

DC-20kHz Driver for NanoSpeed™ VOA

(patents pending)



DATASHEET

[Return to the Webpage](#)



Features

- High Speed
- High Output Voltage
- Wide Input Voltage Range
- TTL/CMOS/Other Control
- Push-Pull Output Design
- Low Power Consumption

Applications

- Optical VOA
- Optical Switch
- Optical Modulator

The NS VOA Driver provides driving signals for the NS series solid state VOAs. The push-pull output design ensures fast switching time for both rising and falling edges, and it is especially suitable for driving capacitive VOA loads.

The standard driver controls one individual VOA. Drivers that control multiple VOAs also are available, please call Sales at (781) 935-1200 for more information.

Specifications

Parameter	Min	Typical	Max	Unit
Rising Speed (Sr) ^[1]	450	600	750	ns
Falling Speed (Sf) ^[2]	450	600	750	ns
Repetition Rate	DC		20	kHz
Pulse Width ^[3]	1.0			us
Input Control Voltage ^[4]	0	4.5	5	V
Power Consumption ^[5]			1.3	W
Power Supply	5		12	V
Operating Temperature	-5		70	°C
Storage Temperature	-40		80	°C
Electrical Connector	SMA			

Notes:

- [1]: Duration from begin of electronic signal to end of optic intensity change
[2]: Duration from begin of electronic signal to end of optic intensity change
[3]: Pulse working mode
[4]: For full attenuation. Low voltage version is available, see the order information.
[5]: Dependent on repetition frequency, measured at 20kHz

Warning: The device mounted on the PCB is an OEM module designed for system integration only, not for general uses. Do not touch the PCB by hand. The electrical static can kill the chips even without a power plug-in, and unpleasant electrical shock may also be felt. For laboratory use, please buy a protected Turnkey system.

