

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



**PE7700-20**

**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**

Pasternack 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 Pasternack carries one of the largest in-stock varieties and ships them same day. The 20 dB Fixed Attenuator PE7700-20 is rated to 2 Watts and operates from DC to 18 GHz. The versatile coaxial package uses SMA male to SMA female connectors. The PE7700 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 to 10% @ 125°C from 25°C				
Input Power, Peak			500	Watts
5 µSec PW, .05% 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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**PE7700-20**

Height	0.31 in [7.87 mm]
Weight	0.005 lbs [2.27 g]
Body Material and Plating	Passivated Stainless Steel
<b>Configuration</b>	
Design	Fixed, Bidirectional

**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**

<b>Temperature</b>	
Operating Range	-269.15 to +125 deg C
Storage Range	-269.15 to +150 deg C

**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 Passivated Stainless Steel Hex/Round Body Rated to 2W, DC to 18 GHz from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

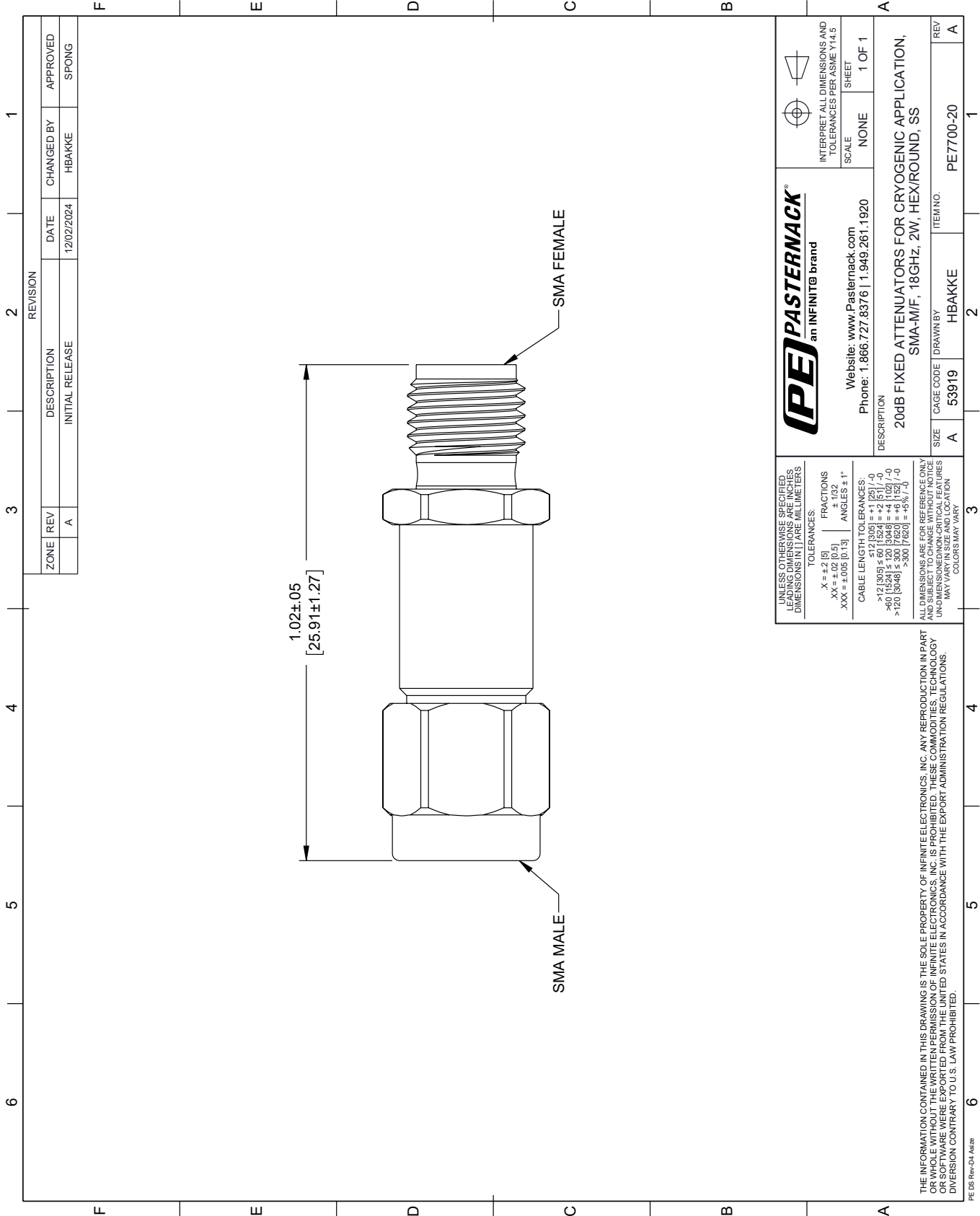
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [20 dB Fixed Attenuator for Cryogenic Application, SMA Male to SMA Female Passivated Stainless Steel Hex/Round Body Rated to 2W, DC to 18 GHz PE7700-20](#)

URL: <https://www.pasternack.com/20db-fixed-sma-male-sma-female-2-watts-attenuator-pe7700-20-p.aspx>

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. Pasternack Enterprises reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack Enterprises does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack Enterprises does not assume liability arising out of the use of any part or document.

# PE7700-20 CAD Drawing

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 Passivated Stainless Steel Hex/Round Body Rated to 2W, DC to 18 GHz



REVISION		DATE	CHANGED BY	APPROVED
ZONE	REV	DESCRIPTION	INITIAL RELEASE	
	A			SPONG

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Website: [www.Pasternack.com](http://www.Pasternack.com)  
 Phone: 1.866.727.8376 | 1.949.261.1920

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE: NONE  
SHEET: 1 OF 1

UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE IN INCHES AND TRAILING DIMENSIONS IN MILLIMETERS

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

CABLE LENGTH TOLERANCES:  
 <12 [305] ±.60 [15.24] = ±.2 [5] / -0  
 >12 [305] ≤ 60 [1524] = ±.4 [10.2] / -0  
 >60 [1524] ≤ 120 [3048] = ±.4 [10.2] / -0  
 >120 [3048] ≤ 300 [7620] = ±.6 [15.24] / -0

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

DESCRIPTION	SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
20dB FIXED ATTENUATORS FOR CRYOGENIC APPLICATION, SMA-MF, 18GHz, 2W, HEX/ROUND, SS	A	53919	HBAKKE	PE7700-20	A

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