

Coaxial

# SMA Fixed Attenuator

## VAT-20+

50Ω 0.5W 20dB DC to 6000 MHz



### Maximum Ratings

Operating Temperature	-45°C to 100°C
Storage Temperature	-55°C to 100°C

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

### Features

- wideband coverage, DC to 6000 MHz
- rugged unibody construction
- off-the-shelf availability
- very low cost

### Applications

- impedance matching
- signal level adjustment

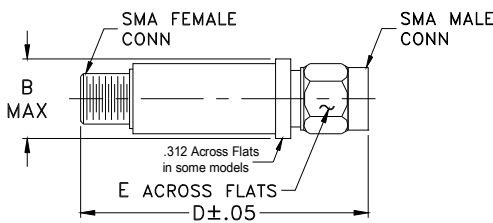
CASE STYLE: FF704

Connectors	Model	Price	Qty.
SMA	VAT-20+	\$11.95 ea.	(1-9)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Outline Drawing



### Outline Dimensions (inch/mm)

B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

### Electrical Specifications

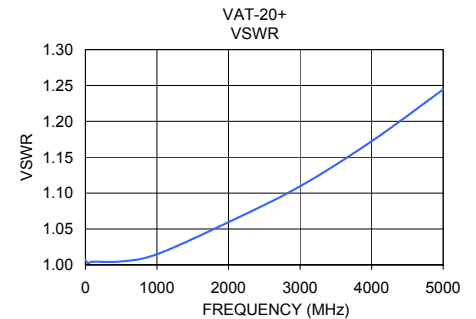
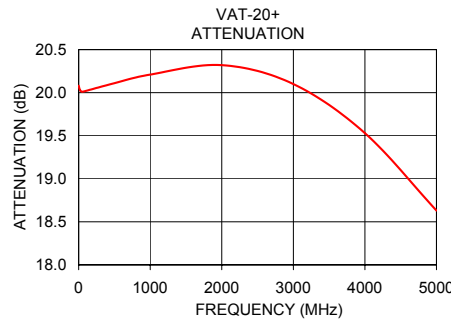
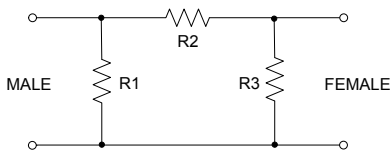
FREQ. RANGE (MHz)	ATTENUATION * (dB)					VSWR (:1)					MAX. INPUT POWER (W)
	Flatness **										
	DC-3 GHz	3-5 GHz	5-6 GHz	DC-6 GHz		DC-3 GHz	3-5 GHz	5-6 GHz			
$f_c - f_u$	Nom.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Max.	Typ.	
DC-6000	20±0.3	0.45	0.55	0.35	0.85	1.05	1.20	1.20	1.50	1.30	0.5

\* Attenuation varies by 0.3 dB max. over temperature.  
 \*\* Flatness= variation over band divided by 2.

### Typical Performance Data

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
0.03	20.08	1.01
20.00	20.03	1.00
50.00	20.01	1.00
100.00	20.02	1.00
500.00	20.11	1.00
1000.00	20.21	1.01
2000.00	20.32	1.06
3000.00	20.10	1.11
4000.00	19.53	1.17
5000.00	18.63	1.24

### Electrical Schematic



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 ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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REV. G  
 M129173  
 VAT-20+  
 LC/TD/CP/AM  
 101007

# DC Block SMA

## BLK-89+

50Ω 0.1 MHz to 8 GHz

### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Input Voltage	50V Max.

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

### Features

- broadband performance
- low insertion loss
- rugged unibody construction
- off-the-shelf availability

### Applications

- test and measurement instrumentation
- communication systems
- defense systems



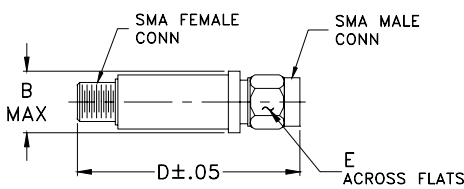
CASE STYLE: FF888

SMA Connectors	Model	Price	Qty.
Female-Male	BLK-89-S+	\$14.95 ea.	(1-9)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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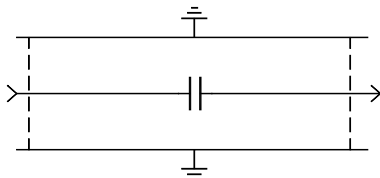
### Outline Drawing



### Outline Dimensions (inch/mm)

B	D	E	wt
.410	1.18	.312	grams
10.41	29.97	7.92	7.0

### Electrical Schematic

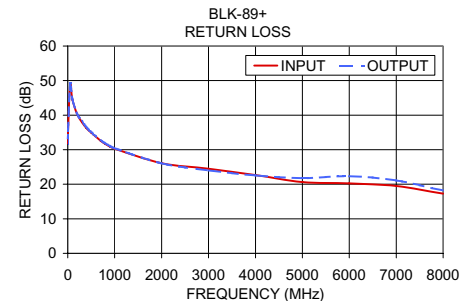
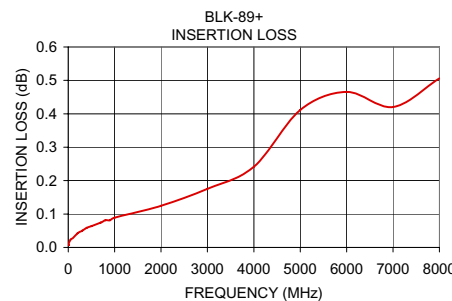


