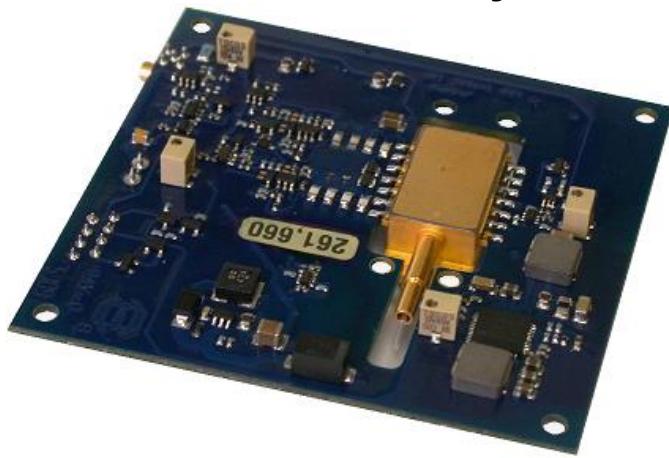




### OEM Seed Laser Diode Driver Assembly

- **Output Current up to 1.2 Amps**
- **Output Pulse Width 10 ns TO CW**
- **Fast Risetime of 6 ns**
- **Compliance Voltage up to 3.0 V**
- **+5 VDC Input Power**
- **RoHS Compliant**



### DESCRIPTION:

AMI's Model 763 OEM seed laser diode driver is ideal for driving 14-pin butterfly packaged laser diode modules for use in CW or pulsed fiber MOPA systems. Applications include materials processing, LIDAR systems for remote sensing, fiber optic temperature sensing, laser communication and rangefinding. The driver is implemented as a transconductance amplifier (analog voltage in, scaled current out). The driver circuitry operates from a single 5 V power source. All other needed voltages are generated on the board by high efficiency switching power supplies. The 763 is manufactured to the RoHS Directive 2002/95/EC requirements. All required mating cables are included.

### SPECIFICATION:



PARAMETER	Min.	Typical	Max.	Units
<b>INPUT</b>				
Power	4.75	5.0	5.25	VDC
Current	-	0.330	3.5	A
Current Control (50 Ω Impedance, 0.333A/V Scaling)	0	-	4.5	V
<b>OUTPUT</b>				
Current	0.1	-	1.2	A
Bias Current (Trimpot adjustable)	0	-	90	mA
Compliance Voltage	-	2.0	3.0	V
Pulsewidth	10	-	CW*	ns
Repetition Rate	Single Shot	-	50*	MHz
Duty Cycle	0	-	100	%
Risetime (Optical) @ 1 A	-	6	10	ns
Falltime (Optical) @ 1 A	-	6	-	ns
TEC Current	0	1.80	3.0	A
TEC Voltage	0	3.14	4.2	V

\* Limited by maximum output power.

Specifications are subject to change without notice.

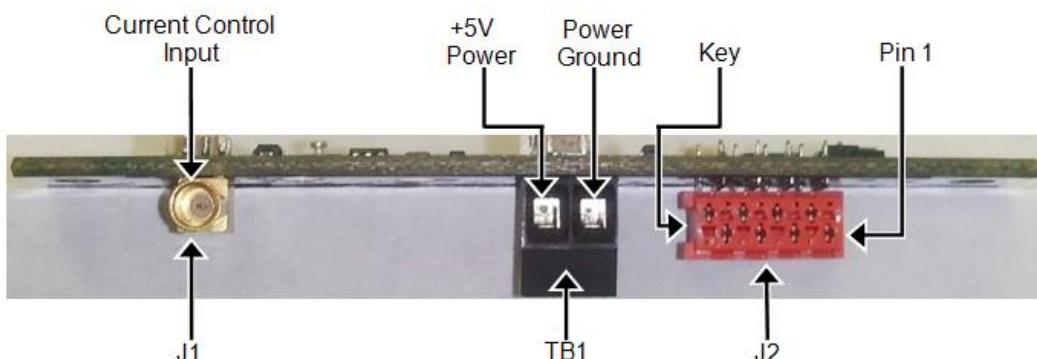
### APPLICATIONS:

