

20 dB Fixed Attenuator for Cryogenic Application,
SMA Male to SMA Female, DC to 18 GHz Rated
to 2 Watt Passivated Stainless Steel Body



FMAT7701-20

Features

- Cryogenic Operating Temperature Range -265.15 to 125Deg °C
- Bidirectional
- DC to 18 GHz Range
- Attenuation 20 +/- 0.5dB
- 2 Watts Average Input Power
- VSWR <1.35:1

Applications

- Quantum Computing
- Precision Measurements
- Instrumentation
- Prototyping and Characterization

Description

Fairview Microwave carries a wide range of fixed attenuators with a broad selection of attenuation levels, frequency ranges, and power dissipation ranges. RF microwave attenuators (also known as RF pads) lower the amplitude of a signal (attenuate) a known amount and can be used in a wide variety of applications. These attenuator pads are used when a signal needs to be reduced to protect measurement equipment or other circuitry, to extend the range of power meters and amplifiers, and to impedance match circuits by reducing the VSWR seen by adjacent components. RF attenuators can prevent signal overload in amplifiers, receivers and detectors, adjusting the signal level to a range that is optimal.

Few RF components are as commonly used as fixed coaxial attenuators, and Fairview Microwave carries one of the largest in-stock varieties and ships them same day. The 20 dB Fixed Attenuator FMAT7701-20 is rated to 2 Watts and operates from DC to 18 GHz. The versatile coaxial package uses SMA male to SMA female connectors. The FMAT7701 series are specially designed and manufactured for cryogenic applications with RF performances guaranteed at 4 kelvin.

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Nominal Attenuation		20		dB
Attenuation Accuracy			±0.5	dB
VSWR		1.25:1	1.35:1	
Input Power, CW			2	Watts
Derates linearly from 100% @ 25°C to 10% @ 125°C				
Input Power, Peak			500	Watts
5 µSec PW, .01% duty cycle				

Specifications by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12.4	12.4 to 18			GHz
VSWR, Max	1.15:1	1.25:1	1.35:1			

Mechanical Specifications

Size

- Length 1.02 in [25.91 mm]
- Width/Diameter 0.31 in [7.87 mm]

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Height	0.31 in [7.87 mm]
Weight	0.05 lbs [22.68 g]
Body Material and Plating	Passivated Stainless Steel

Configuration

Design	Fixed, Bidirectional
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Connectors

Description	Connector 1	Connector 2
Type	SMA Male	SMA Female
Contact Material and Plating	Beryllium Copper, Gold	Beryllium Copper, Gold
Dielectric Type	PTFE	PTFE
Torque	7 in-lbs 0.79 Nm	7 in-lbs 0.79 Nm

Environmental Specifications

Temperature

Operating Range	-269.15 to +125 deg C
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Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Typical Performance Data

20 dB Fixed Attenuator for Cryogenic Application, SMA Male to SMA Female, DC to 18 GHz Rated to 2 Watt Passivated Stainless Steel Body from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

