

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



### FMAT7700-3

#### Features

- Cryogenic Operating Temperature Range -265.15 to 125Deg °C
- Bidirectional
- DC to 18 GHz Range
- Attenuation 3 +/- 0.3dB
- 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 3 dB Fixed Attenuator FMAT7700-3 is rated to 2 Watts and operates from DC to 18 GHz. The versatile coaxial package uses SMA male to SMA female connectors. The FMAT7700 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                       |         | 3       |         | dB    |
| Attenuation Accuracy                      |         |         | ±0.3    | 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         | 0.86 in [21.84 mm] |
| Width/Diameter | 0.31 in [7.87 mm]  |

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



**FMAT7700-3**

|                           |                            |
|---------------------------|----------------------------|
| Height                    | 0.31 in [7.87 mm]          |
| Weight                    | 0.05 lbs [22.68 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**

3 dB Fixed Attenuator for Cryogenic Application, SMA Male to SMA Female, DC to 18 GHz Rated to 2W Passivated Stainless Steel Hex/Round 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: [3 dB Fixed Attenuator for Cryogenic Application, SMA Male to SMA Female, DC to 18 GHz Rated to 2W Passivated Stainless Steel Hex/Round Body FMAT7700-3](#)

URL: <https://www.fairviewmicrowave.com/3db-fixed-attenuator-sma-male-sma-female-2-watts-fmat7700-3-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. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume liability arising out of the use of any part or document.

FMAT7700-3 CAD Drawing

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

