a HEICO company

Semiconductor Optical Amplifier Driver Assembly

- **OUTPUT CURRENT UP TO 1.2 AMPS**
- **OUTPUT PULSEWIDTH <10ns TO CW**
- **FAST RISETIME OF 6ns**
- **COMPLIANCE VOLTAGE TO 3.0V**
- **TEC CONTROLLER**
- **+5VDC INPUT POWER**
- **RoHS COMPLIANT**

DESCRIPTION:

AMI's Model 7612A Semiconductor Optical Amplifier Driver is ideal for driving 14-pin butterfly packaged SOA or BOA modules for use as power boosters, optical switch, wavelength conversion and others. The driver is implemented as a transconductance amplifier (analog voltage in, scaled current out) and includes an on-board TEC controller for temperature stabilized operation of the optical amplifier. The driver circuitry operates from a single 5V power source. All other required voltages are generated on the board by high efficiency switching power supplies. The 7612A is manufactured to the RoHS Directive 2002/95/EC requirements. All required mating cables are included.

SPECIFICATION:

PARAMETER	Min.	Typical	Max.	Units
INPUT				
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
OUTPUT				
Current	0.1	-	1.2	A
Bias Current (Trimpot adjustable)	0	-	90	mA
Compliance Voltage	-	2.0	3.0	V
Pulsewidth	6	-	CW*	ns
Repetition Rate	Single Shot	-	50*	MHz
Duty Cycle	0	-	100	%
Risetime (Optical) @ 1A	-	6	10	ns
Falltime (Optical) @ 1A	-	6	-	ns
TEC Current	0	1.80	3.0	A
TEC Voltage	0	3.14	4.2	V

* Limited by maximum power dissipation.

Specifications are subject to change without notice.

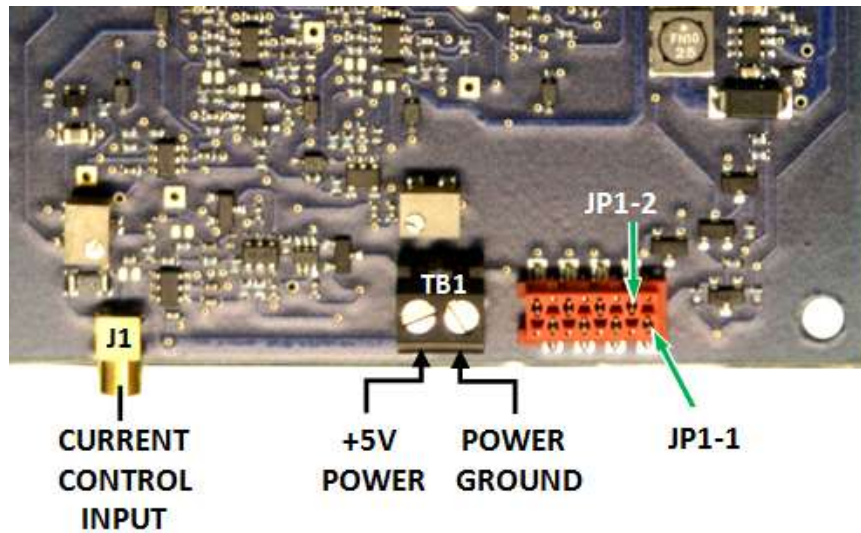## APPLICATIONS:

Optical Switch, Booster Optical Amplifiers, Optical Coherence Tomography

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ABSOLUTE MAXIMUM RATINGS:

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

PROTECTION:	Adjustable current limit
	Driver disabled when laser diode die temperature is outside of TEC set point by ±1˚C
	Driver disabled when the laser current driving FET's junction temperature exceeds 125˚C
CONNECTIONS:	
Power:	2 pin Terminal Block (*Molex 39357-002*)
Interface:	8 Pin TE Connectivity (*188275-8*)
Current Control:	MMCX Micro Coax Connector
SIZE:	3.44" x 3.00" x 0.75"
THERMAL:	On-board TEC Controller will provide heating and cooling as necessary to maintain desired operating point. Thermistor and the TE cooler are in the optical amplifier 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

JP1

Pin	Function
1	$\overline{\text{Enable}}$
2	GND
3	$\overline{\text{Temp Fault}}$
4	GND
5	$\overline{\text{Over Current}}$
6	GND
7	N/C
8	GND

JP1 PIN DESCRIPTION

SOA Pinout

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

14-PIN BUTTERFLY PACKAGE PINOUT

MECHANICAL OUTLINE DRAWING