Seed Laser Diode Driver/Pump Laser Diode Driver for Pumping Fiber Lasers, LIDAR, Communication

## ABSOLUTE MAXIMUM RATINGS:

PARAMETER	Min.	Max.	Units
<b>INPUT</b>			
Power	-	5.5	VDC
<b>OUTPUT</b>			
Power (25°C, still air)	-	1.0	W
Power (25°C, $\geq$ 200LFM forced air)	-	1.25	W
<b>TEMPERATURE</b>			°C
Operating:	0	+50	°C
Storage:	-20	+70	
Humidity:	< 95% Non-Condensing		

<b>PROTECTION:</b>	Adjustable current limit
	Driver disabled when laser diode die temperature is outside of TEC set point by $\pm 1^\circ\text{C}$
	Driver disabled when the laser current driving FET's junction temperature exceeds 125°C
<b>CONNECTIONS:</b>	
Power:	2 pin Terminal Block ( <i>Molex 39257-002</i> )
Interface:	8 Pin AMP MicroMatch Connectors (7-215460-8)
Current Control:	MMCX Micro Coax Connector
<b>SIZE:</b>	2.9" x 3.00" x 0.6"
<b>THERMAL:</b>	On-board TEC Controller will provide heating and cooling as necessary to maintain desired operating point. Thermistor and the TE cooler are in the laser diode package (not included). Customer may need to provide thermal mass and/or forced air for heatsinking under high dissipation conditions.



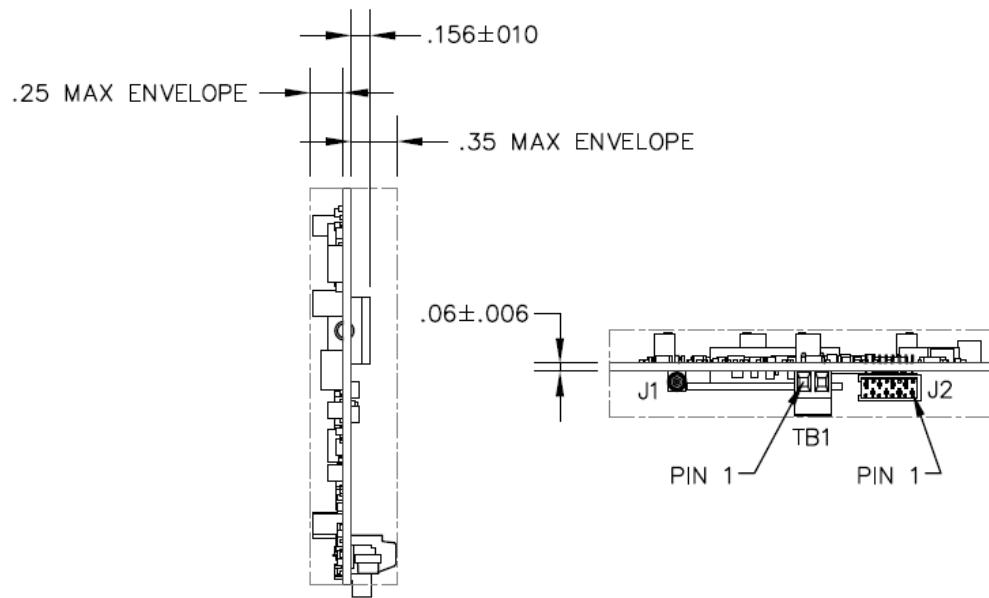
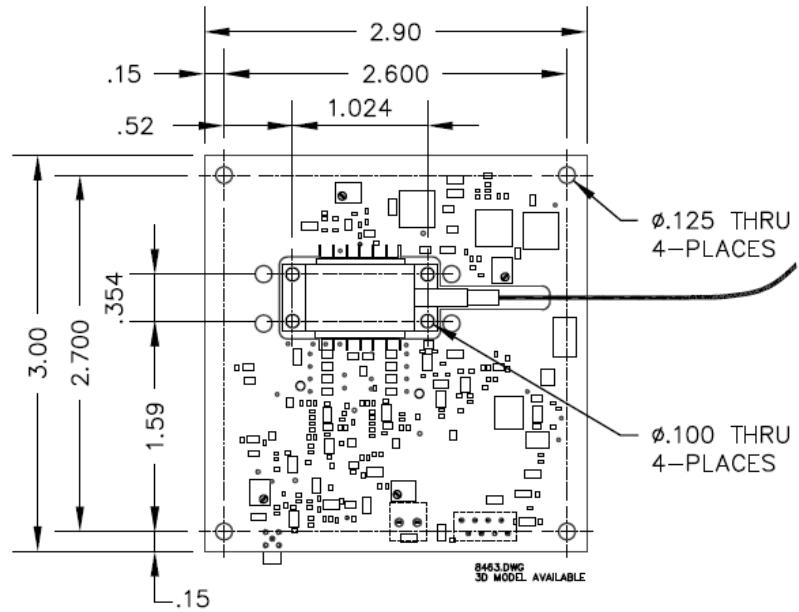
INPUT/OUTPUT and POWER CONNECTORS

