NanoSpeed™ Switch Driver
(Premium Series)

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

DATASHEET

BUY NOW

The NSDR series of drivers provide high voltage of signals to drive the NS and NP as well as NF series of solid state switches. The push-pull output design ensures fast transition for both rising and falling edges with the high repeat rate, and it is especially suitable for driving capacitive switch loads.

The dual-stage configuration increases the extinction ratio or cross-talk value.

The standard driver controls one individual switch. Drivers that control multiple switches also are available, please call Sales at (781) 935-1200.

Features

- High speed
- High repetition
- High output voltage
- Wide input voltage range
- TTL/CMOS control
- Push-Pull output design
- Low power consumption
- Compact and low cost

Applications

- Optical Switch
- EO device driver

Specifications

Parameter		Min	Typical	Max	Unit
Rising/Falling Time (Tr & Tf) [1]	NS type		85	100	ns
	NP type		50		ns
	NF type		10		ns
Switch Time (Rise, Sr) [2]			310	350	ns
Switch Time (Fall, Sf) [2]			310	350	ns
Durability		10^{14}			cycles
Control Input (TTL pulse)		0		5	V
Power Consumption [3]		1	5	15	W
Power Supply			12		V
Operating Temperature		-5		70	℃
Storage Temperature		-40		80	℃
Electrical Connector			SMA		

Note:

[1] Transition time between 10% and 90% chance of optical intensity.

[2] Duration from beginning of the electronic signal to the end of optical intensity change when driving the switch.

[3] The power consumption highly depends on the repeat rate. The maximum power consumption is defined for 1MHz operation.

Warning: Control Signal >5.5V Will Damage the Board

Warning: **This is an OEM module designed for system integration. Do not touch the PCB by hand. The electrical static can kill the chips even without a power plug-in. Unpleasant electrical shock may also be felt. For laboratory use, please buy a Turnkey system.**

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Rev 11/06/23

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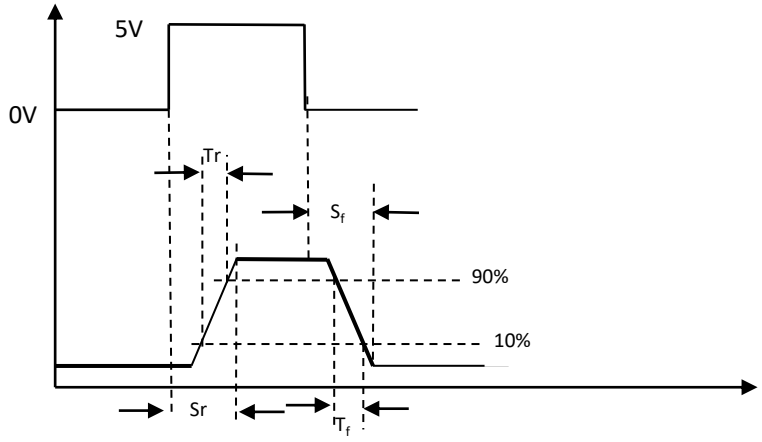
Response Time Definition



Response Time (Measured @ 500kHz)

