

NanoSpeed™ Switch Driver (Premium Series)

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

DATASHEET



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 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	°C
Storage Temperature	-40		80	°C
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

Legal notices: All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

Rev 06/13/23

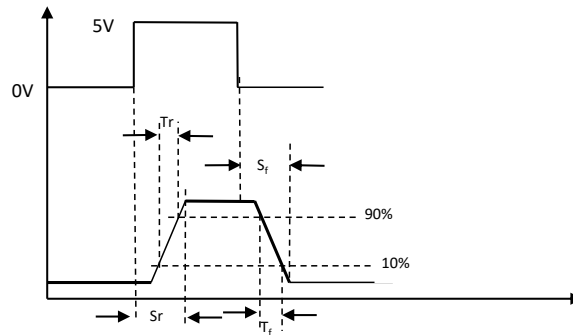
© Photonwares Corporation

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

NanoSpeed™ Switch Driver (Premium Series)

DATASHEET

Response Time Definition



Response Time (Measured @ 500kHz)

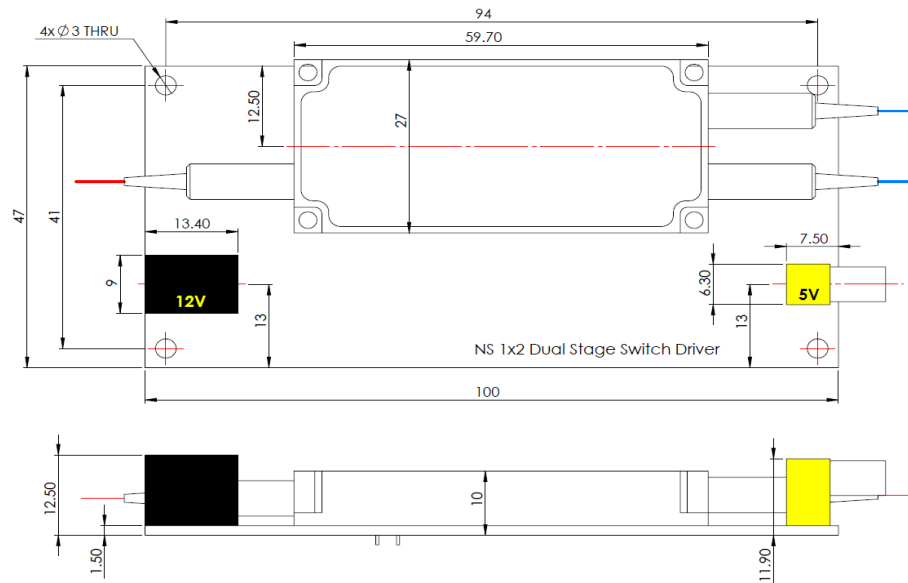
© Photonwares Corporation

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

NanoSpeed™ Switch Driver (Premium Series)

DATASHEET

Mechanical Drawings for Dual Stage Premium NS 1x2



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

© Photonwares Corporation

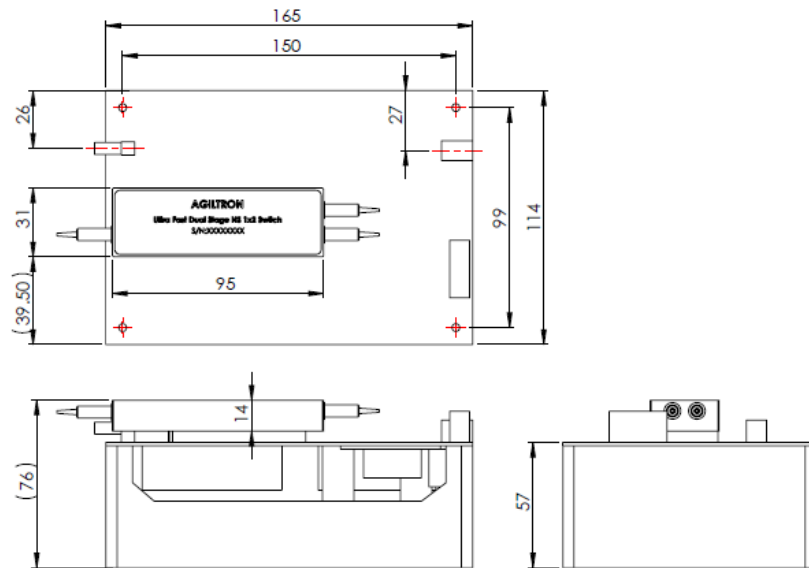
Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

NanoSpeed™ Switch Driver (Premium Series)

DATASHEET

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

It consumes about 10W at the fastest repetition operation



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

© Photonwares Corporation

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

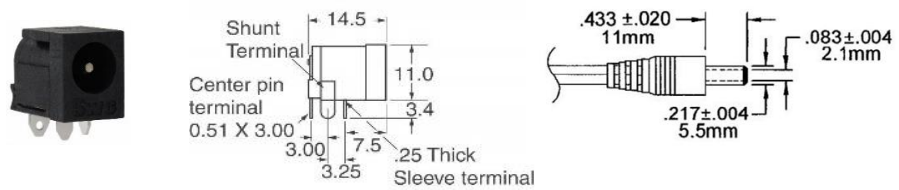
NanoSpeed™ Switch Driver (Premium Series)