I/O CONNECTOR Pinout	
J2	
Pin	Function
1	Enable
2	GND
3	Temp Fault
4	GND
5	Over Current
6	GND
7	Laser Fire
8	GND

J2 PIN DESCRIPTION

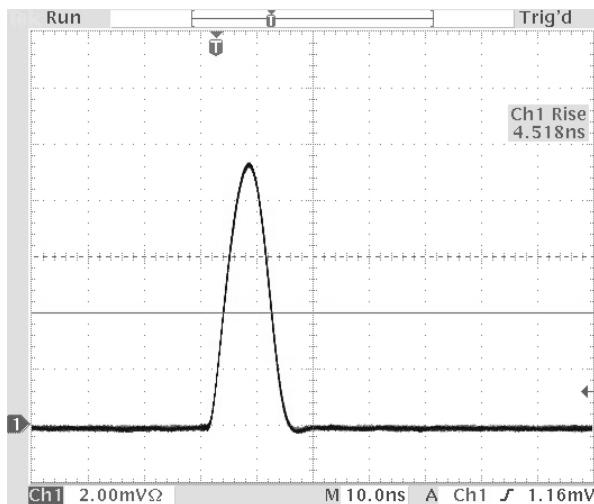
Laser Pinout	
Pin	Function
1	TEC +
2	Thermistor
3	BFM Anode
4	BFM Cathode
5	Thermistor
6	N/C
7	N/C
8	N/C
9	N/C
10	LD Anode
11	LD Cathode
12	N/C
13	Case Ground
14	TEC -