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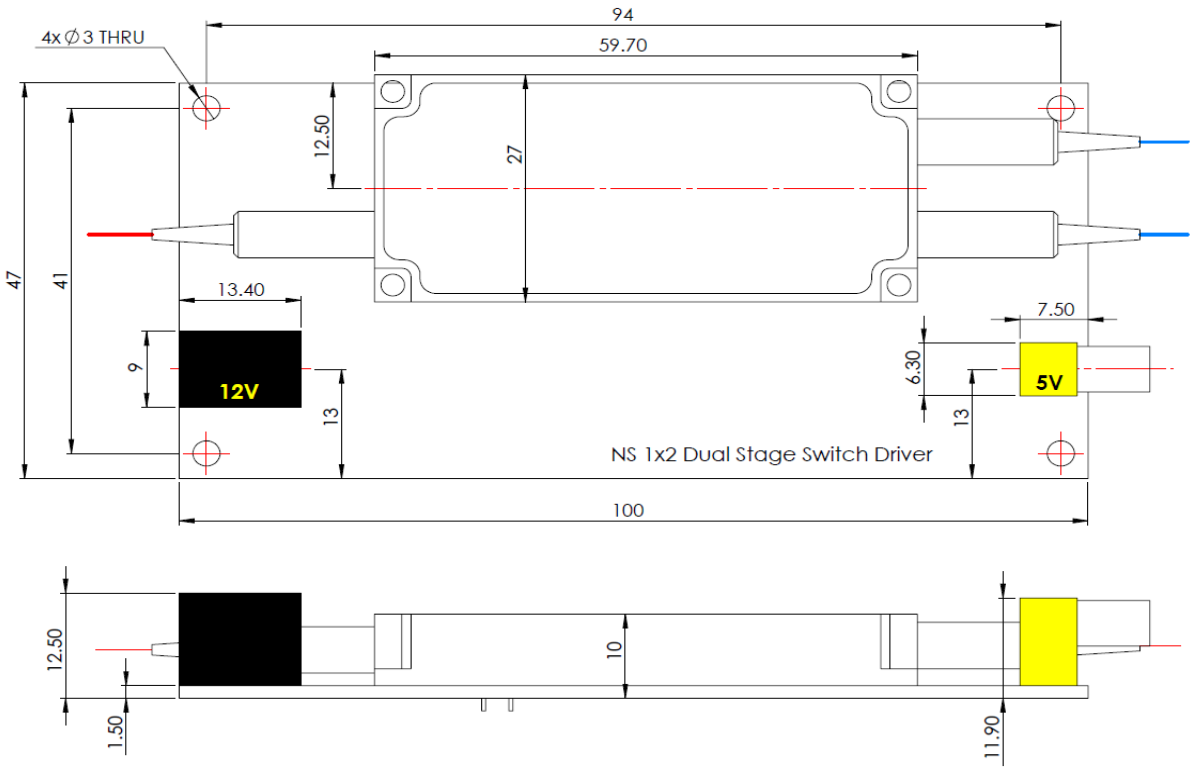
Mechanical Drawings for Dual Stage Premium NS 1x2



