



1 X 2 MEMS FIBER OPTIC SWITCH

The Umachines 1 x 2 MEMS fiber optic switch (UM12) uses digital 2-D MEMS technology and features low insertion loss, low power consumption and high reliability and is designed to exceed GR-1221.



PRODUCT DESCRIPTION

The UM12 switch provides channel selection between one input fiber and two output fibers and is ideal for increasing network flexibility as well as for a number of other applications.

The switch is designed to operate across a wide range of temperature and humidity conditions and over the full wavelength range of 1280 nm to 1610 nm independent of signal transmission data rates or protocol.

Mechanically, the MEMS element is well designed to avoid both stiction and frictional wear and to withstand the shocks and vibrations associated with both transportation and system operation. The result is a highly reliable device which provides accurate switching over a long lifetime with low power consumption.

Umachines also provides arrays of 1 x 2 switches and customized modules that include taps, detectors, WDMs, splitters and electronics. For arrays of 1 x 2 switches, the MEMS and optical elements can be easily and economically replicated in a single package, further saving board space and cost.

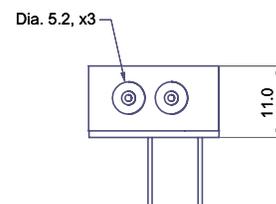
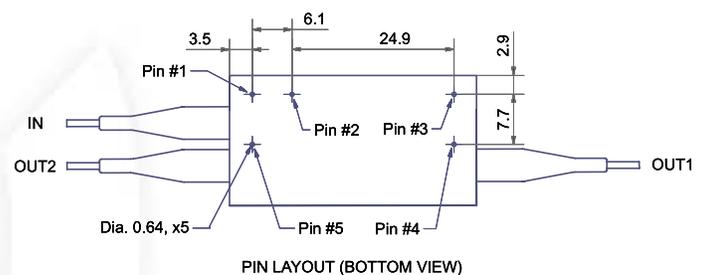
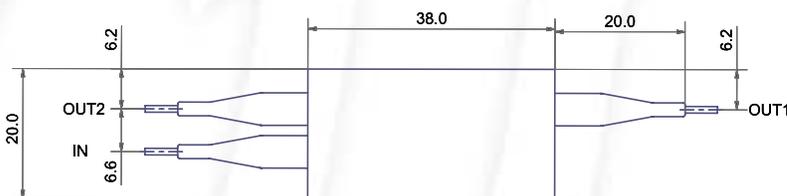
FEATURES

- Highly reliable and stable: switch life is greater than 100 million cycles
- Low insertion loss
- Low power consumption
- Small form factor
- Epoxy-free optical path
- Stiction free

APPLICATIONS

- Protection/System Redundancy
- Reconfigurable Optical Add/Drop Multiplexing (ROADM)
- Monitoring
- Provisioning

All dimensions in mm





SPECIFICATIONS

Parameter	Specification
Insertion Loss ^{1,2}	<0.6dB (0.4dB typ.)
Wavelength Range	1280-1340nm or 1525-1575nm or 1570-1610nm
Wavelength Flatness	<0.1dB
Temp Dependence ³	±0.1dB typ., ±0.15dB max.
Repeatability	±0.02dB
Return Loss	>55dB
Crosstalk	<-55dB
PDL	<0.1dB
PMD	<0.05ps
Optical Power	500mW (higher power rating available upon request)
Lifetime	>100M cycles
Switching Time ⁴	<5ms
Cycle Frequency	<10Hz
Power Consumption	25mW
Power Supply	3.3V
Size	38mm x 20mm x 11mm
Shock Resistance	500G
Operating Temp (Top)	-10 to 65C
Operating Humidity	<85% RH, or <90% RH short term ⁵
Storage Temp	-40 to 85C
Storage Humidity	<85% RH, or <95% RH short term ⁵
Control	Logical input (3.5-5VDC)
Epoxy	No epoxy in optical path

Specification Notes:

1. Excluding connectors
2. Over operating temperature, wavelength and inclusive of PDL.
3. Relative to 23C
4. Time elapsed between power application and achievement of 90% of steady state value of insertion loss.
5. Short term is defined as less than 96 consecutive hours and less than a total of 15 days over a one-year period.

ORDERING INFORMATION

For more information on this or other products and their availability, please contact your local Umachines sales representative or Umachines directly at 626-441-3223 in North America, or via email at info@umachinesinc.com.

Sample: **UM12x15910NC**

U	M	1	2	x							
Code	Product Type	Code	# in Array	Code	Wavelength	Code	Fiber Type	Code	Fiber Length	Code	Connector Type
1 2	1x2 Switch	1	1	3	1280-1340nm	2	9/125/250um	1 0	1.0m	N C	No connector
				5	1525-1575nm	9	9/125/900um	1 5	1.5m	F C	FC/UPC
				6	1570-1610nm			2 0	2.0m	F A	FC/APC
				D	1525-1610nm			x x	specify	S C	SC/UPC
										S A	SC/APC
										L C	LC/PC
										M U	MU

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