

# MEMS REFLECTION ON/OFF OPTICAL SWITCH

DiCon's MEMS Reflection On/Off Switch provides an optical shutter that can return light through the input fiber. At the core of the switch is DiCon's proprietary MEMS chip; an electrostatically driven mirror implemented using single-crystalline silicon and a stiction-free design. The mirror is capable of rotating along an axis, allowing the input light to be selectively redirected back to the input fiber.



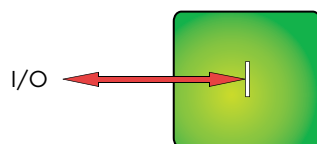
## FEATURES

- Proven MEMS Durability and Reliability
- Compact Form Factor
- Fast Switching Time
- Direct Voltage Control
- Qualified to GR-1221

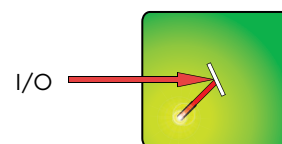
## APPLICATIONS

- Fiber Sensing
- Bio-medical Instrumentation
- Optical Communications
- Video Distribution

Reflection On State



Reflection Off State



# MEMS REFLECTION ON/OFF OPTICAL SWITCH

## OPTICAL SPECIFICATIONS<sup>1</sup>

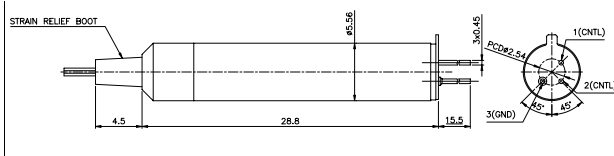
PARAMETER	RATING
Insertion Loss <sup>2,3</sup>	0.7 dB max.
Back Reflection	-45 dB max.
Switching Time	5 ms max.
TDL	0.30 dB max.
WDL <sup>4</sup>	0.20 dB max.
PDL	0.10 dB max.
Repeatability <sup>5</sup>	0.02 dB max.
Durability	10 <sup>9</sup> cycles min.
Optical Power	500 mW max.
Operating Temp	-5 to 70°C
Storage Temp	-40 to 85°C
Fiber Type	9/125 μm single mode

- Specifications are without connectors.
- IL is measured at CWL, 23°C.
- IL is for single-band. Dual-band option adds 0.1 dB.
- WDL is measured in a +/- 20nm range at 23°C.
- Repeatability is defined after 100 cycles.

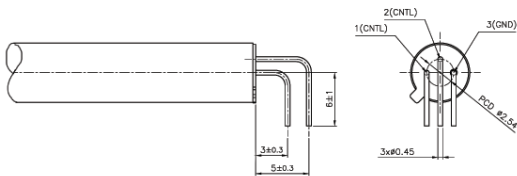
## MECHANICAL DIMENSIONS

(Units: mm)

### Housing



### Pin Bending



## ORDERING INFORMATION

MS-REF10-□-□-□-□-□-□

### Product Code

MS MEMS Switch

### Switch Configuration

REF10 Reflection On/Off Switch

### Switch Type

T Transparent Switch  
O Opaque Switch

### Wavelength Range

13 1290 - 1330 nm  
15 1530 - 1570 nm  
16 1570 - 1610 nm  
13/15 1290 - 1330 & 1530 - 1570 nm  
15/16 1530 - 1550 & 1570 - 1610 nm

### Off State Isolation

35 35 dB min.  
45 45 dB min.  
X Specify X dB min.

### Fiber and Jacket Type

9/BF Corning SMF-28, bare fiber  
9/LT Corning SMF-28, loose tube  
*Or other equivalent 9 μm Singlemode fiber*

### Connector Type

FC/SPC 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  
*Tolerance is +/- 10 cm*

## ELECTRICAL SPECIFICATIONS

PARAMETER	RATING	
Latching Type	Non-latching	
Control Type	Direct Voltage	
Vcc	Transparent	0 - 5 VDC
Voltage	Opaque <sup>1</sup>	0 - 7 VDC
Power Consumption		20 μW max.

- Min. IL is between 6 and 7 VDC.