

SPACE QUALIFIED MEMS OPTICAL ATTENUATOR

Cylindrical Package, Singlemode Fiber



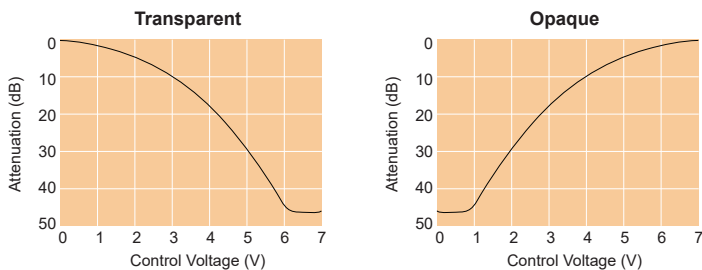
DiCon's **Space Qualified MEMS Optical Attenuator** is based on a micro-electromechanical system (MEMS) chip. The MEMS chip consists of an electrically movable mirror on a silicon support. A voltage applied to the MEMS chip causes the mirror to rotate, which changes the coupling of light between the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

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

MTQ - 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

*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



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OPTICAL SPECIFICATIONS¹

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

ELECTRICAL SPECIFICATIONS

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

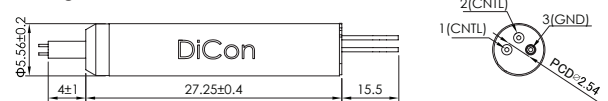
ENVIRONMENTAL SPECIFICATIONS

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

MECHANICAL SPECIFICATIONS

Dimensions in mm

Straight Pins



Bent Pins

