

MEMS OPTICAL ATTENUATOR

DiCon's MEMS Optical Attenuator is based on a micro-electro-mechanical system (MEMS) chip. The MEMS chip consists of an electrically movable mirror on a silicon support. A voltage applied to the MEMS chip causes the mirror to rotate, which changes the coupling of light between the input and output fibers of the MEMS Optical Attenuator.



FEATURES

- Small attenuator package
- Based on DiCon's proven MEMS platform
- Available in opaque or transparent versions
- Qualified to GR-1221

APPLICATIONS

MEMS Optical Attenuators are used for distributed power equalization within OADMs, MUX/DMUXes, Band Equalizers, Channel Equalizers, Optical Cross-Connects, Line Cards and Transponders. MEMS Optical Attenuators can also be used for input power adjustment in erbium-doped fiber amplifiers.



MEMS OPTICAL ATTENUATOR

OPTICAL SPECIFICATIONS¹

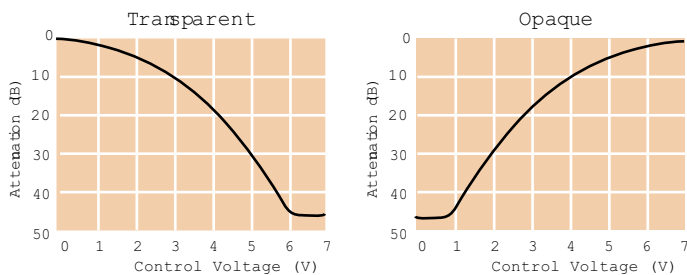
PARAMETER		RATING	
Excess Loss		0.8 dB max	
WDL ²	Broad Band Application	0 to 5 dB	0.2 dB max. ³
		5 to 10 dB	0.3 dB max. ⁴
		10 to 20 dB	0.7 dB max. ⁴
	Narrow Band Application ⁶	0 to 20 dB	0.2 dB max. ⁵
PDL	0 to 15 dB	0.15 dB max. ⁵	
	15 to 20 dB	0.2 dB max. ⁵	
Attenuation Slope		20 dB/V max.	
Back Reflection		-50 dB max.	
Optical Power		500 mW max.	
Response Time		2 ms max.	
Repeatability ⁷		0.1 dB max.	
Durability		1 x 10 ⁹ cycles min.	
Fiber Type		9/125 single mode fiber	
Operating Temperature		-5°C to +70°C	
Storage Temperature		-40°C to +85°C	

- All Specifications at room temperature, without connectors
- WDL is for single band wavelength measured from CWL
- Operation from 1290 - 1330nm or 1570-1610 nm adds 0.2dB
- Operation from 1290 - 1330nm or 1570-1610 nm adds 0.3dB
- Operation from 1290 - 1330nm or 1570-1610 nm adds 0.1dB
- Maximum change of each 2 nm segment within the operating range
- Repeatability is defined within 100 cycles

ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Actuation type	Non-latching
DC Drive Voltage	0-5 VDC (7 V for opaque)
Voltage Damage Threshold	10 VDC max.
Resistance	2 MΩ min.
Power Consumption	20 uWatt max.

OPTICAL PERFORMANCE



ORDERING INFORMATION

MT - C - □ - □ - □ - □ - 9 - □ - □ - □ - □

Housing Type

C Cylindrical

Attenuator Type

T Transparent¹

O Opaque²

Operating Wavelength Range

13 1290 - 1330 nm

15 1528 - 1563 nm

16 1570 - 1610 nm

Custom Wavelength Ranges Available

Attenuator Range

30 30 dB min.

X Specify X dB min. (X <= 40)

Ripple Type

S Slow ripple (broad band)

F Fast ripple (narrow band)

Fiber Type

9 9/125 μm Singlemode

Jacket Type

2B 250 μm barefiber

9L 900 μm loostube

Connector Type

FC FC/SPC

FC/APC FC/APC

X specify connector type³

N None

Pigtail Length

1 1 meter

X Specify X meters

Pin Bending

S Straight Pins

B Bent Pins

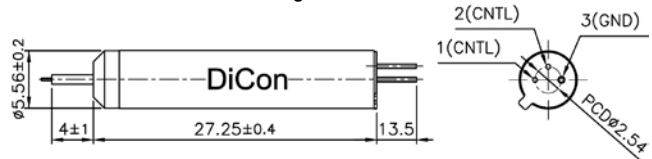
1. Minimum insertion loss at 0 V.

2. Minimum insertion loss at 6 - 7 V (high isolation at 0 V).

3. Connector Types: FC/UPC, SC, SC/APC, SC/UPC, LC, LC/UPC, MU/UPC.

MECHANICAL DIMENSIONS

Straight Pins



Bent Pins

