



**SHORT-PULSE LASER DIODE DRIVER  
WITH USER DESIGNED PULSE SHAPES**

500 picosecond to 8  $\mu$ s pulse width range;  
full control of pulse shape by on-board AWG



**CCS-PULSE-SHAPER**

User Designed Pulse Shapes; On-Board  
Arbitrary Waveform Generator (AWG)  
for User Customizable Pulse Shapes

Pulse Width Range: 500 Picoseconds to  
8  $\mu$ sec

0 to 1.6 Amp Pulsed Output Current,  
0 to 20 MHz Repetition Rate

Includes Laser Diode "Gain-Switch Peak"  
Suppression Mode

Integrated Pre-Configured Butterfly  
Mounting Socket and Integrated TEC  
Controller

Built-in Pulse AWG, Internal or External  
Triggering

**WORLD LEADING PRODUCTS  
FOR LASER SCIENTISTS AND ENGINEERS**



## SPECIFICATIONS

### INTERNALLY GENERATED PULSES

#### PULSED CURRENT AND PULSE SHAPING SPECIFICATIONS

- Peak Current Range: 0 Amps - 1.6 Amps
- User Adjustable Pulse Width Range: 500 psec ~ 8  $\mu$ sec
- Repetition Rate Range: 0 ~ 20 MHz
- Pulse Shaping Timing Resolution (max): 500 psec
- Pulse Shaping Current Resolution: 30  $\mu$ A
- Laser Diode Compliance Voltage Maximum: 4.8 Volts
- Current Set-Point Resolution: 16 bit ADC

### EXTERNALLY GENERATED PULSES

#### AOM / EOM PULSED CURRENT AND PULSE SHAPING SPECIFICATIONS

- External Pulse Peak Acceptable Current Range: 0 - 3.5 Amps
- AOM / EOM Acceptable Pulse Width Range: 1 nsec - CW
- AOM / EOM Pulse Shaping Timing Resolution: < 500 psec
- Output Voltage (Factory Configured): 1 Volt (50 Ohm) / 5 V (High-Z)
- External Pulse Timing Resolution (Delay/Pulse-Width): < 1 nsec

### ELECTRICAL SYNCHRONIZATION

#### PULSE DELAY GENERATOR OUTPUTS

- Number of Outputs: 3
- Synchronization Signals Duration: 0 -  $10^9$  nsec
- Synchronization Signals Resolution: 1 nsec
- Output Voltage: 0 - 3.3 Volts (50 Ohm)

### TEMPERATURE CONTROLLER & BUTTERFLY MOUNT

- TEC Current Range: +/- 1.5 Amps
- TEC Voltage Range: 3.8 Volts
- TEC Controller Compatible with NTC Thermistor Sensors
- Zero Insertion Force Mounting Socket for 14-Pin Butterfly Packages
- Standard Product Configured to Type 1 Package Pin Configuration (Type 2 Available on Request)

### USER INTERFACE

- USB with Control Software GUI
- DLL Library for C programming and Hexadecimal Protocol
- Analog (0-3.3V) Remote Signal Peak Power Adjustment
- UART

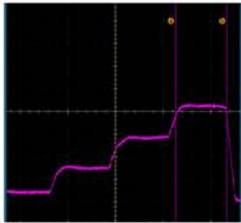
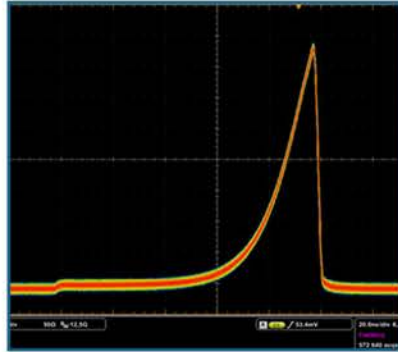
### POWER SUPPLY AND DIMENSIONS

- Power Supply Included
- 162 mm (L) x 92 mm (W) x 20 mm (H)



### USER DESIGNED PULSE SHAPES

example of a user designed pulse shape in a MOPA fiber laser seeder application

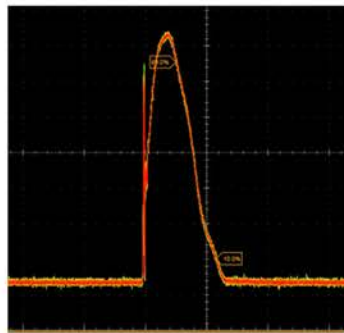


example of a 400mA, 100 nanosecond step pulse shape

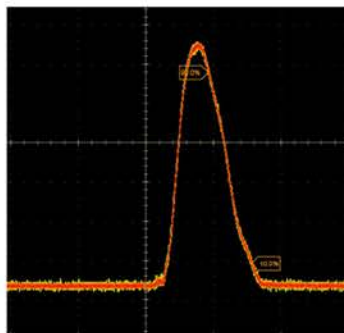
User designed shapes to customize pulse shapes for your application

### GAIN SWITCH PEAK SUPPRESSION FUNCTION

1.5 nanosecond pulse with typical gain switch peak on leading edge of the pulse



1.5 nanosecond pulse after activating the "gain-switch peak suppression" function



