

# 500 kHz Repetition Rate NanoSpeed™ Switch Driver

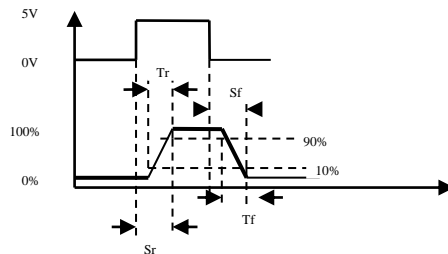
(Protected by U.S. patent 7,403,677B1 and pending patents)

## Product Description

The NS switch driver provides a convenient way to use the NS series electro-optical switches, which act as a pure capacitive load. Each driver is tuned to a specific device mounted on the PCB. To operate, the customer only needs to plug in the accompanying DC power supply and input a control signal through the golden SMA connector. The switch will be activated as the input voltage exceeds 3V with less than 1µA draw, compatible with 3.3V CMOS/TTL. We produce boards to control multiple NS switches with individual SMA connectors. No computer-based control software is available for such a high-speed operation.

## 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



## Performance Specifications

Specs	Min	Typical	Max	Unit
Rise Time (Tr) <sup>[1]</sup>		85	100	ns
Fall Time (Tf) <sup>[2]</sup>		85	100	ns
Switch Speed (Rise) (Sr) <sup>[3]</sup>		315	350	ns
Switch Speed (Fall) (Sf) <sup>[4]</sup>		315	350	ns
Repetition Rate	DC		500	kHz
Pulse Width	1.0			us
Control Input (TTL pulse)	0		5	V
Power Consumption			12	W
Power Current	0.08		1.0	A
Power Supply		12		V
Operating Temperature	-5		70	°C
Storage Temperature	-40		80	°C
Electrical Connector	SMA			
Board Size	3(L)x2.5(W)x1.5(H)			Inch

Note:

[1]: Optic Intensity Change from 10% to 90% intuit;

[2]: Optic Intensity Change from 90% to 10% intuit;

[3]: Switch Speed (Rise): Duration from begin of electronic signal to end of optic intensity change;

[4]: Switch Speed (Fall): Duration from begin of electronic signal to end of optic intensity change.

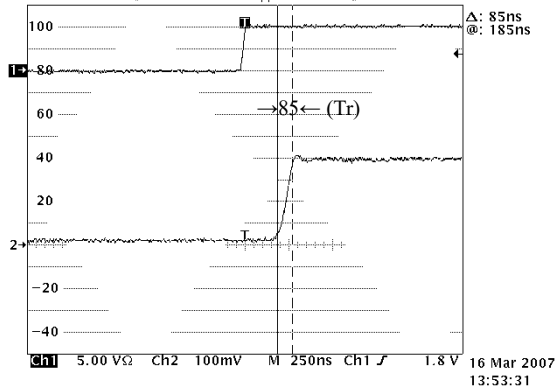
## Applications

- Optical Switch
- EO device driver

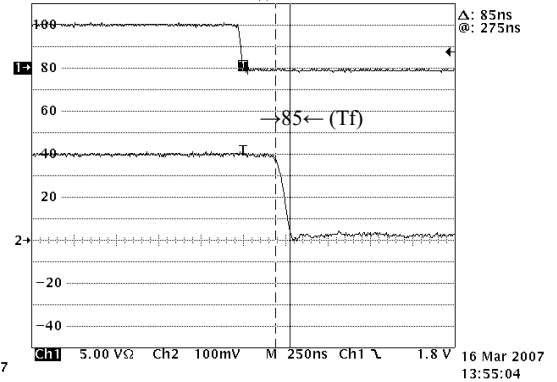
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## Response Measurement