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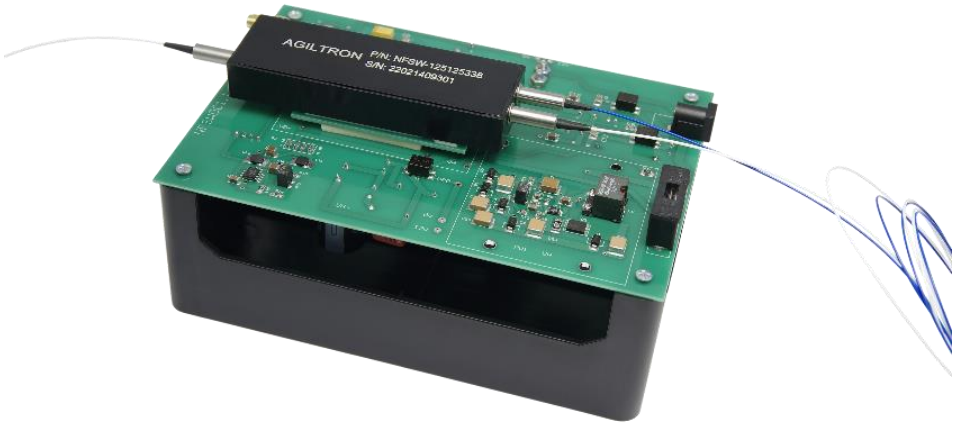
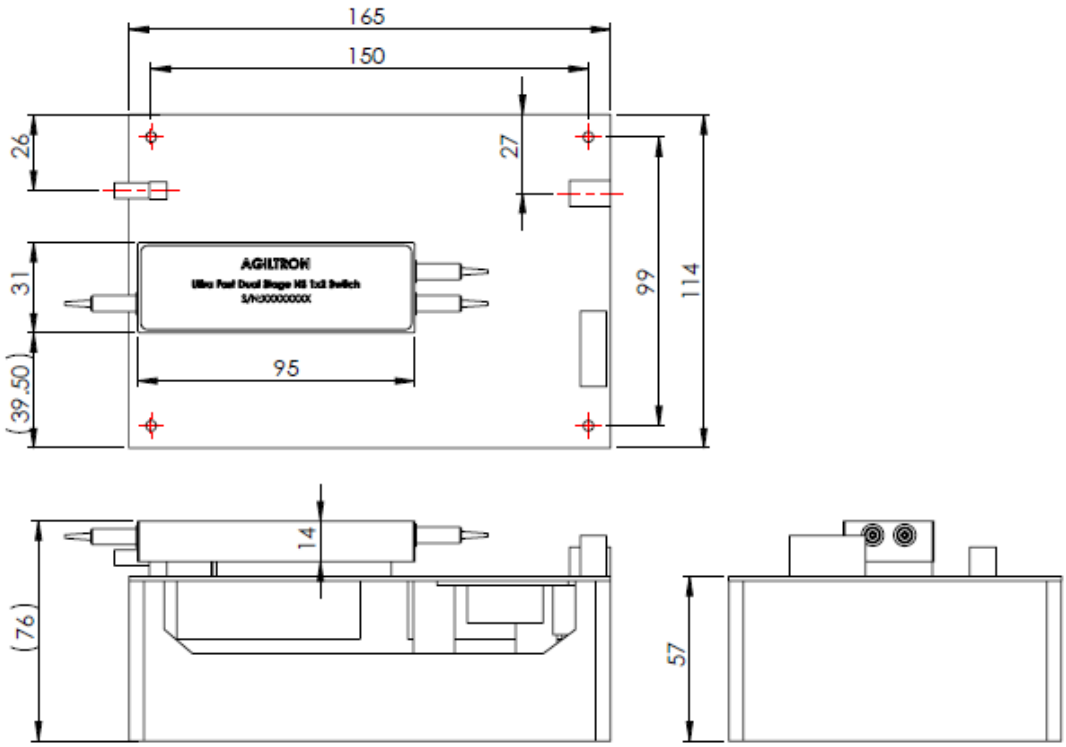
1x1/1x2,2x2 NP Type Switch Mounted on 1MHz Driver

It consumes about 10W at the fastest repetition operation





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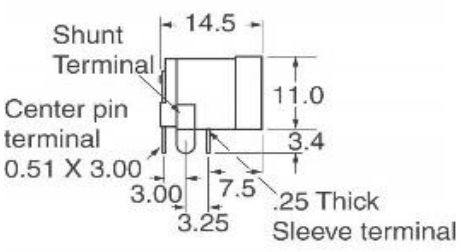
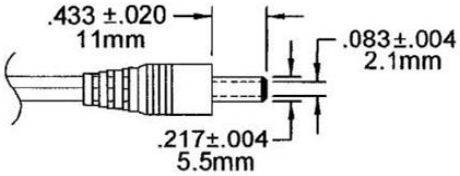
Power Connector

P/N: SC1313-ND
Power Barrel Connector Jack 2.00mm ID (0.079"), 5.50mm OD (0.217") Through Hole, Right Angle