Gain Switch Peak Suppression Function Activated

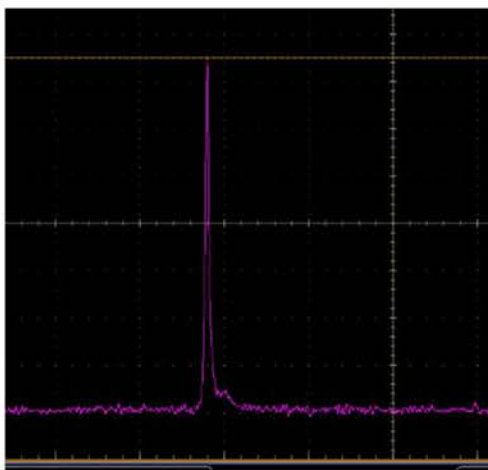


User has full control over the pulse shape through the control software and GUI

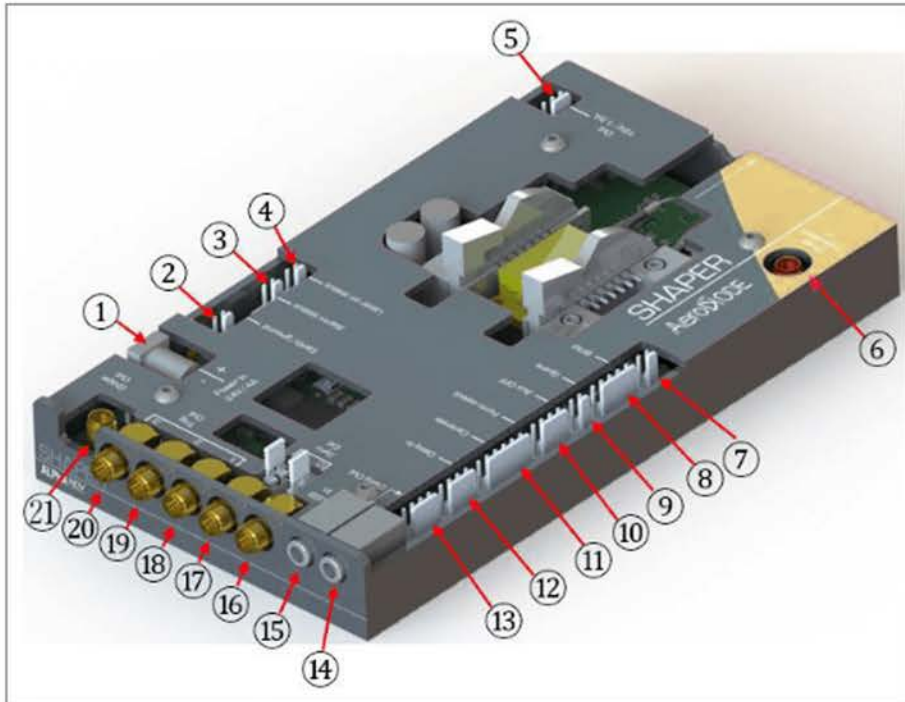
Complete Control of the Pulse Shape through GUI Software or a .CSV Import File

**80 PICOSECOND GAIN-SWITCH PULSE**

\*gain-switch performance is highly dependent on the laser diode



Isolated Gain-Switch Peak from a DFB Laser Diode



Type	N°	Name	Description
Power and Communication Connectors	①	Power In	Power Connector (24V/4A) – included
	⑫	Daisy In	Input Molex Communication Connector
	⑬	Daisy Out	Output Molex Communication Connector
	⑭	Daisy Out	Output Jack Communication Connector
	⑮	USB In	Input Jack Communication Connector
SMA Output and Input Connectors	⑯	Sync Ext 0	External Synchronization Input Signal 0
	⑰	Sync Ext 1	External Synchronization Input Signal 1
	⑱	Trig Out 1	Synchronization Output Signal 1
	⑲	Trig Out 2	Synchronization Output Signal 2
	⑳	Trig Out 3	Synchronization Output Signal 3
	㉑	Shape Out	Analog Output Signal
Molex Connectors	⑥	Modulation In	Diode Analog Modulation Input Signal
	②	Earth/ground	Earth/Ground Connection
	④	Laser On	Laser On External 24V LED Connector
	③	Alarm status	Alarm Status External 24V LED Connector
	⑤	Out 18V/1.5A	Adjustable voltage Symmetrical Power-Supply
	⑦	BFM	Laser Diode Back Facet Monitor Connector
	⑧	Spare	Spare Connectors ( <i>Factory use only</i> )
	⑨	Aux OFF	External Board Shutdown Connector
	⑩	Form select/ Scan Duration	Analog Shape Choice and Scan Duration Connector
	⑪	Spare	Spare Connectors ( <i>Factory use only</i> )



**PRODUCT SALES AND SERVICE:**

Orders for this product are fulfilled by Laser Lab Source in North America and select international regions. It is manufactured by Aerodiode, Talence, France.

**PRODUCT WARRANTY:**

This product is sold with a full one year warranty. It is warranted to be free from defects in material and/or workmanship for a period of one year from the date of shipment.



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