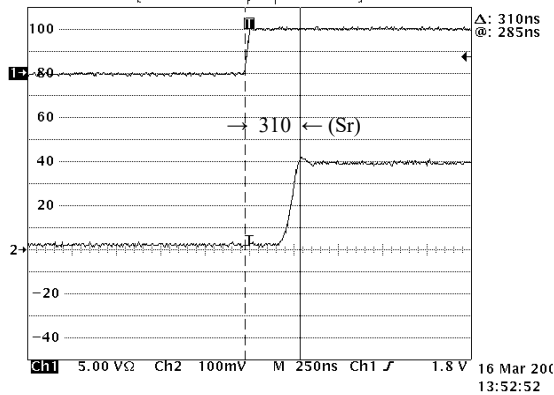
Tek Run: 200MS/s ET Sample



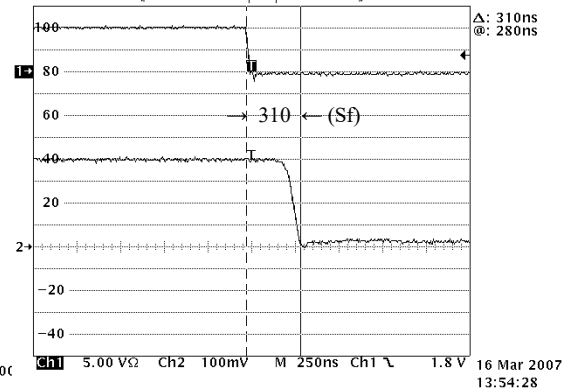
Tek Run: 200MS/s ET Sample



Tek Run: 200MS/s ET Sample



Tek Run: 200MS/s ET Sample



## Ordering Information

SWDR-	1	<input type="checkbox"/> <input type="checkbox"/>	2	9	1	1	1	<input type="checkbox"/>
	Switch Type	Function	Latching or not	Repeat rate [1]	Footprint	# of Switch	Control Mode	DC supply
	NS Switch =1	1x1, 1x2, 2x1, 2x2 switches = 1a 1x4, 4x1 switches = 4a Special=00	Non-latching =2	500kHz = 9	Standard = 1	1 switch=1 2 switches=2 3 switches=3 N switches=N Special=0	TTL=1	12VDC =1 5VDC [2] =2 Special =0

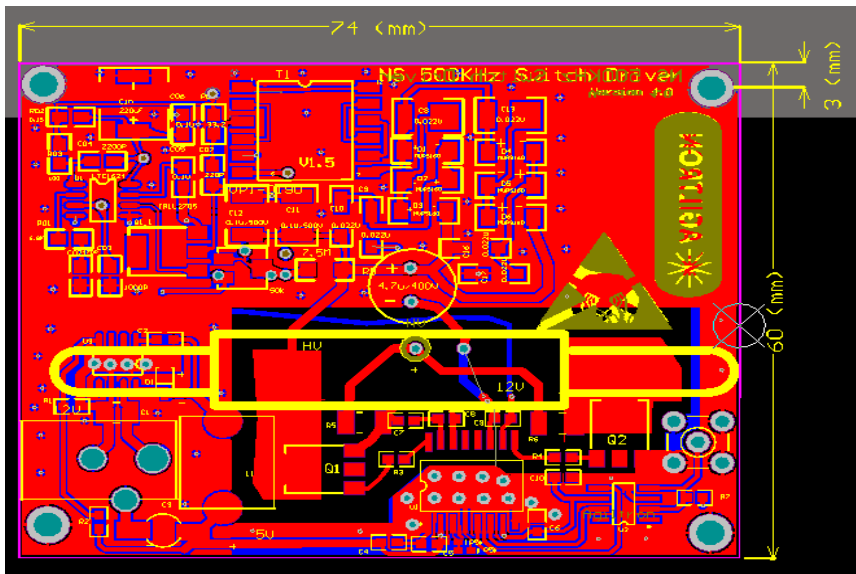
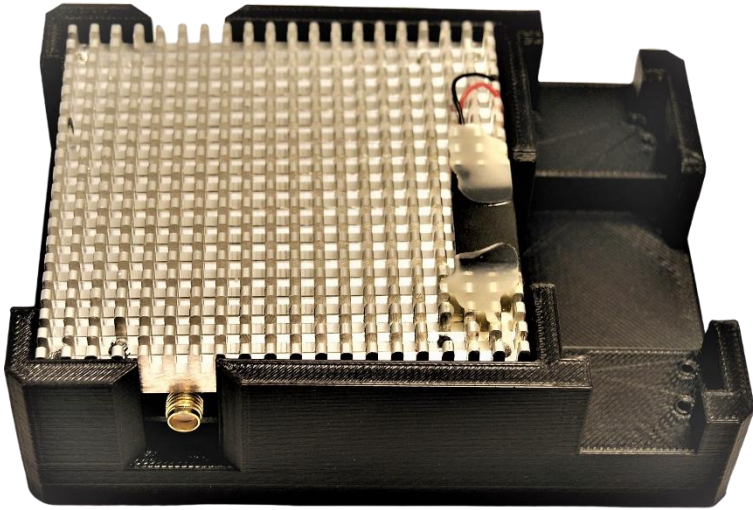
[1]: The repeat rate is defined for TTL control interface only.

