

ULTRA LOW RIPPLE CW & PULSED LASER DIODE DRIVER

- OUTPUT CURRENT UP TO 20 AMPS
- OUTPUT PULSEWIDTH $\leq 10 \mu\text{s}$ TO CW
- COMPLIANCE VOLTAGE UP TO 26 V
- EXTREMELY LOW OUTPUT RIPPLE
- ANALOG PULSE SHAPING
- RoHS COMPLIANT



DESCRIPTION:

AMI's Model 785 OEM laser diode driver is ideal for compact industrial and medical direct illumination applications that require extremely low ripple and/or pulse shaping. Proprietary technology allows AMI to offer a 0-20 A, 2-26 V driver with industry leading output current stability and small footprint. Contact AMI today to discuss your application's requirements.

SPECIFICATIONS:

| PARAMETER | 785A | | | Units |
|----------------------------------------------------|-------|----------|-------|------------------|
| | Min. | Typical | Max. | |
| INPUT | | | | |
| Power (Driver) | +10.0 | +12.0 | +14.0 | VDC |
| Current (Driver) | - | 50 | 100 | mA |
| Power (Laser) | +3.0 | - | +28.0 | VDC |
| Current (Laser) | - | - | 20 | A |
| Control Voltage (Scaling = $4\text{A/V} \pm 5\%$) | 0 | - | 5 | V |
| Pulse Source (TTL) | 2.2 | - | 5 | V |
| Enable (TTL) | 2.2 | - | 5 | V |
| OUTPUT | | | | |
| Current | 0 | - | 20 | A |
| Compliance Voltage | 1.5 | - | 26 | V |
| Pulsewidth | 2.0 | - | CW | μs |
| Duty Cycle | 0 | - | 100 | % |
| Modulation Bandwidth | - | - | 600 | kHz |
| Risetime at 20A (10% to 90%) | 400 | - | 1000 | ns |
| Ripple | - | ~ 0 | <1% | A_{RMS} |
| Noise | - | 0.9% | 2% | % |
| Pulse Overshoot at 20A | - | 2% | 4% | % |

Specifications are subject to change without notice.

APPLICATIONS:

Direct Illumination Applications requiring precise current regulation.

