



STACKABLE CW & PULSED LASER DIODE DRIVER

- OUTPUT CURRENT UP TO 50A PER UNIT
- STACK MULTIPLE UNITS FOR 200A OR HIGHER
- COMPLIANCE VOLTAGE UP TO 5V
- 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 50A, 5.0V driver with industry leading efficiency and footprint. Multiple drivers can be stacked together to achieve output currents of 200A or higher. The driver includes open circuit, short circuit, over-temperature and under voltage lockout protection.

SPECIFICATIONS:

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

PARAMETER	787			Units
	Min.	Typical	Max.	
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	-	mARMS
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

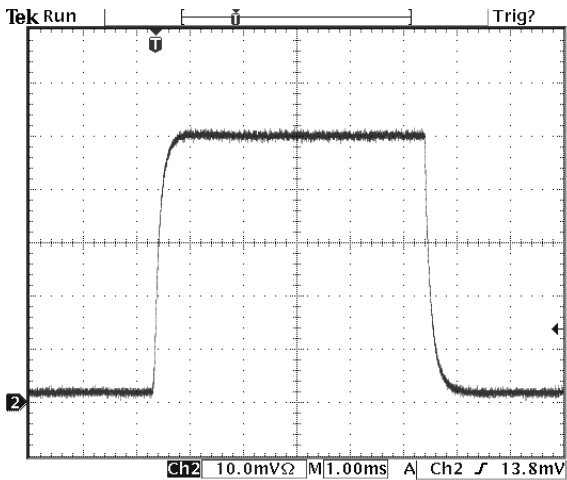


ABSOLUTE MAXIMUM RATINGS:

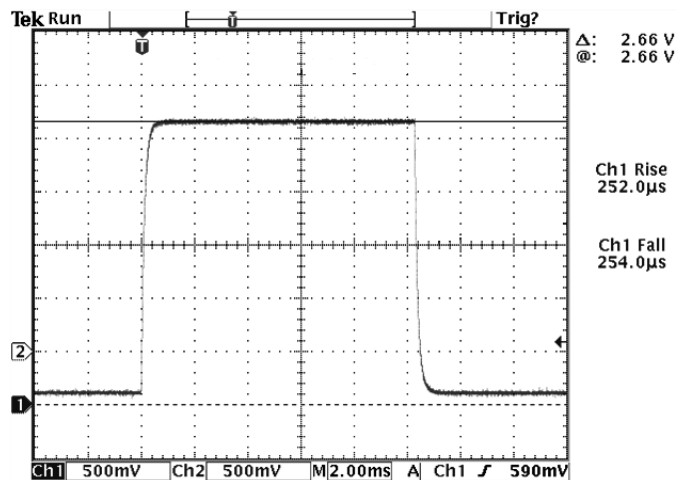
PARAMETER	Min.	Max.	Units
INPUT			
Power (Driver)	9.5	14	VDC
OUTPUT			
Avg. Output Power $P = (\text{Duty Cycle}) \times (\text{Laser Compliance Voltage}) \times (\text{Current})$	-	250	W
TEMPERATURE			
Operating:	-40	+85	°C
Storage:	-55	+125	°C
Humidity:		< 95% Non-Condensing	

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 25C 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:	2.4oz

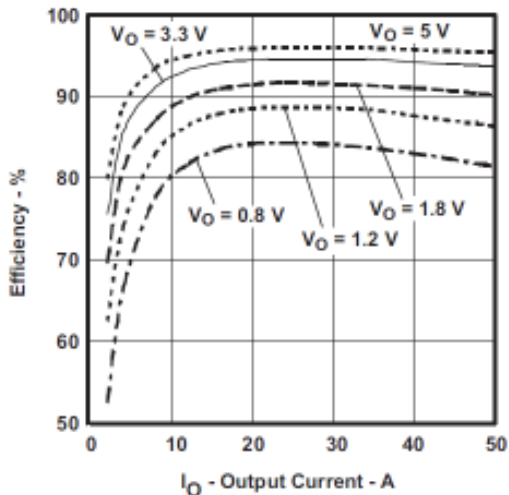
OUTPUT CURRENT WAVEFORMS:



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



4ea Driver Stack Output
200A output current pulse into 2V 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 100A Max Output Current

MECHANICAL OUTLINE DRAWING