12V Wall Plug DC Power Supply Interface



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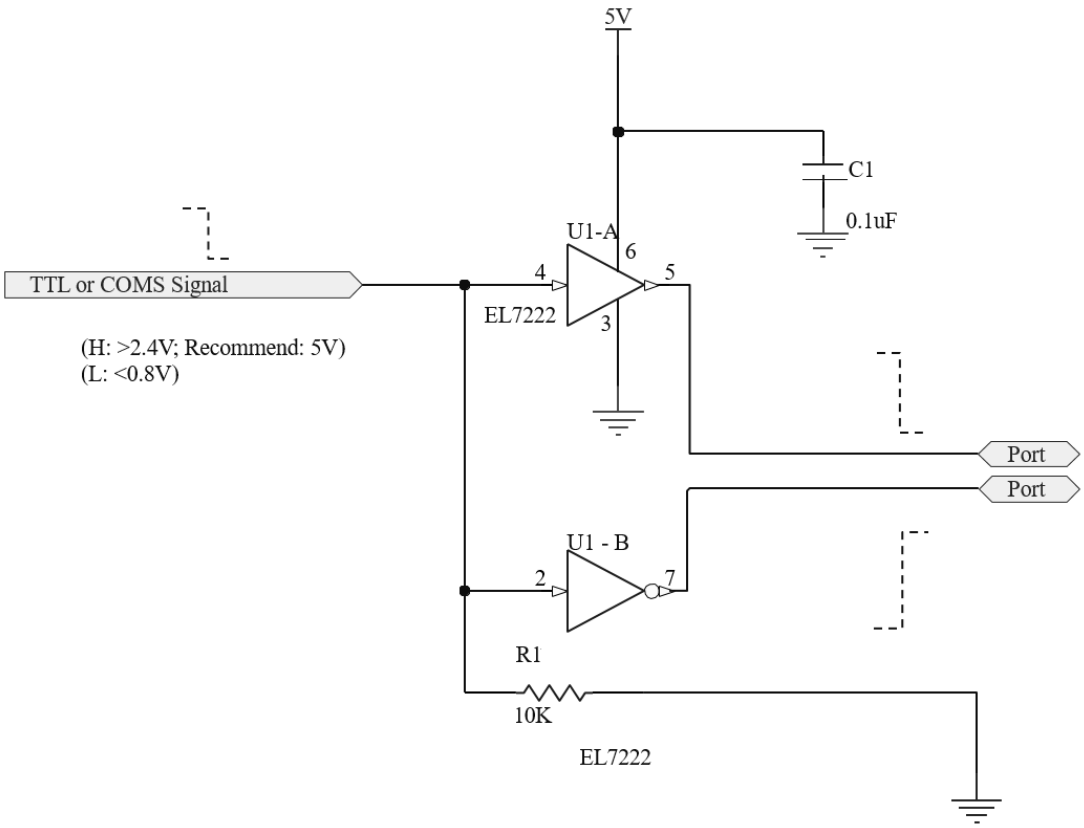
TTL Driver Interface (Our Circuit Diagram)



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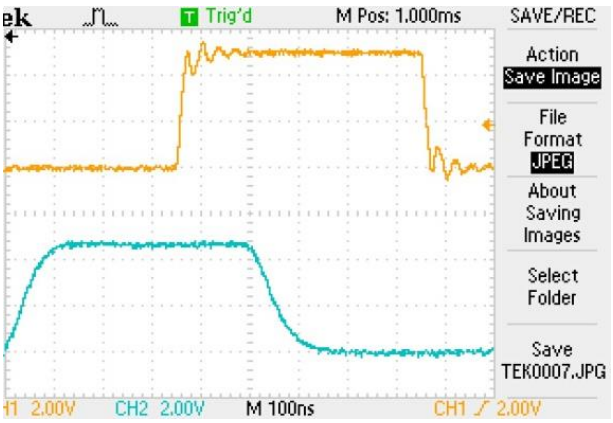
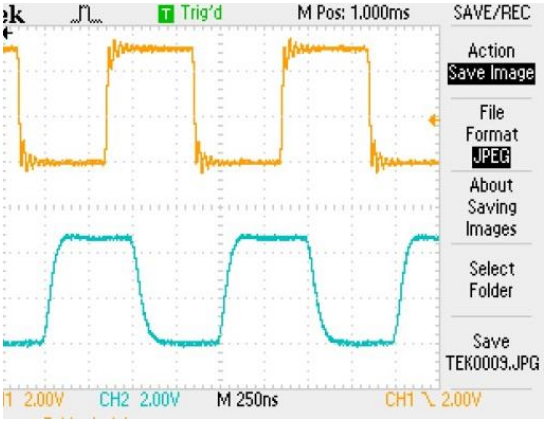
Typical Speed and Repetition Measurement