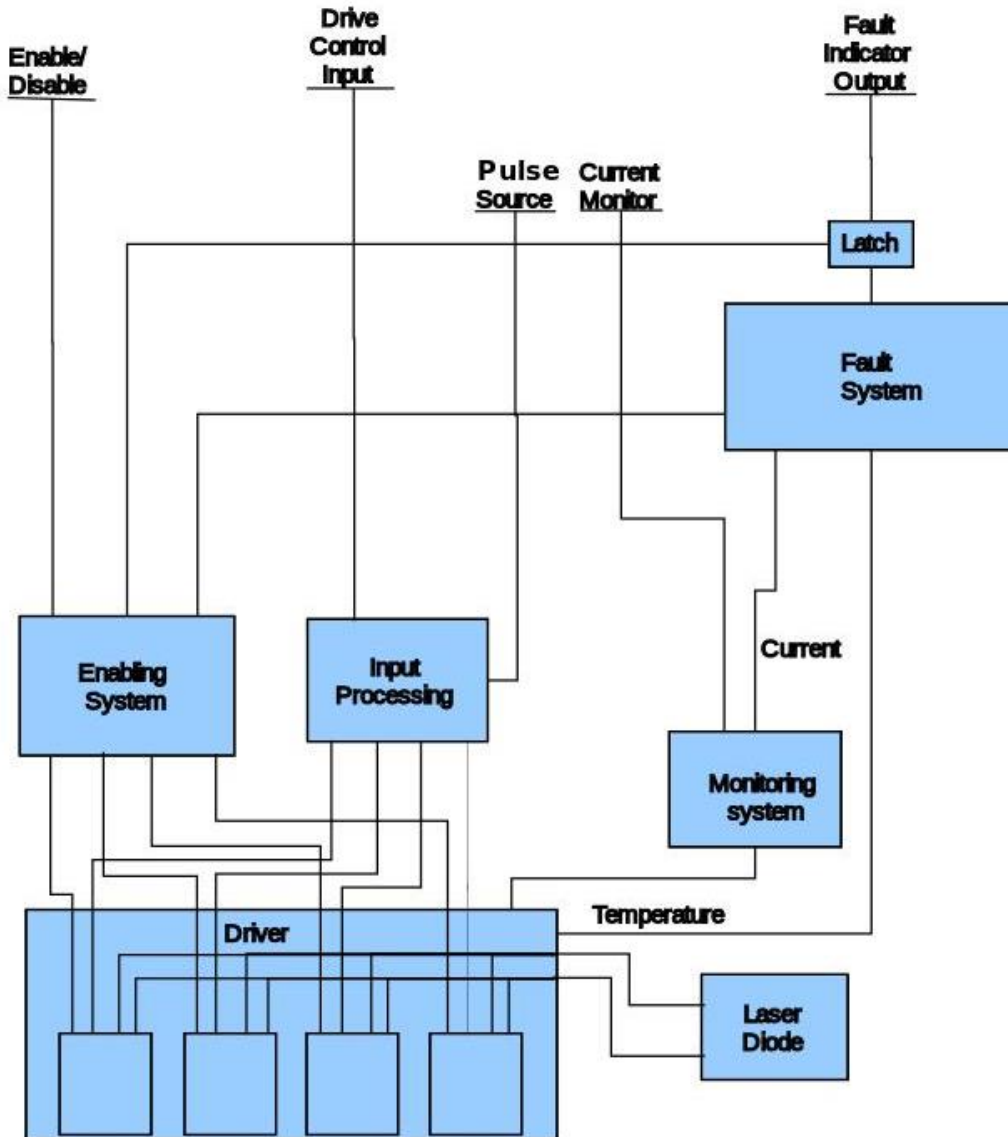


ABSOLUTE MAXIMUM RATINGS:

| PARAMETER | Min. | Max. | Units |
|-----------------------------------------------------------------------------------------------------------------------|------|----------------------|-------|
| INPUT | | | |
| Power (Driver) | 9 | 16 | VDC |
| Power (Laser) | - | 28 | VDC |
| OUTPUT | | | |
| Power Dissipation $P = (\text{DutyCycle}) \times (\text{LaserSupply} - \text{LaserDrop}) \times (\text{PeakCurrent})$ | - | 130 | W |
| TEMPERATURE | | | |
| Operating: | 0 | +50 | °C |
| Storage: | -20 | +70 | °C |
| Humidity: | | < 95% Non-Condensing | |

| | |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection: | Over Temperature, Over Current. TTL Output, latched (HIGH state indicates fault) |
| Connections: | Output - Edge Solder Pads Power – Screw Terminal Blocks (Laser) / 14 Pin AMP MicroMatch (Driver) Control/Interface – 14 Pin AMP MicroMatch Connector (8-215460-4) |
| Cooling: | Provisions for forced air, TEC and water cooling |
| Size: | 4.33" x 2.37" x 1.33" |
| Weight: | 6.4oz |

BLOCK DIAGRAM



14 PIN I/O CONNECTOR

| J1 | Name | Value |
|-----|-----------------|-------|
| P01 | Current Monitor | 0-4V |
| P02 | Ground | GND |
| P03 | Pulse Source | TTL |
| P04 | Ground | GND |
| P05 | Drive Control | 0-5V |
| P06 | Ground | GND |
| P07 | NC | |

| J1 | Name | Value |
|-----|-------------|------------|
| P08 | Ground | GND |
| P09 | Enable | TTL |
| P10 | Ground | GND |
| P11 | Fault | TTL |
| P12 | Ground | GND |
| P13 | NC | |
| P14 | Input Power | 12.0 +/-2V |

MECHANICAL OUTLINE DRAWING

