DiCon Fiberoptics, Inc.

MEMS OPTICAL ATTENUATOR

MEMS VOA, Singlemode Fiber

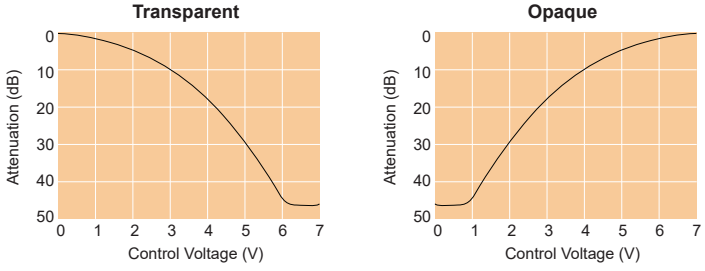
DiCon's **MEMS Optical Attenuator** is based on a micro-electromechanical system (MEMS) chip. The MEMS chip consists of an electrically movable mirror on a silicon support. A voltage applied to the MEMS chip causes the mirror to rotate, which changes the coupling of light between the input and output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

- 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.

Optical Performance



ORDERING INFORMATION

MT - C -□-□-□-□- 9 -□-□-□-□

Housing Type

C	Cylindrical

Attenuator Type

T	Transparent*
O	Opaque**

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

Test Wavelength

O	1310 nm
C	1550 nm
L	1590 nm

**Custom Wavelength Ranges Available*
**Use "/" to add multiple wavelengths (E.g., O/C or O/C/L)*

Attenuator Range

30	30 dB min.*
X	Specify X dB min. (X <= 40)

**Transparent type DC drive voltage is 0-5 VDC for up to 30 dB of attenuation*

Flatness Type

S	Superior broad band flatness
F	Fine narrow band flatness

Fiber Type

9	9/125 µm SMF

**Other fiber options available upon request*

Jacket Type

2B	250 µm bare fiber
9L	900 µm loose tube

Connector Type

N	None
FC	FC/UPC
FC/APC	FC/APC
LC	LC/UPC
LC/APC	LC/APC
SC	SC/UPC
SC/APC	SC/APC

**Other connector types available upon request*

Pigtail Length

1	1 Meter
X	Specify X Meters

**Tolerance is ±0.05 m*

Pin Bending

S	Straight Pins
B	Bent Pins

DiCon® FIBEROPTICS

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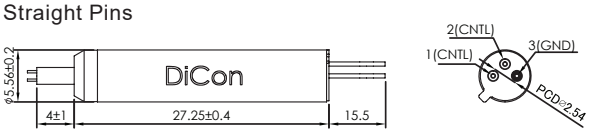
OPTICAL SPECIFICATIONS[1]

Insertion Loss[2]		0.6 dB max.[3]	
WDL[5]	Superior	0 to 1 dB	0.2 dB max.[4]
		1 to 5 dB	0.3 dB max.[4]
		5 to 10 dB	0.5 dB max.[4]
		10 to 20 dB	0.8 dB max.[3]
	Fine[6]	0 to 20 dB	0.2 dB max.
PDL		0 to 15 dB	0.15 dB max.[4]
		15 to 20 dB	0.2 dB max.[3]
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	

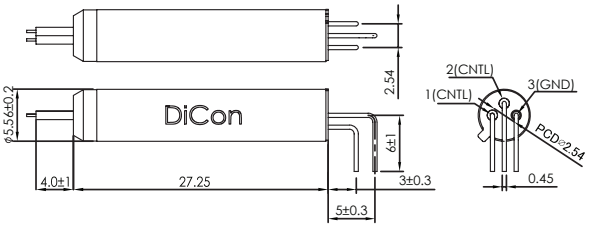
1. All specifications at room temperature
2. Excluding connector loss. Measured with 3-jumper method or equivalent (See TIA/EIA 526-7)
3. Multi-band adds 0.2 dB
4. Multi-band adds 0.1 dB
5. WDL is defined within Test Wavelength ±20 nm
6. Maximum change of each 2 nm segment within the Test Wavelength ±20 nm
7. Repeatability is defined within 100 cycles

Dimensions in mm

Straight Pins



Bent Pins



ELECTRICAL SPECIFICATIONS

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.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-5 to 70°C
Storage Temperature	-40 to 85°C