

NanoSpeed™ 30dB Extinction 1x1, 1x2 Fiber Optical Switch



SMF, PMF, High Power, Bidirectional

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

DATASHEET



Applications

- Laser Systems
- Sensor Systems
- Instruments
- Quantum Systems

Features

- 30dB High on/off Ratio
- Solid State High Reliability
- High Speed
- Very Low Optical Loss
- High Optical Power Handling
- Minimal Transit Echoes
- Wide Operation Temperature Range
- Vibration Insensitive

The NSSS series of NanoSpeed™ fiber optic switches uniquely feature high on-off extinction of 30dB, low optical loss, fast response, and high optical power handling. This is achieved using compensating electro-optical control technology that significantly reduces drift. The NS fiber-optic switch meets the most demanding reliability requirements for undersea, space, and continuous switching with a longevity of over 25 years. The switch is bidirectional. The NS Series switch is mounted on a pre-tuned electronic driving PCB. Control is 5V TTL signal via an SMA port, and power is 12V DC (a wall pluggable is accompanied inside the shipping box).

Specifications

Parameter	Min	Typical	Max	Unit
Center Wavelength ^[1]	780		2300	nm
Insertion Loss ^[2] 1900 – 2300nm		1.5	1.8	dB
Insertion Loss ^[2] 1700 – 1900nm		1.2	1.7	
Insertion Loss ^[2] 1260 – 1650nm		0.8	1.1	
Insertion Loss ^[2] 960 – 1100nm		1.4	1.7	
Insertion Loss ^[2] 780 – 950nm		1.5	2	
On/Off Ratio, Cross Talk ^[3]	30		35	dB
Durability	10 ¹⁴			cycle
PDL (SMF)		0.15	0.3	dB
PMD (SMF)		0.1	0.3	ps
ER (PMF)	18	25		dB
Insertion Loss Temperature Dependence		0.25	0.5	dB
Return Loss	45	50	60	dB
Response Time (Rise or Fall)		50	100	ns
Optical Power Handling ^[4]		0.3	5	W
Repetition Rate ^[5]	DC		100	kHz
Operating Temperature	-10		50	°C
Storage Temperature	-40		80	°C
Power Consumption			2	W

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

[2] Measured without connectors. Each connector adds about 0.25dB loss

[3] Measured at 100kHz, which may be degraded at a higher repeat rate

[4] Def[4] Defined at 1310nm/1550nm. For the shorter wavelength, the handling power may be reduced.

[5] Currently, only DC-100 KHz is available. Higher frequency is under development

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MICROWAVE

Mechanical Dimension (mm)

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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MICROWAVE

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"/>
Prefix	Type	Wavelength ^[1]	Optical Power ^[2]	Configuration ^[3]	Max Frequency	Fiber Type	Fiber Cover	Fiber Length	Connector ^[3]
NSSS-	1x1 = 1 1x2 = 2	1060nm=1 L Band=2 1310nm=3 1410nm=4 1550nm=5 980nm=9 850nm=8 780nm=7 Special=0	Standard = 1 5W = 2 Special = 0	Transparent = 1 Opaque = 2	100kHz=1 Special=0	SMF-28=1 HI1060=2 HI780=3 PM1550=5 PM980=9 PM850=8 Special=0	Bare fiber=1 0.9mm 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 E2000 APC=A Special=0

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

[2]. Regular connectors cannot handle high power. Please contact us for Agiltron's unique high-power connectors.

[3]. Only 1x1 has the transparent and opaque selection, for 1x2 choose normal transparent.

Red color indicates special order

Typical Wavelength Response Curve (reference only)

