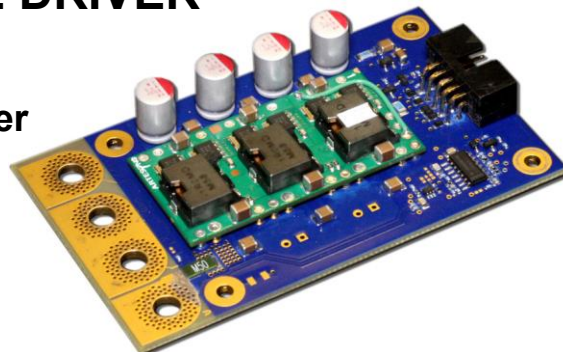


STACKABLE CW & PULSED LASER DIODE DRIVER

- Output Current up to 50 A per Unit
- Stack Multiple Drivers for 200 A OR Higher
- Compliance Voltage up to 5 V
- Low Output Ripple
- High Efficiency up to 96%
- RoHS Compliant



DESCRIPTION:

AMI's Model 787 OEM laser diode driver is a highly efficient, current regulated, low ripple tri-phase laser diode driver designed to power pulsed and CW high current laser diode stacks. Proprietary technology allows AMI to offer a 50 A, 5.0 V driver with industry leading efficiency and footprint. Multiple drivers can be stacked together to achieve output currents of 200 A or higher. The driver includes open circuit, short circuit, over-temperature and under voltage lockout protection.

SPECIFICATIONS:



U.S. Patent No. 7,348,948

	787			
PARAMETER	Min.	Typical	Max.	Units
INPUT				
Power	+11.0	+12.0	+13.0	VDC
Current (load dependent, single driver)	0.1	-	24.0	A
Quiescent Current (driver disabled)	-	45.0	-	mA
Current Demand (Scaling = 10A/V ± 2%, 20kΩ)	0	-	5.0	V
OUTPUT				
Current	0.1	-	50	A
Compliance Voltage (Min)	-	-	0.8	V
Compliance Voltage (Max)	4.6	5.0	-	V
Pulsewidth	1.0	-	CW	ms
Duty Cycle	0	-	100	%
Risetime/Falltime at 50A, 5V (10% to 90%)*	-	300	500	µs
Ripple	-	200	-	mA _{RMS}
Enable Delay	-	5.0	-	ms
Disable Delay	-	100	-	µs
Efficiency (at ≥20A, 5V output CW)	-	96	-	%
Current Monitor (Scaling 10A/V, 1kΩ impedance)	0	-	5.0	V
Voltage Monitor (1:1 scaling, 221Ω impedance)	0	-	5.0	V

*With bias current of 2%-10% of current set point when enabled.

Specifications are subject to change without notice.

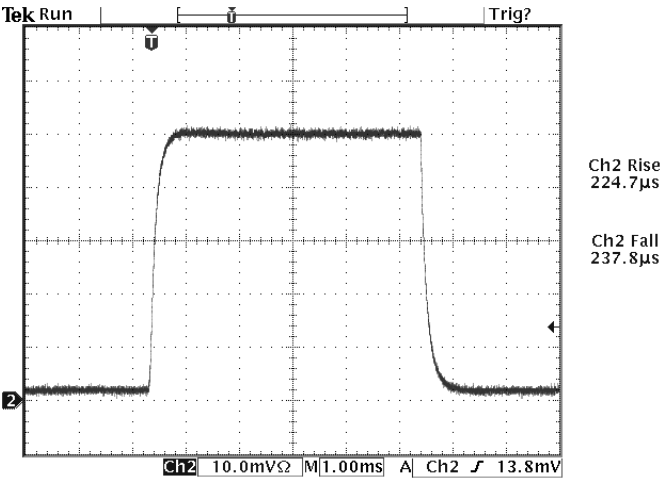
APPLICATIONS: High Current Laser Diode Pumping and Direct Illumination Applications

ABSOLUTE MAXIMUM RATINGS:

