

# MINI ATTENUATOR

DiCon's Mini Attenuator is an ultra-compact, high precision, variable optical attenuator (VOA), only 15 mm long x 3.5 mm in diameter.

Based on DiCon's proven MEMS technology, the Mini Attenuator utilizes a lens to collect and collimate light from the input fiber, which then travels to DiCon's high precision, ultra-stable MEMS mirror. The MEMS mirror reflects the light and directs it back through the lens, and launches it into the output fiber. Attenuation is achieved by steering the light onto or off of the output fiber by tilting the MEMS mirror via an analog control voltage.



## FEATURES

- Ultra-Compact: 15 mm Long x 3.5 mm Diameter
- Proven DiCon MEMS Mirror Technology
- Lifetime > 1 Billion Cycles
- High Reliability

## APPLICATIONS

DiCon's Mini Attenuator is an ideal ultra-compact solution for power adjustments in erbium-doped fiber amplifiers, and is also useful for distributed power equalization.



# MINI ATTENUATOR

## OPTICAL SPECIFICATIONS<sup>1</sup>

PARAMETER		RATING	
Excess Loss		0.7 dB max.	
WDL	35 nm Wavelength Range, C Band	0 to 15 dB	0.7 dB max.
		15 to 20 dB	1.1 dB max.
	45 nm Wavelength Range, C Band	0 to 15 dB	0.8 dB max.
		15 to 20 dB	1.2 dB max.
40 nm Wavelength Range, L Band	0 to 15 dB	0.8 dB max.	
	15 to 20 dB	1.2 dB max.	
PDL <sup>2</sup>	0 to 10 dB	0.2 dB max.	
	10 to 20 dB	0.3 dB max.	
Attenuation Slope		25 dB/V max.	
Back Reflection		-50 dB max.	
Optical Power		500 mW max.	
Response Time		1 ms max.	
Repeatability <sup>3</sup>		0.1 dB max.	
Durability		1 x 10 <sup>9</sup> cycles min.	
Fiber Type		9/125 singlemode, Corning ClearCurve ZBL	
Operating Temperature		-5°C to +70°C	
Storage Temperature		-40°C to +85°C	

1. All Specifications at room temperature, without connectors
2. Operation from 1570-1610 nm add 0.1 dB
3. Repeatability is defined after 100 cycles

## ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Actuation type	Non-latching
DC Drive Voltage	0-7 VDC
Voltage Damage Threshold	10 VDC max.
Resistance	2 MΩ min.
Power Consumption	20 uWatt max.

## ORDERING INFORMATION

MTS - C - □ - □ - □ - 9 - 2B - □ - □ - □

### Housing Type

C Cylindrical

### Attenuator Type

T Transparent<sup>1</sup>

O Opaque<sup>2</sup>

### Operating Wavelength Range

15 1528 - 1563 nm

15/45 1525 - 1570 nm

16 1570 - 1610 nm

15/16<sup>3</sup> 1528 - 1563 & 1570-1610 nm

### Attenuator Range

35 35 dB min.

40 40 dB min.

S35<sup>4</sup> 35 dB Off state isolation

S40<sup>4</sup> 40 dB Off state isolation

### Fiber Type

9 9/125 μm Singlemode ClearCurve ZBL

### Jacket Type

2B 250 μm barefiber

### Connector Type

FC FC/SPC

FC/APC FC/APC

X specify connector type<sup>5</sup>

N None

### Pigtail Length

1 1 meter

X Specify X meters

### Pin Bending

S Straight Pins

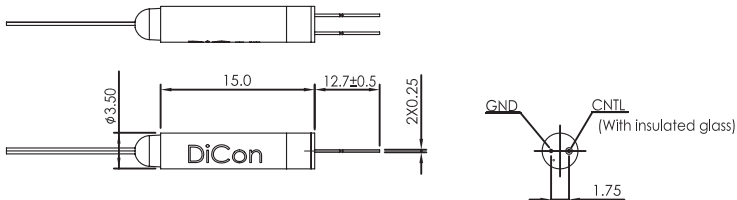
B Bent Pins

1. Minimum insertion loss at 0 V.
2. Minimum insertion loss at 6-7 V. (high isolation at 0 V).
3. Each wavelength band will have its own attenuation curve and the optical specifications are only guaranteed based on the respective curve for that wavelength band.
4. For On/Off functionality only, the WDL and PDL specifications are not applicable
5. Connector Types: FC/UPC, SC, SC/APC, SC/UPC, LC, LC/UPC, MU/UPC.

## MECHANICAL DIMENSIONS

(Units: mm)

### STRAIGHT PINS



### BENT PINS