### Electrical Specifications at 25°C

FREQUENCY (MHz)	INSERTION LOSS (dB)		RETURN LOSS (dB)	
	Typ.	Max.	Typ.	Min.
0.1 - 100	0.010	0.09	40	20
100 - 1000	0.10	0.3	36	25
1000 - 4000	0.15	0.8	24	18
4000 - 8000	0.5	0.9	20	13

### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		Male	Female
0.3	0.01	31.86	31.89
0.6	0.01	32.19	32.23
0.9	0.01	32.52	32.58
1.0	0.01	32.63	32.69
50.0	0.02	48.75	48.76
100.0	0.03	44.40	44.44
200.0	0.04	40.26	40.33
300.0	0.05	37.96	38.27
400.0	0.06	36.24	36.45
500.0	0.06	34.94	35.08
700.0	0.07	32.57	32.78
800.0	0.08	31.67	31.84
900.0	0.08	30.86	31.04
1000.0	0.09	30.27	30.41
2000.0	0.12	26.09	26.06
3000.0	0.18	24.48	24.04
4000.0	0.24	22.65	22.58
5000.0	0.41	20.64	21.77
6000.0	0.47	20.26	22.30
7000.0	0.42	19.52	21.11
8000.0	0.51	17.29	18.16



For detailed performance specs & shopping online see web site

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REV. C  
M108294  
BLK-89+  
EDU-9517/2  
UR/LC/CP  
080218

# Coaxial Adapter, SMA-M to BNC-F

## SM-BF50+

50Ω

DC to 2 GHz



CASE STYLE: DJ1024

### 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

- flat response
- excellent VSWR
- low cost adapters, available from stock
- brass body, nickel plated

Connectors	Model	Price	Qty.
Conn1 SMA-M	Conn2 BNC-F	SM-BF50+	\$3.95 ea. (1-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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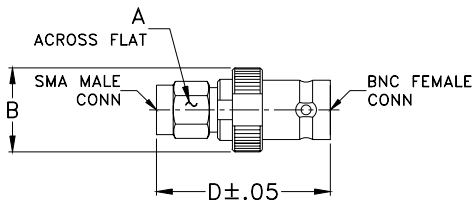
### Applications

- interconnection of RF cables and equipment
- testing

### Electrical Specifications $T_{AMB}=25^{\circ}C$

FREQUENCY (GHz)	INSERTION LOSS (dB)	VSWR (:1) Max.
$f_L-f_U$	Typ.	DC-2 GHz
DC-2	0.05	1.20

### Outline Drawing

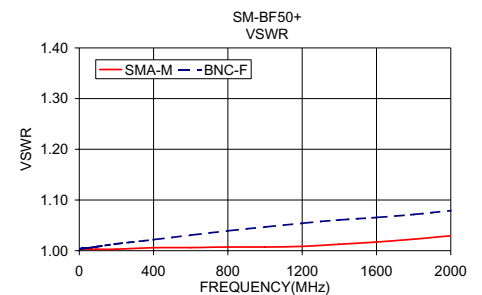
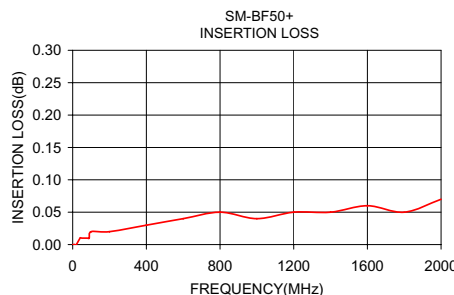


### Outline Dimensions (inch/mm)

A	B	C	D	E	wt
.312	.53	--	1.10	--	grams
7.92	13.46	--	27.94	--	8.6

### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	
		SMA-M	BNC-F
1.00	0.00	1.00	1.00
10.00	0.00	1.00	1.00
20.00	0.00	1.00	1.00
40.00	0.01	1.00	1.01
50.00	0.01	1.00	1.01
60.00	0.01	1.00	1.01
70.00	0.01	1.00	1.01
80.00	0.01	1.00	1.01
90.00	0.01	1.00	1.01
100.00	0.02	1.00	1.01
200.00	0.02	1.00	1.01
400.00	0.03	1.01	1.02
600.00	0.04	1.01	1.03
800.00	0.05	1.01	1.04
1000.00	0.04	1.01	1.05
1200.00	0.05	1.01	1.05
1400.00	0.05	1.01	1.06
1600.00	0.06	1.02	1.07
1800.00	0.05	1.02	1.07
2000.00	0.07	1.03	1.08



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