

MEMS ATTENUATOR / ON-OFF SWITCH

DiCon's MEMS Attenuator/On-Off Switch 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 Attenuator/On-Off switch.



FEATURES

- Small attenuator package
- Based on DiCon's proven MEMS platform
- Qualified to GR-1221
- Combines Variable Optical Attenuator and On-Off Switch

APPLICATIONS

Attenuator/On-Off Switches are used as safety shutters during laser transmitter power up as well as for channel equalization once the laser has stabilized. In its highest loss position, the Attenuator/On-Off Switch provides greater than 45 dB of power isolation. Used as an Attenuator, it allows the output power of the laser to be continuously adjusted over a 40 dB range. Attenuator/On-Off Switches are ideally suited for use within line cards or transponders.



MEMS ATTENUATOR / ON-OFF SWITCH

OPTICAL SPECIFICATIONS¹

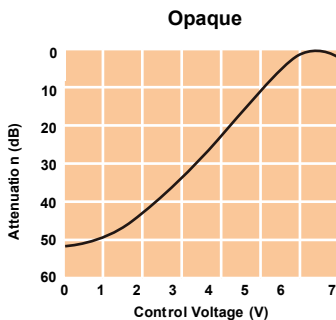
PARAMETER		RATING	
Excess Loss		0.8 dB max	
Off State Isolation		45 dB min	
WDL Flatness	Superior	0 to 1 dB ²	0.2 dB max.
		1 to 5 dB ²	0.3 dB max.
		5 to 10 dB ²	0.5 dB max.
		10 to 20 dB ³	0.8 dB max.
PDL ⁵	0 to 15 dB	0.15 dB max.	
	15 to 20 dB	0.2 dB max.	
Attenuation Slope		20 dB/V max.	
Back Reflection		-50 dB max.	
Optical Power		500 mW max.	
Response Time		2 ms max.	
Repeatability ⁶		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	

1. All Specifications at room temperature, without connectors
2. Operation from 1290 - 1330nm adds 0.4dB
3. Operation from 1290 - 1330nm adds 0.3dB
4. Maximum change of each 2 nm segment within the operating range
5. Operation from 1290 - 1330nm adds 0.1dB
6. 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.

OPTICAL PERFORMANCE



ORDERING INFORMATION

MSA - C - □ - □ - □ - □ - 9 - □ - □ - □ - □

Housing Type

C Cylindrical

Attenuator Type

O Opaque¹

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)

Flatness Type

S Superior broad band flatness
F Fine narrow band flatness

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
N None

Also Available: SC, SC/UPC, SC/APC, ST, ST/UPC, LC

Pigtail Length

1 1 meter
X Specify X meters

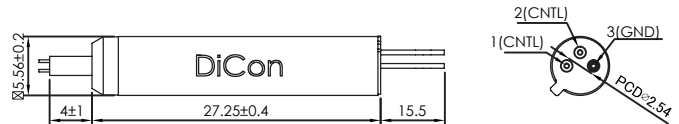
Pin Bending

S Straight Pins
B Bent Pins

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

MECHANICAL DIMENSIONS

Straight Pins



Bent Pins

