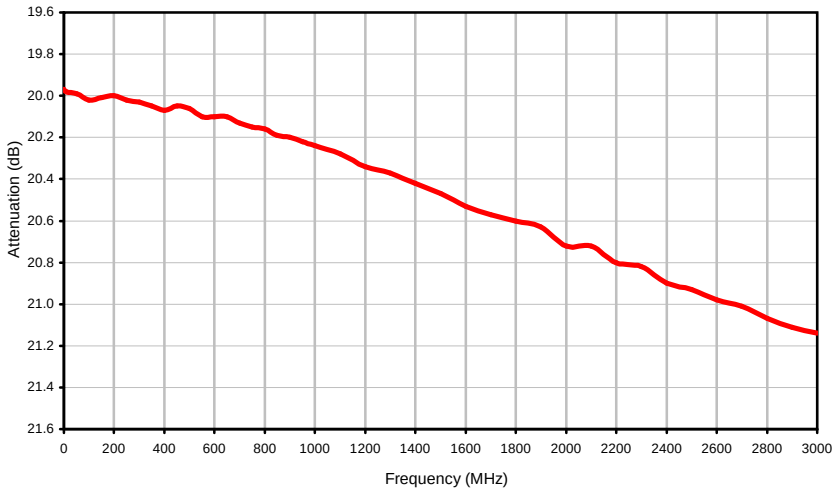
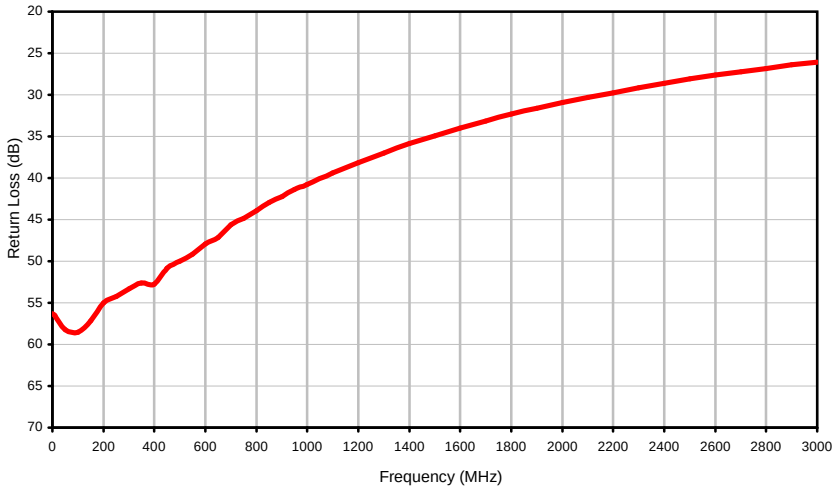
Type-N/BNC Adaptenuator NM-SF-20+

Typical Performance Curves

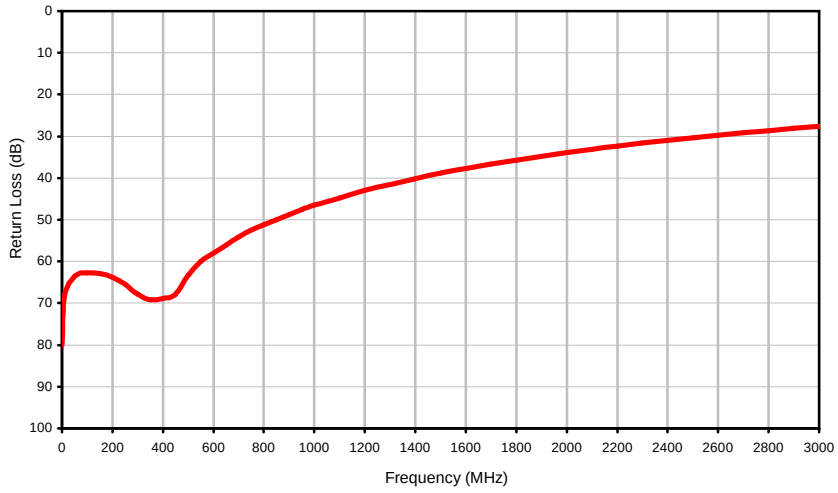
Attenuation



BNC-Male Return Loss



N-Male Return Loss



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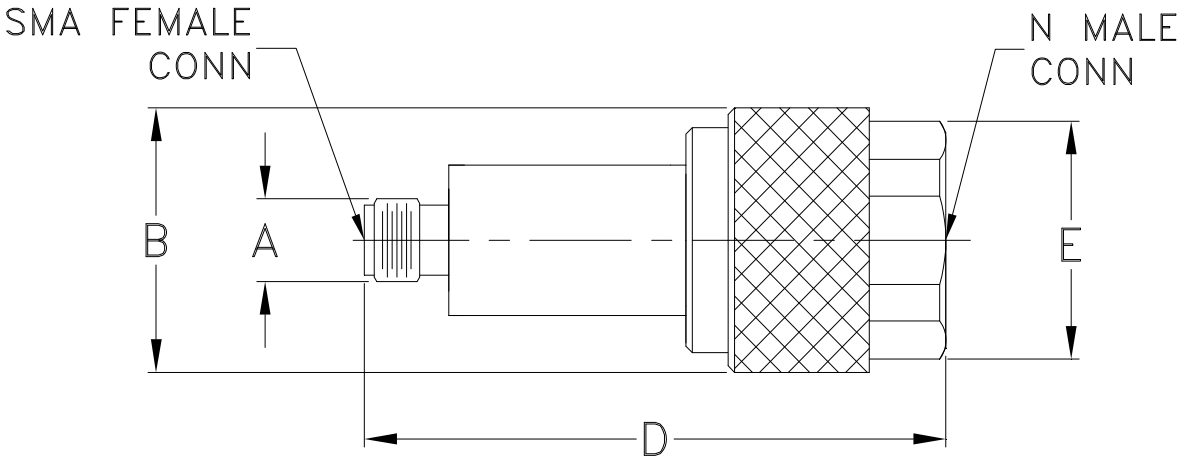
DJ1208

Outline Dimensions



CASE#	A	B	D	E	WT. GRAM
DJ1208	.25 (6.35)	.80 (20.32)	1.79 (45.47)	.72 (18.29)	49

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

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

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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

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