

MEMS ATTENUATOR / ON-OFF SWITCH

DiCon's 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 Attenuator/On-Off Switch.



FEATURES

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

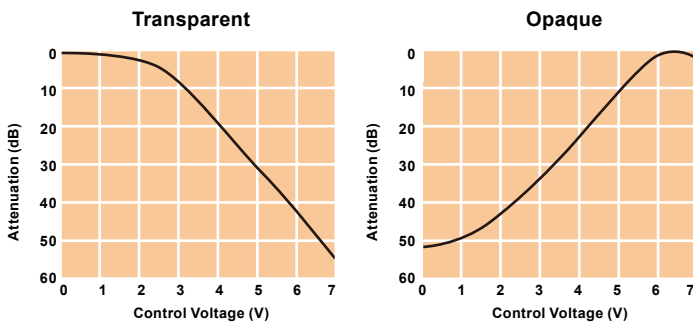
PARAMETER		RATING	
Excess Loss		0.8 dB max	
Off State Isolation		45 dB min	
WDL	Broad Band Application	0 to 15 dB ²	0.4 dB max.
	Narrow Band Application ⁴	15 to 20 dB ³	0.7 dB max.
PDL ⁵	0 to 15 dB	0.15 dB max.	
	15 to 20 dB	0.2 dB max.	
Attenuation Slope		20 dB/V max.	
Polarization Mode Dispersion		0.05 ps 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	

- All Specifications at room temperature, without connectors
- Operation from 1290 - 1330nm adds 0.4dB
- Operation from 1290 - 1330nm adds 0.3dB
- Maximum change of each 2 nm segment within the operating range
- Operation from 1290 - 1330nm adds 0.1dB
- Repeatability is defined after 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

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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)
Fiber Type	
9	9/125 μm Singlemode
Jacket Type	
2B	250 μm barefiber
9L	900 μm looetube
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

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

MECHANICAL DIMENSIONS