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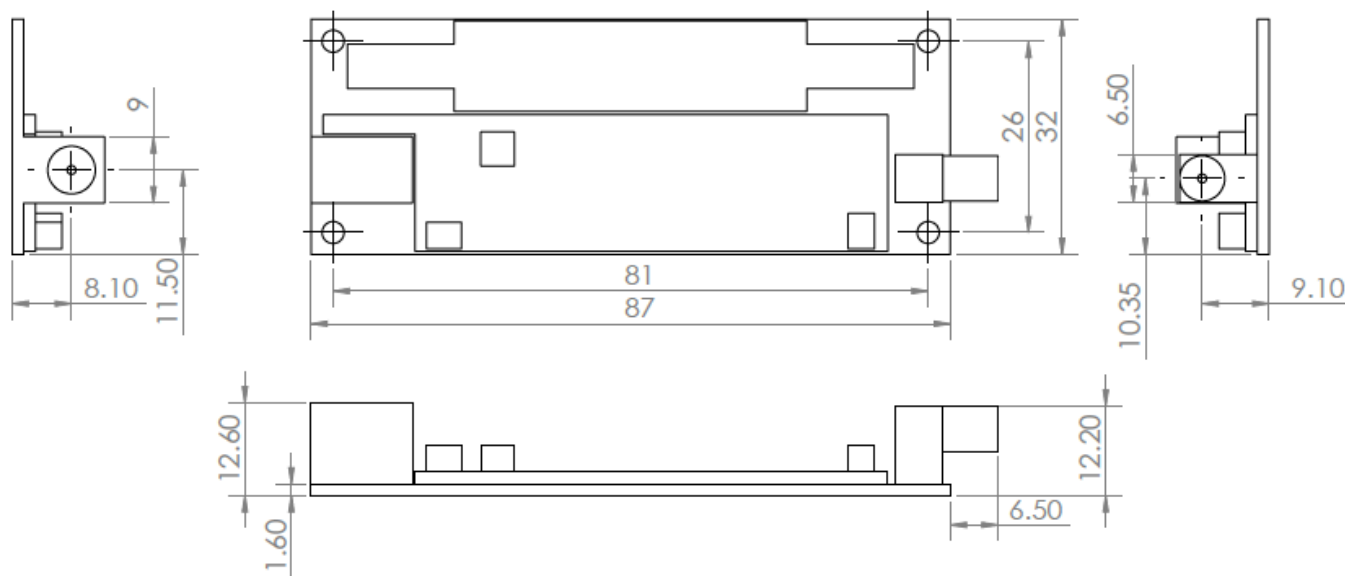
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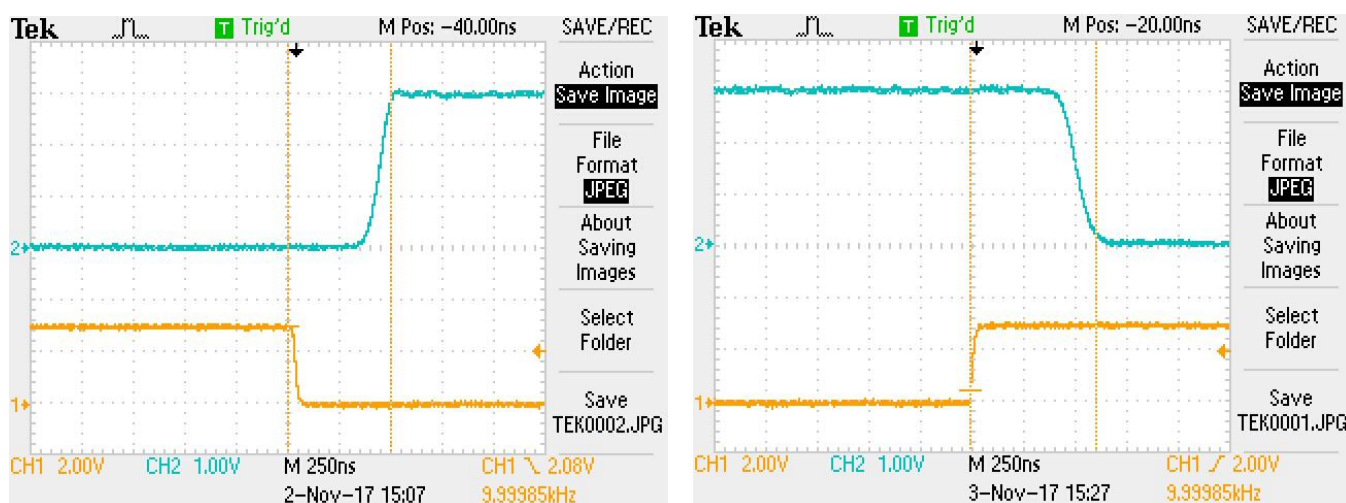
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Mechanical Dimensions (mm)



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

Electric-Optic Switching Response



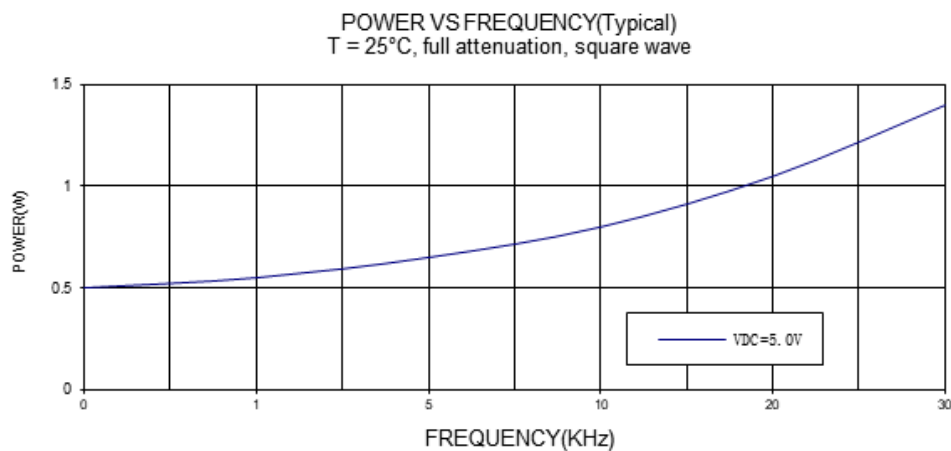
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Power Consumption



