

NanoSpeed™ Dual-stage 1x2 Series Fiber Optical Switch (SM, PM, High Power)

(Protected by U.S. patent 7,403,677B1 and pending patents)

Product Description

The NS Series dual-stage 1x2 solid-state fiber optic switch connects optical channels by redirecting an incoming optical signal into a selected output optical fiber. This is achieved using patent pending non-mechanical configurations with solid-state all-crystal designs, which eliminates the need for mechanical movement and organic materials. The dual-stage series of NS fiber-optic switch is designed to meet the demand of high cross-talk in addition of ultra-high reliability, fast response time, and continuous switching operation. The device is bidirectional.

The NS Series switch is controlled by 5V TTL signals with a specially designed electronic driver having performance optimized for various repetition rate.

Performance Specifications

NS Series Dual-stage 1x2 Switch	Min	Typical	Max	Unit
Central wavelength ^[1]	780		1650	nm
Insertion Loss ^[2]	1260-1650nm	1.0	1.4	dB
	960-1100nm	1.0	1.4	
Cross Talk ^[3]	30	35	45	dB
PDL (SMF Switch only)		0.2	0.35	dB
PMD (SMF Switch only)		0.1	0.3	ps
ER (PMF Switch only)	18	25		dB
IL Temperature Dependency		0.25	0.5	dB
Return Loss	45	50	60	dB
Response Time (Rise, Fall)			300	ns
Fiber Type	SMF-28, Panda PM, or equivalent			
Driver Repeat Rate	100kHz driver	DC	100	kHz
	300kHz driver	DC	300	
Optic power Handling ^[4]	Normal power switches		300	mW
	High power switches		5	W
Operating Temperature	-5		70	°C
Storage Temperature	-40		85	°C

[1] Operation bandwidth is +/- 25nm approximately at 1550nm.

[2] Measured without connectors. For other wavelength, please contact us.

[3] Cross talk is measured at 100kHz, which may be degraded at the high repeat rate.

[4] Defined at 1310nm/1550nm. For the shorter wavelength, the handling power may be reduced, please contact us for more information.

Features

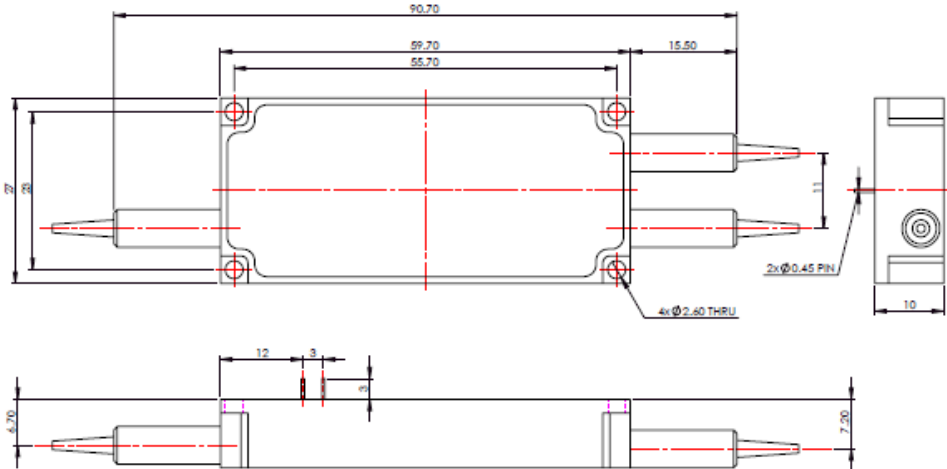
- Solid-State
- High on-off ratio
- High speed
- Ultra-high reliability
- Low insertion loss
- Compact

Applications

- Optical blocking
- Configurable operation
- Instrumentation

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Mechanical Dimensions (mm)



Optical Path Driving Table

Optical Path	TTL Signal
Port 1 → Port 2	L (< 0.8V)
Port 1 → Port 3	H (> 3.5V)

Driving Board Selection

Maximum Repetition Rate	Part Number (P/N)
5kHz	SWDR-11a251111
100kHz	SWDR-11a261111
300kHz	SWDR-11a281111

* Note: For customers that prefer to design their own driving circuit, they are responsible for the optical performance. For more technical information, please contact us.

Ordering Information

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1 2		2	2				
	Type	Wavelength [1]	Configuration	Package	Fiber Type	Fiber Length	Connector [2]	
NSSW = Low power switch NHSW = High power switch	1x 2=12	1060nm=1 L Band=2 1310nm=3 1410nm=4 1550nm=5 Special=0	Dual stage = 2	3-cap package = 2	SMF-28=1 HI1060=2 HI780=3 PM 1550/400=4 PM 1550/250=5 PM980=9 PM850=8 Special=0	Bare fiber=1 900um loose tube=3 Special=0	0.25m=1 0.5m=2 1.0 m=3 Special=0	None=1 FC/PC=2 FC/APC= 3 SC/PC=4 SC/APC=5 ST/PC=6 LC/PC=7 Duplex LC=8 LC/APC=9 Special=0

[1]. High power switch isn't available for the wavelength shorter than 960nm

[2]. There isn't any connector in high power switches. Please contact us for high power connectors.