1MHz Response



1MHz Response



Note: Top Traces are electrical; Bottom traces are optical

Ordering Information

	☐☐	☐☐	☐	☐	☐	1	1
Prefix	**Switch Type**	**Configuration[1]**	**Repeat Rate**	**Switch QTY**	**Channel # [3]**	**Control Mode**	**Power Supply**
NSDR-	single stage = 1P dual stage [2] = 2P	1x1 = 1a 1x2, 2x1 = 2a 1x4, 4x1 = 4a ... 1xN, Nx1 = Na Special=00	200kHz = M 500kHz/50ns = P[3] 1MHz/50ns = H[3] 1MHz/10ns = F[3] Special = 0	Single = 1 Multiple = G	Single Channel = 1 N parallel channel = N Special = 0	TTL=1	12VDC =1 Special =0

[1]. Configuration Rule
1xN, Nx1 = Na
MxN = MN
[2]. Available for 1x1 only
[3]. Multiple-channel version is designed for the module with multiple switches of the individual channel on driving PCB

NOTE:
- ❑ This driver is intended mounted with specific switches, tuned, and tested prior to shipping. It is not designed to be sold separately.

Operation Manual

1. Connect a control signal to the SMA connector on the PCB.
2. Attach the accompanied power supply (typically a wall-pluggable unit).
3. The device should then function properly.

Note: Do not alter device factory settings.

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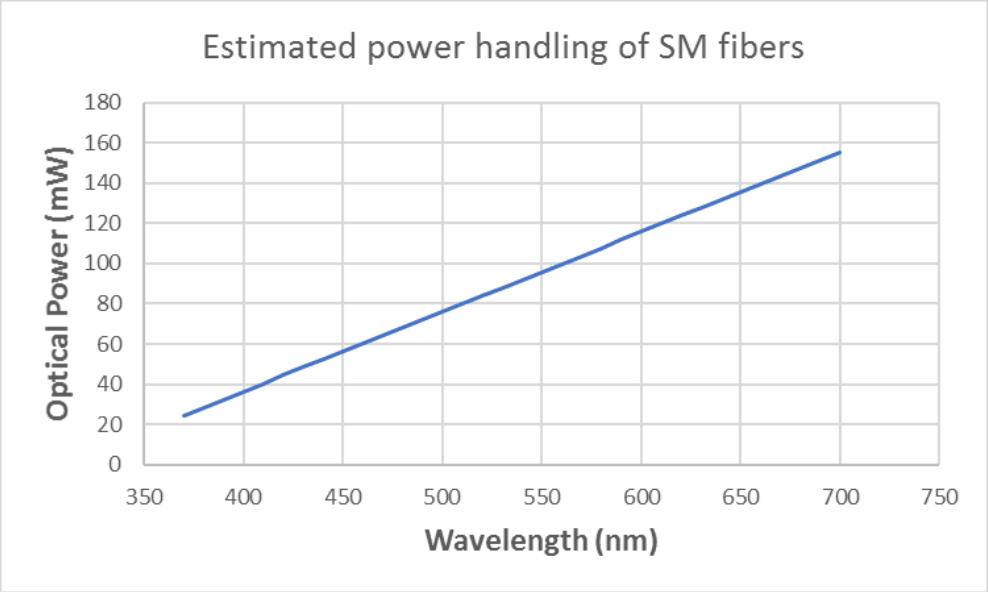
Optical Power Handling vs Wavelength For Single-Mode Fibers



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