Ordering Information (Part Number)

	1 1	3	2	☐	☐	☐ ☐	☐
Prefix	Type	Repetition	Size	Input control voltage		# of VOA	Connector ^[1]
NVDR-		DC-20kHz = 3 Special = 0	3.5"x1.25" = 3 Special = 0	3.3V version = 3 5.0V version = 5		Single VOA = 11 Special = 00	SMA = 2 Special = 0

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

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DATASHEET

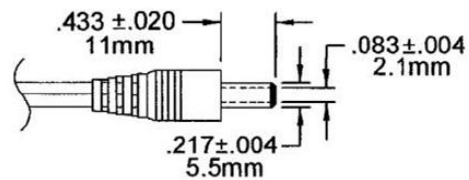
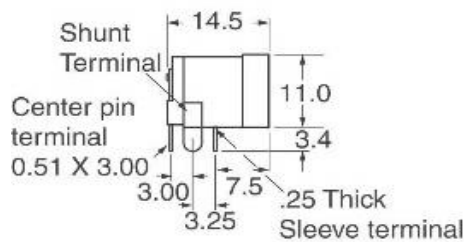
DC Power Connection

Variation 1

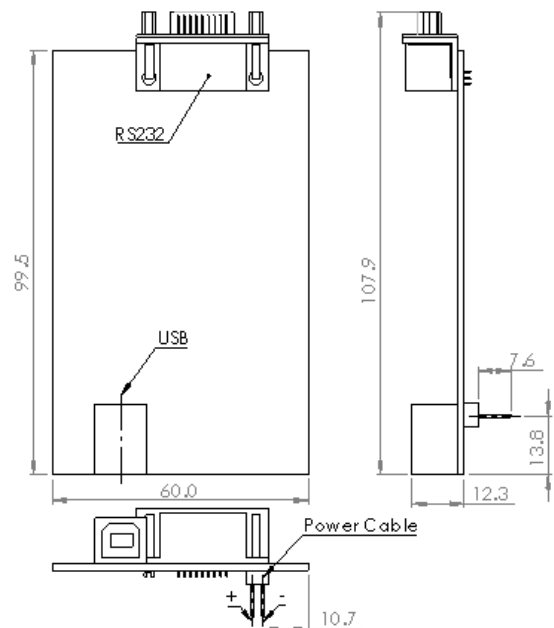
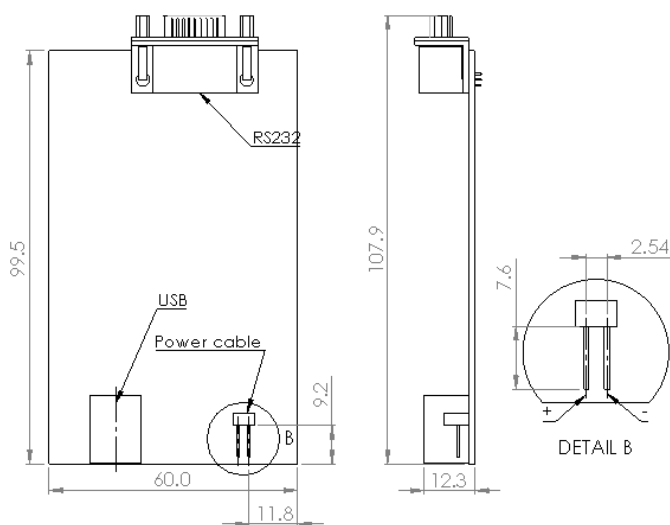
P/N: SC1313-ND

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



Variation 2



Connector Type

DC jack P/N: PJ-002AH (MFR: CUI devices)
SMA P/N: 5-1814400-1 (MFR: TE connectivity)

Note: The DC Power Barrel Jack Connector can be replaced with a two-pin connector, available in two configurations: one with pins facing downward for direct PCB mounting and another for connection with a standard cable connector. This flexibility allows for integration into various system designs.

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DATASHEET

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.