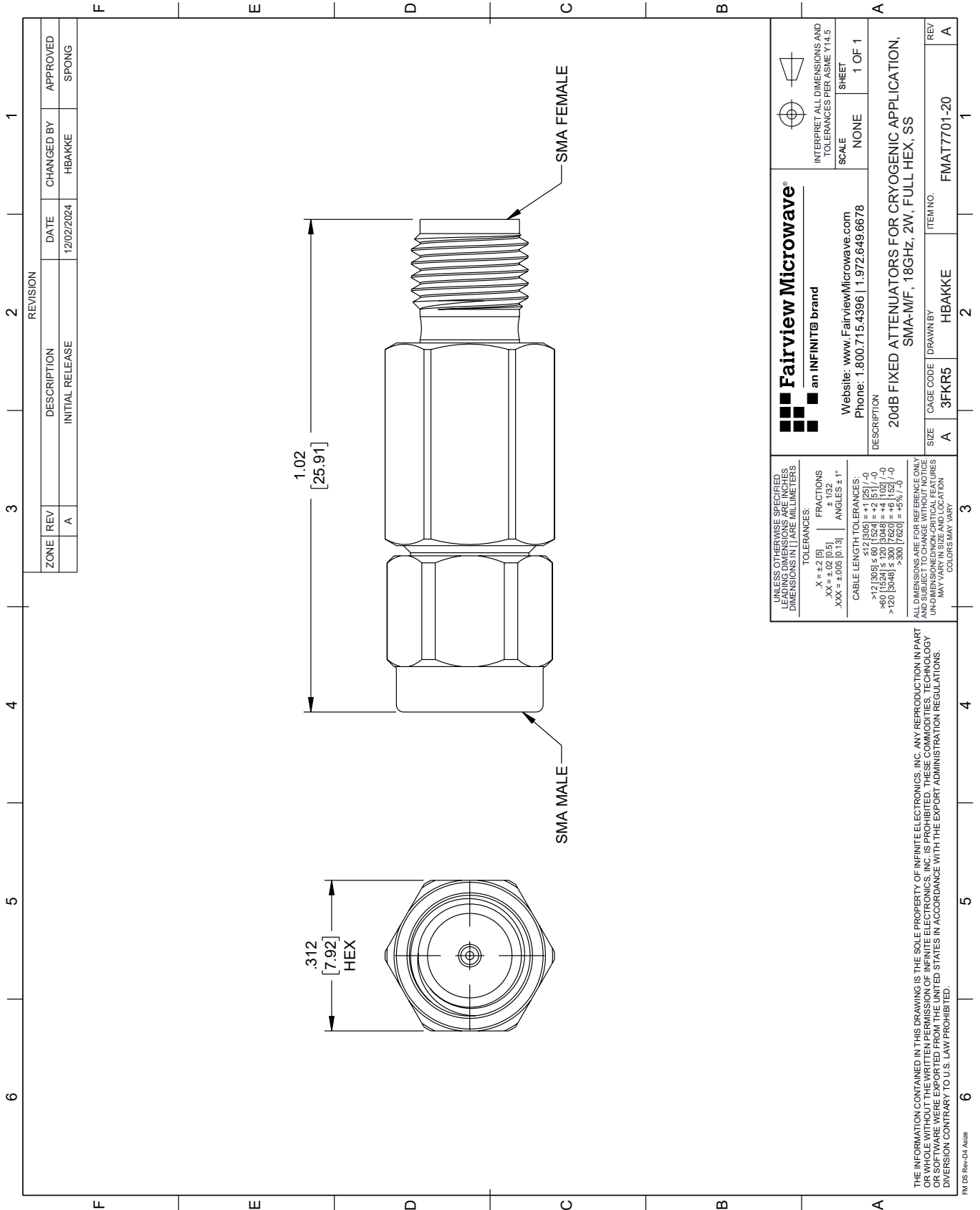
For additional information on this product, please click the following link: [20 dB Fixed Attenuator for Cryogenic Application, SMA Male to SMA Female, DC to 18 GHz Rated to 2 Watt Passivated Stainless Steel Body FMAT7701-20](#)

URL: <https://www.fairviewmicrowave.com/20db-fixed-attenuator-sma-male-sma-male-2-watts-fmat7701-20-p.aspx>

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FMAT7701-20 CAD Drawing

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REVISION		DATE	CHANGED BY	APPROVED	
ZONE	REV	DESCRIPTION	DATE	CHANGED BY	APPROVED
	A	INITIAL RELEASE	12/02/2024	HBAKKE	SPONG

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an INFINIT® brand

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UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE MILLIMETERS.

TOLERANCES:
 .X = ±.2 [5] FRACTIONS ± 1/32
 .XX = ±.02 [0.5] ANGLES ± 1°
 .XXX = ±.005 [0.13]

CABLE LENGTH TOLERANCES:
 <12 [305] ≤ 60 [1524] = ±.1 [25] / -0
 >60 [1524] ≤ 120 [3048] = ±.4 [102] / -0
 >120 [3048] ≤ 300 [7620] = ±.6 [152] / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY. UNDIMENSIONED NON-CRITICAL FEATURES MAY VARY IN SIZE AND LOCATION. COLORS MAY VARY.

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE: NONE
SHEET: 1 OF 1

DESCRIPTION: 20dB FIXED ATTENUATORS FOR CRYOGENIC APPLICATION, SMA-MF, 18GHz, 2W, FULL HEX, SS

SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	3FKR5	HBAKKE	FMAT7701-20

REV: A

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FM DS Rev-D4 Alt2b