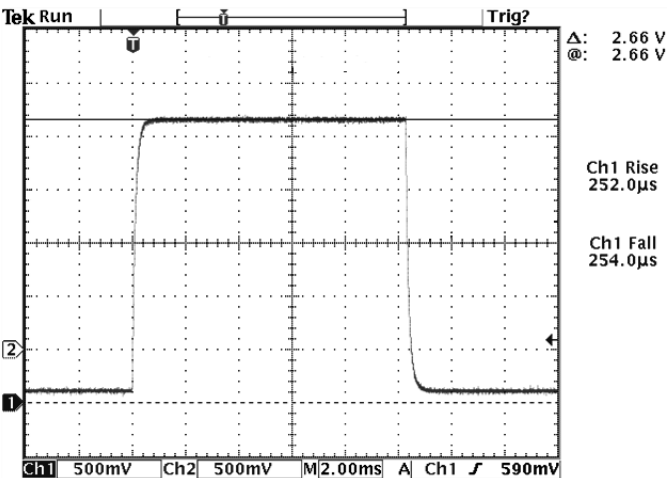
PARAMETER	Min.	Max.	Units
INPUT			
Power (Driver)	9.5	14	VDC
OUTPUT			
Avg. Output Power $P = (\text{Duty Cycle}) \times (\text{Laser Compliance Voltage}) \times (\text{Current})$	-	250	W
TEMPERATURE			
Operating:	-40	+85	°C
Storage:	-55	+125	°C
Humidity:		< 95% Non-Condensing	

Protection:	Open circuit, Short circuit, Temperature, Under-voltage
Connections:	Output – 0.200" Plated through-hole for #10 screw Power – 0.200" Plated through-hole for #10 screw Control/Interface – 3M P/N 30310-5002HB (36" mating cable included)
Cooling:	The unit requires forced air cooling at higher powers and higher ambient temperatures. Approximately 300LFM is required at 25°C ambient and max load (250W). Output may de-rate at high temperatures without forced air.
MTBF	1,126,809 hrs at GB, 40°C, Bellcore
Size:	3.7" x 2.2" x 0.6"
Weight:	2.4 oz

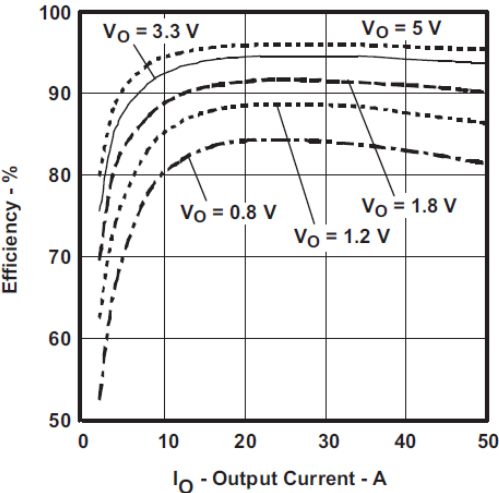
OUTPUT CURRENT WAVEFORMS:



Single Driver Output
50 A output current pulse into 4 V diode load



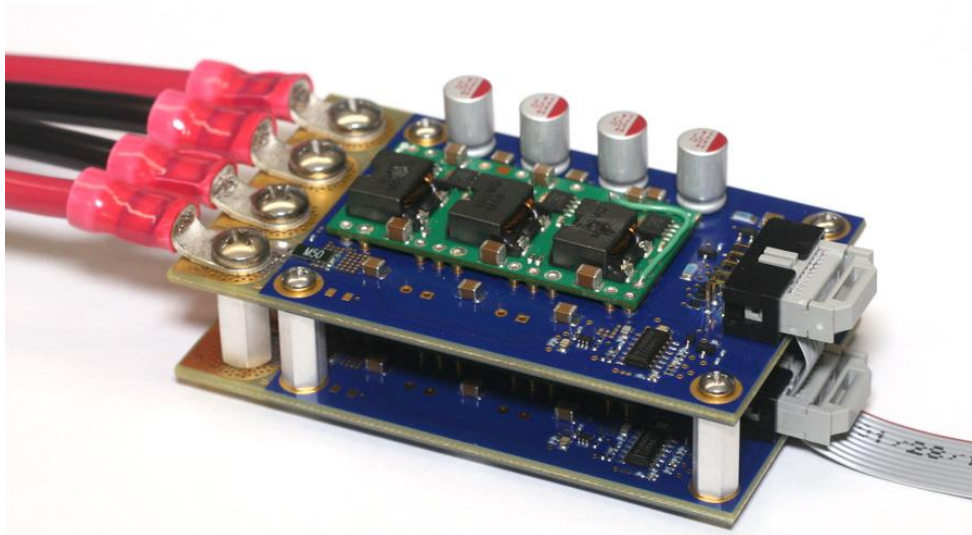
4 ea. Driver Stack Output
200 A output current pulse into 2 V diode load



Efficiency vs Output Current with 12V input

PIN	FUNCTION
1	PULSE
2	GND
3	I_MON
4	GND
5	V_MON
6	GND
7	I_DEMAND_+
8	I_DEMAND_-
9	ENABLE
10	GND

10-pin I/O Connector



2ea Drivers Stacked for 100 A Max Output Current

MECHANICAL OUTLINE DRAWING

