

ANALOG MODULES, INC.

MODEL 7701A

HIGH POWER OEM LASER DIODE DRIVER

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- **OUTPUT CURRENT TO 300 AMPS PULSED OR 50 AMPS CW**
- IDEAL FOR HIGH POWER LASER DIODES
- **DIODE LOAD VOLTAGES UP TO 280VDC**
- WIDE PULSEWIDTH TO 10ms
- INTERNAL HEATSINK AND FAN
- FLOATING OUTPUT



DESCRIPTION:

The **Model 7701A** Laser Diode Driver is designed to power high current laser diodes and arrays for applications such as illumination and diode-pumped solid-state (DPSS) lasers. High power FET technology is employed and a DB-25 interface connector provides for external control of functions such as enable and pulse input, current control and monitor, CW or pulsed mode select and others. The Model 7701A provides a floating output, which is capable of driving grounded anode or grounded cathode emitters. The rugged, compact chassis and internal fan and heatsink make the Model 7701A an excellent OEM choice for driving high power DPSS lasers.

SPECIFICATIONS:

Input

DC Voltage for Laser Drive (300V Max.), plus Voltage 115VAC±10%, 1φ, 50 to 60Hz (Add -C to part

number.)

198 to 253VAC, 1φ, 50 to 60Hz (Add -D to

part number.)

Output

5 to 50A CW or 10 to 100A pulsed (-1) Current

5 to 50A CW or 10 to 200A pulsed (-2)

5 to 50A CW or 10 to 300A pulsed (-3)

Risetime ≤10µs at peak output current Falltime ≤10µs at peak output current Pulse Flatness

±2% of peak output current Pulse Overshoot ≤5% of peak output current 2.5V to 280VDC, depending on laser drive Diode Load

Voltage supply voltage.

Current Monitor Max output current = 10VDC into ≥10k Ω

Load Volt. Mon. 30V/V Scale

Diff. Volt. Mon. 10V = 20V across driver; zero droop; 100μs

Fast reverse polarity diode / Adj. current limit Protection

for CW and pulsed mode / PRF & PW limit / Thermal shutdown / Crowbar circuit/ Open

circuit

0° to 40° C **Temperature**

Specifications subject to change without notice.

Internal Controls Peak Current Limit

10 to 100A (-1), 200A (-2), or 300A (-3)

min., trimpot adj.

CW Current Limit 5 to 50 Amps min., trimpot adj.

External Controls

Current Control 0 to 10V = 0 to max. current**Current Monitor** 0 to 10V = 0 to max. current Enable/Pulse I/P Opto-Isolated input 5V at 10mA Mode Select

Crow Bar Activate +5V to +15V Input

Pulsewidth $100 \mu s$ to 10ms typical.; external caps required for high current & wide PW

PRF 1Hz to 1kHz

Connections

25 Pin D-connector Ext. Controls

Output Low inductance connector with 1 meter

flat conductor output cable

AC Power Terminal Block DC Power via #8 Buss bar holes

11.67"L x 5.18"W x 5.94"H Size

Weight 4.53ka

APPLICATIONS:

CW and Pulsed High Power Laser Diode Current Source



MODEL NUMBER

	7701A-1	7701A-2	7701A-3
Maximum Peak Output Current	100A	200A	300A
Maximum CW Output Current	50A	50A	50A

Typical Part Number: 7701A-2-C = Output Current: 10 to 200 Amps peak pulsed or 5 to 50 Amps CW

Diode Load Voltage: 2.5 to 280VDC

Input Connector: 25 Pin Female D-connector

Current Control Input/Monitor Output: 50mV/A (20A/V)

DC Input Voltage: Diode load voltage plus headroom* AC Power: 115VAC±10%, 16, 50 to 60Hz

PRF Range: 1Hz to 1kHz

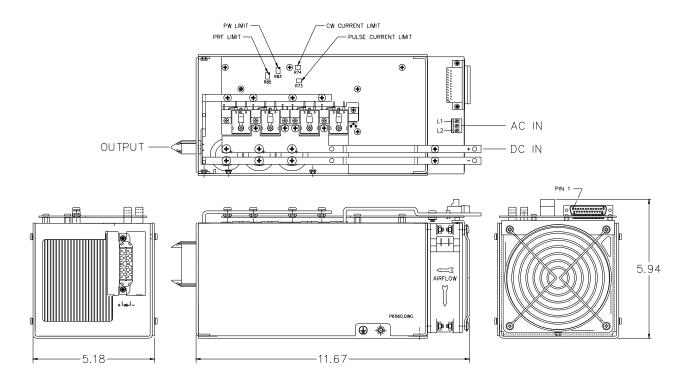
Provide maximum values for laser diode voltage, peak current, pulse repetition frequency (PRF) and pulsewidth at or before time of order so AMI can verify the operating point is within the safe operating range of the Model 7701A.

*Headroom: Voltage required across the driver to keep current regulation.

25 Pin D-Connector Interface Description				
1	ENABLE IN HIGH	14	CROWBAR ACTIVATE	
2	GND	15	NC	
3	CURENTMONITOR OUT	16	CROWBAR OUT	
4	GND	17	NC	
5	PULSE IN HIGH	18	NC	
6	GND	19	MODE IN LOW	
7	CURRENT CONTROL IN	20	DIFF. VOLTAGE OUT	
8	GND	21	NC	
9	PULSE IN LOW	22	NO LOAD SIGNAL	
10	GND	23	NC	
11	NC	24	GND	
12	VOLTAGE MONITOR OUT	25	NC	
13	NC			

Consult Factory for 7701A Standard Interface Description

Crowbar output (Pin 16) must be connected to INHIBIT of power supply to prevent driver damage when Crowbar is engaged.



Dimensions in inches