PM MEMS OPTICAL ATTENUATOR

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

FEATURES

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

APPLICATIONS

PM MEMS Optical Attenuators are used for distributed power equalization within OADMs, MUX/DMUXes, Band Equalizers, Channel Equalizers, Optical Cross-Connects, Line Cards and Transponders. Polarization Maintaining Optical Attenuators can also be used for power adjustment in polarization sensitive devices such as modulators.

DiCon FIBEROPTICS

PM MEMS OPTICAL ATTENUATOR

OPTICAL SPECIFICATIONS[1]

PARAMETER		RATING	
Excess Loss		0.8 dB max	
WDL[2]	Broad Band Application	0 to 15 dB	0.7 dB max.[3]
		15 to 20 dB	1.0 dB max.[4]
	Narrow Band Application[6]	0 to 15 dB	0.3 dB max.[5]
		15 to 20 dB	0.4 dB max.[5]
Extinction Ratio		18 dB min.	
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		Panda PM Fiber	
Operating Temperature		-5°C to +70°C	
Storage Temperature		-40°C to +85°C	

1. All Specifications at room temperature, without connectors
2. WDL is for single band wavelength measured from CWL
3. Operation from 1290 - 1330nm or 1570-1610 nm adds 0.2dB
4. Operation from 1290 - 1330nm or 1570-1610 nm adds 0.3dB
5. Operation from 1290 - 1330nm or 1570-1610 nm adds 0.1dB
6. Maximum change of each 2 nm segment within the operating range
7. 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.

ORDERING INFORMATION

MT - C - □ - 15 - □ - □ - □ - □ - □ - □ - □ - □

Housing Type
C Cylindrical

Attenuator Type
T Transparent[1]
O Opaque[2]

Operating Wavelength Range
13 1290 - 1330 nm
15 1528 - 1563 nm
16 1570 - 1610 nm

Attenuator Range
20 20 dB min.
X Specify X dB min. (X <= 40)

Ripple Type
S Slow ripple (broad band)
F Fast ripple (narrow band)

Connector Key Orientation
PMF Fast axis
PMS Slow axis
PMN No Connector

Fiber / Jacket Type
2B 9/125 µm Panda Fiber, 250 µm bare fiber
4B 9/125 µm Panda Fiber, 400 µm buffer
4/LT 9/125 µm Panda Fiber, 900 µm loose tube

Connector Type
FC FC/SPC
FC/APC FC/APC
X specify connector type[3]
N None

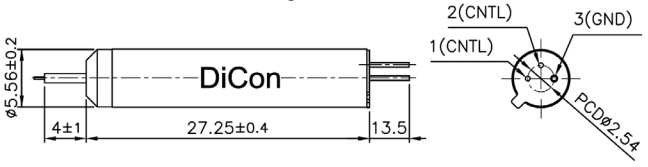
Pigtail Length
1 1 meter
X Specify X meters

Pin Bending
S Straight Pins
B Bent Pins

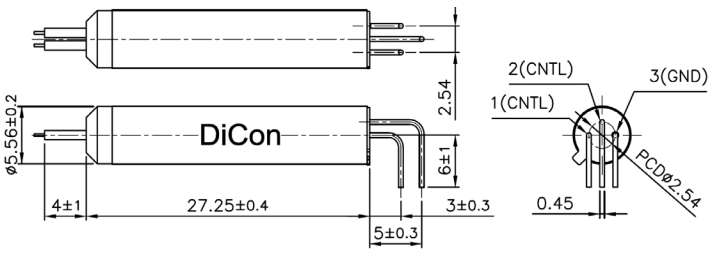
1. Minimum insertion loss at 0 V.
2. Minimum insertion loss at 6 - 7 V (high isolation at 0 V).
3. Connector Types: FC/UPC, SC, SC/APC, SC/UPC, LC, LC/UPC, MU/UPC.

MECHANICAL DIMENSIONS

Straight Pins



Bent Pins



OPTICAL PERFORMANCE