LASER DIODE 14-PIN BUTTERFLY PACKAGE PINOUT

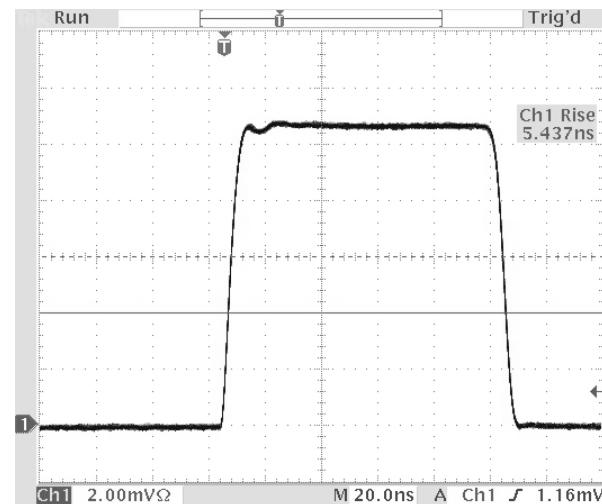


## SAMPLE OPTICAL OUTPUT PULSE WAVEFORMS

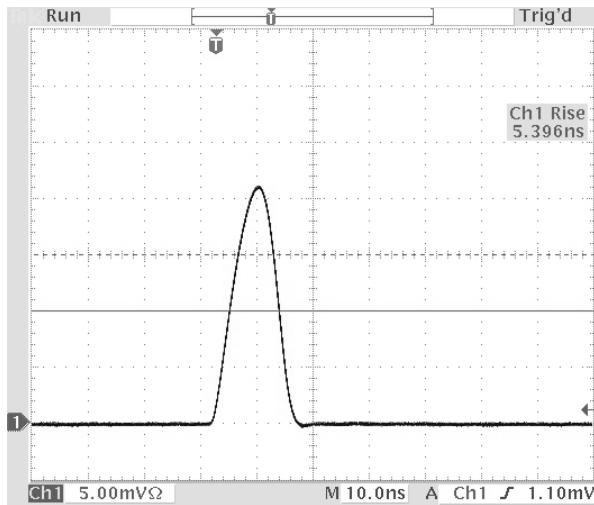
Test Laser: Lumics P/N LU1064M400 400 mW, 1064 nm



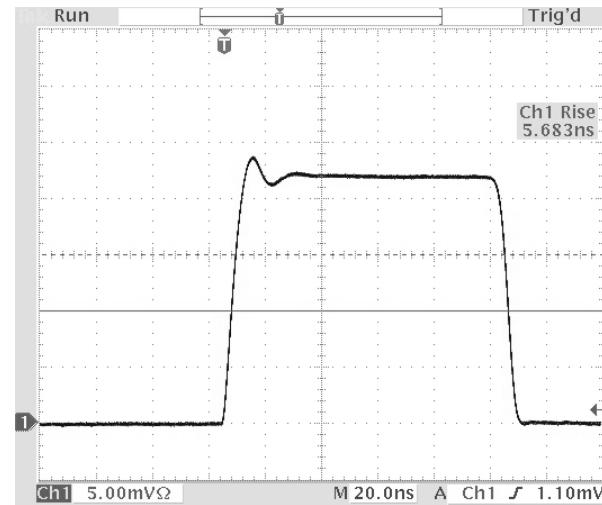
**10 ns Pulse Width, 500 mA Drive Current**



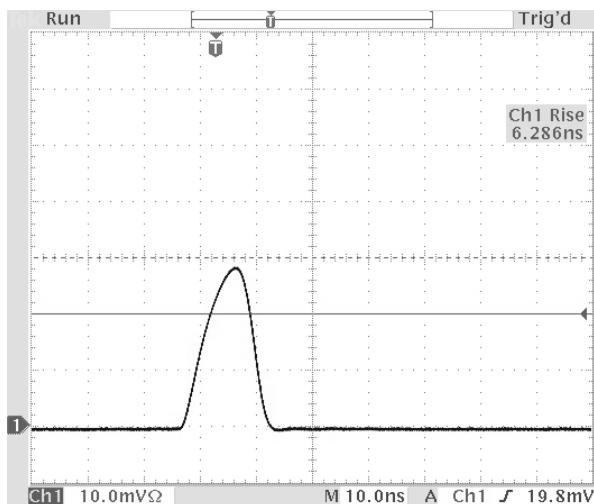
**100 ns Pulse Width, 500 mA Drive Current**



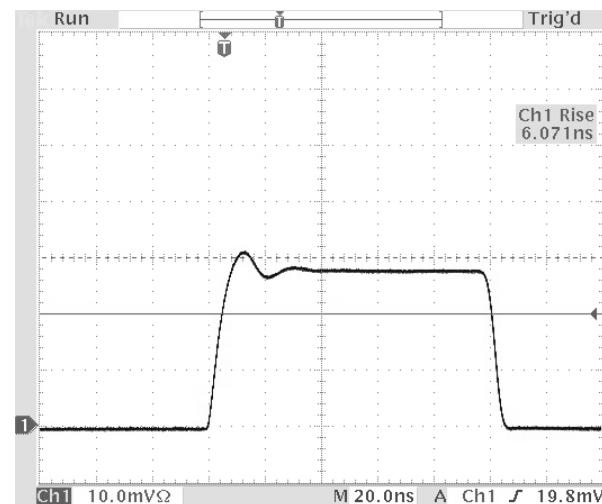
**10 ns Pulse Width, 1 A Drive Current**



**100 ns Pulse Width, 1 A Drive Current**



**10 ns Pulse Width, 1.2 A Drive Current**



**100 ns Pulse Width, 1.2 A Drive Current**