DATASHEET

Power Connector

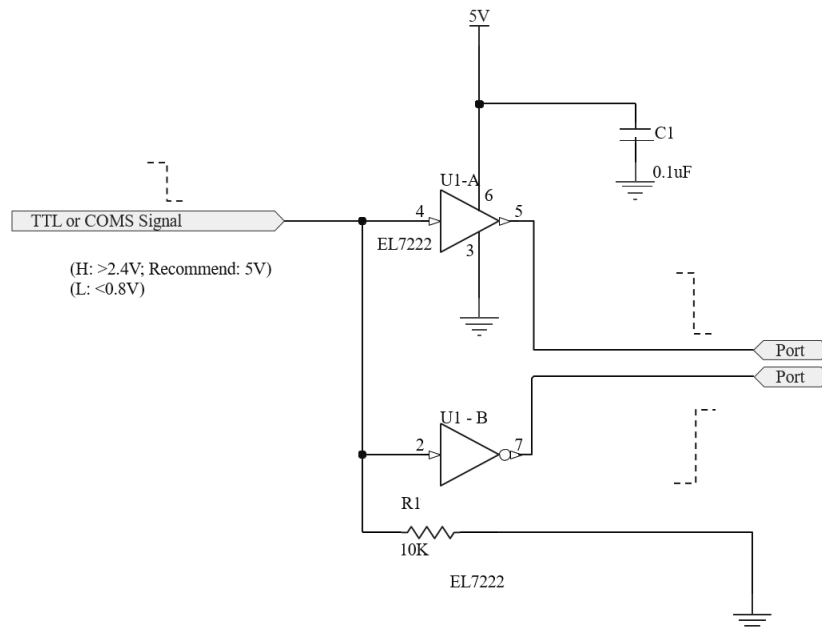
P/N: SC1313-ND
Power Barrel Connector Jack 2.00mm ID (0.079"),
5.50mm OD (0.217") Through Hole, Right Angle

12V Wall Plug DC Power Supply Interface



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

TTL Driver Interface (Our Circuit Diagram)



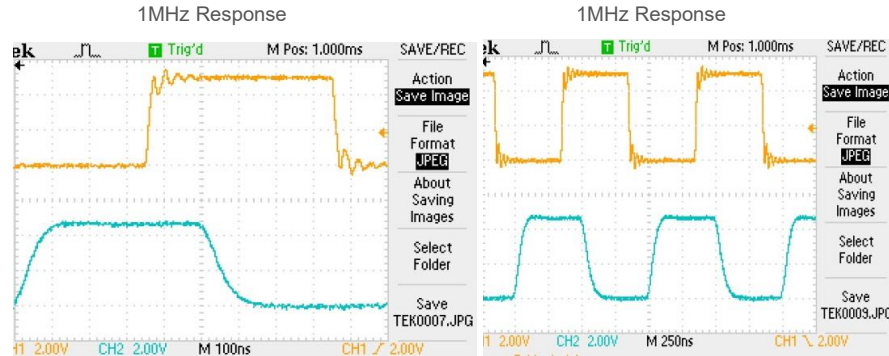
© Photonwares Corporation

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

NanoSpeed™ Switch Driver (Premium Series)

DATASHEET

Typical Speed and Repetition Measurement



Note: Top Traces are electrical; Bottom traces are optical

Ordering Information

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.

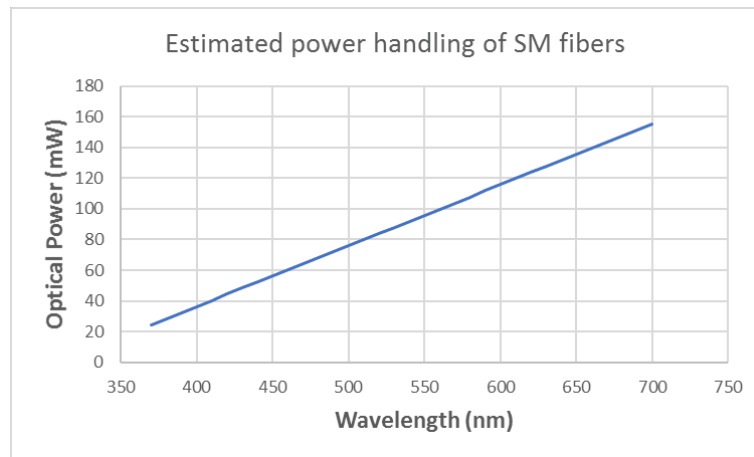
© Photonwares Corporation

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.

NanoSpeed™ Switch Driver (Premium Series)

DATASHEET

Optical Power Handling vs Wavelength For Single-Mode Fibers



© Photonwares Corporation

Information contained herein is deemed to be reliable and accurate as of the issue date. Photonwares reserves the right to change the design or specifications at any time without notice. Agiltron is a registered trademark of Photonwares Corporation in the U.S. and other countries.