[2]: 5V DC supply may not be available for certain switch. Please have a consultant with sale's manager.

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

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## Dimension (mm)



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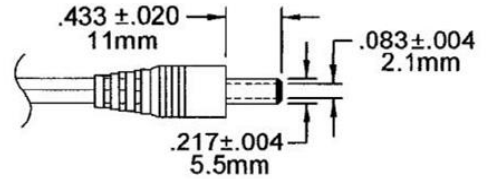
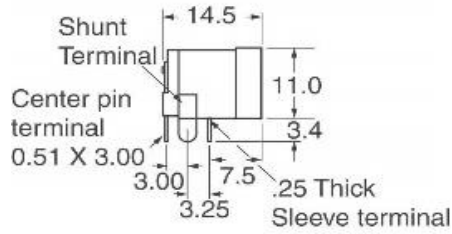
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## Power Connector

P/N: SC1313-ND

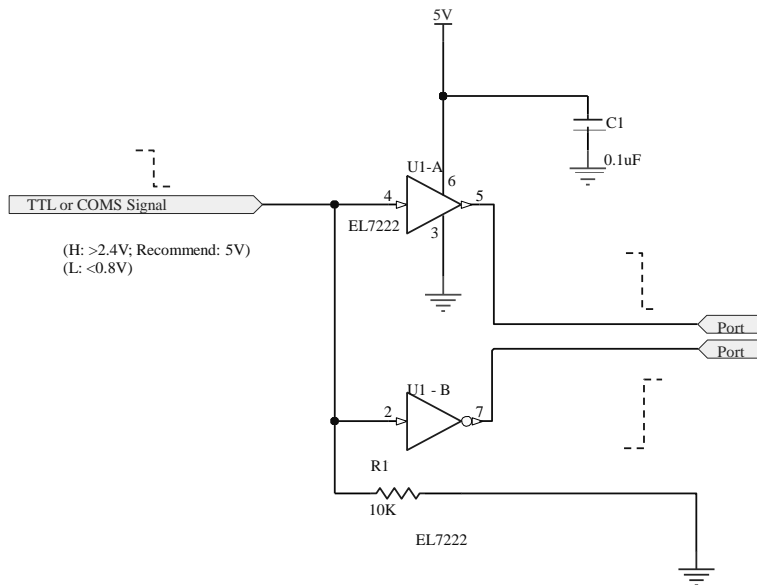
Power Barrel Connector Jack 2.00mm ID (0.079"),  
5.50mm OD (0.217") Through Hole, Right Angle

12V Wall Plug DC Power Supply Interface



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## TTL Driver Interface (Our Circuit Diagram)



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## Typical Operation Instructions

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.