

SOA and Type 1 Butterfly Laser Diode Mount with RF modulation Input

The BTY-T1SOA-XHS Laser Diode Mount designed for 14-Pin Butterfly SOA but is also compatible with Type-1 14-Pin Butterfly Laser Diodes. It contains a Bias-T RF modulation 50 ohm input with an SMA connector.

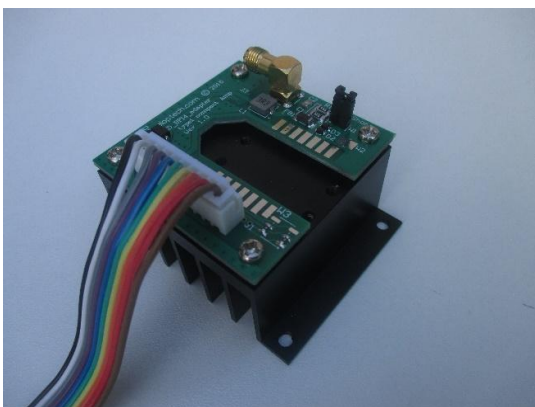
Features

- Small footprint heat-sink that does not require forced air convection for most Laser diodes.
- 10-pin XH male connector to allow quick and simple connectivity.
- 50 ohms SMA RF modulation input.
- Includes a jumper that short-circuit the Laser Diode, keeping it protected when not in use.



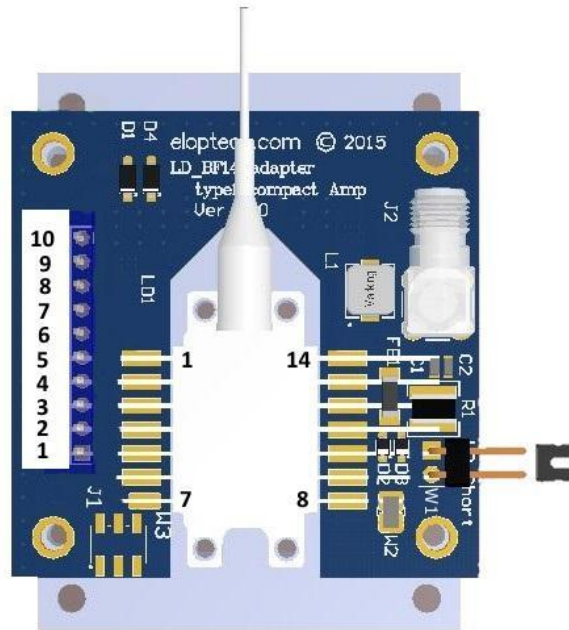
Specifications

LD Configuration	AG/CG
LD Conf. with Modulation	AG
Polarity of PD	Floating
Max Laser Current	3A
Maximum TEC current	3A
Dimensions (LxWxH) mm	66 x 50 x 40
4 Mounting Holes 3.4mm d.	56 x 42



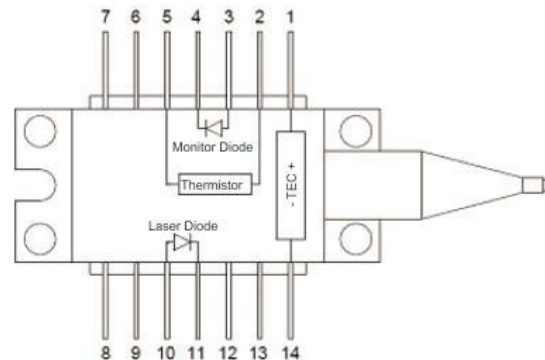
10-pin XH male connector Pinout J1

1	LD Cathode (-)
2	LD Anode (+)
3	Case Ground
4	PD Anode (+)
5	PD Cathode(-)
6	Thermistor
7	Thermistor
8	Case Ground
9	TEC (-)
10	TEC (+)



BFY Type1 Laser Diode Pin Assignment

1	TEC (+)
2	Thermistor
3	PD Anode (+)
4	PD Cathode(-)
5	Thermistor
6	NC
7	NC
8	NC
9	NC
10	LD Anode (+)
11	LD Cathode (-)
12	NC
13	Case Ground
14	TEC (-)



SMA connector

PIN	Bias T RF input
GND	LD Anode (+) (10)

When using the RF modulation Please notice that the RF Generator GND is connected to the LD Anode (+) LD Pin 10. So please use a current source with an AG configuration which corresponds to a GND connected to the LD Anode(pin10) and a negative output connected to the LD Cathode (-).

When using the RF modulation, it is strongly recommended that **W2** on the PCB will be shorted by a solder bead, which will connect the LD Anode (pin10) to the mount GND.

The Bias-T is designed for a DC current of up to 3A and performance should be from below 1Mhz to 1Ghz but it is also dependent on the LD RF input Impedance. RF modulation is AC coupled via a series 50 ohm matching power resistor. Response is 20ma/V so +-5V will give +-100ma. The max is +- 10V.

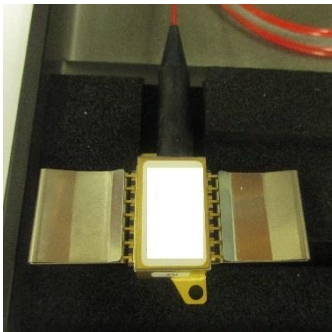
Installation

The Laser diode produces heat. In order to maintain constant temperature a TEC is integrated into the Laser Diode package. To utilize the TEC make sure to have good thermal contact between the Laser Diode package and the Mount heat sink. The use of thermal interface material between the Laser Diode package and the heat sink is strongly recommended. A good quality thermal grease or thermal interface pad can be used for this purpose.

Recommended LD package soldering to the Mount PCB

Important! The Laser Diode may be damaged by ESD, make sure to take precautions and work in an ESD safe environment.

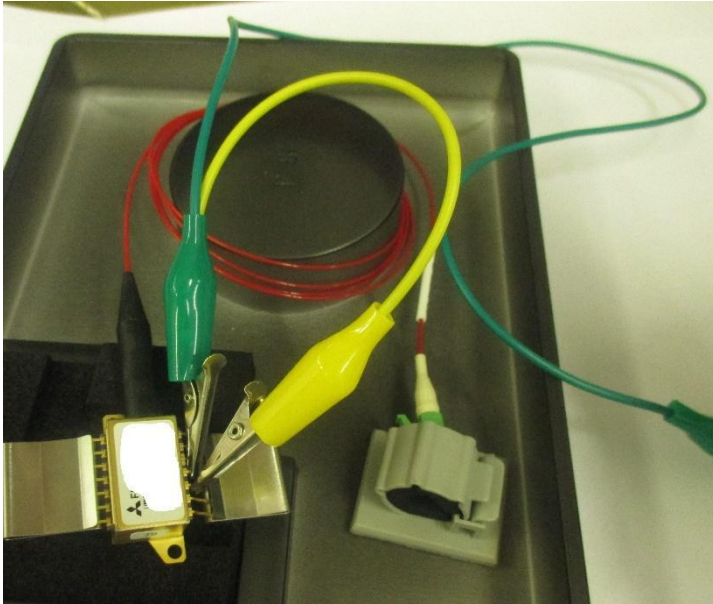
LD usually comes with a metal clip which grounds the LD Anode (pin10) to the LD Cathode (pin11) which protects the LD from ESD.



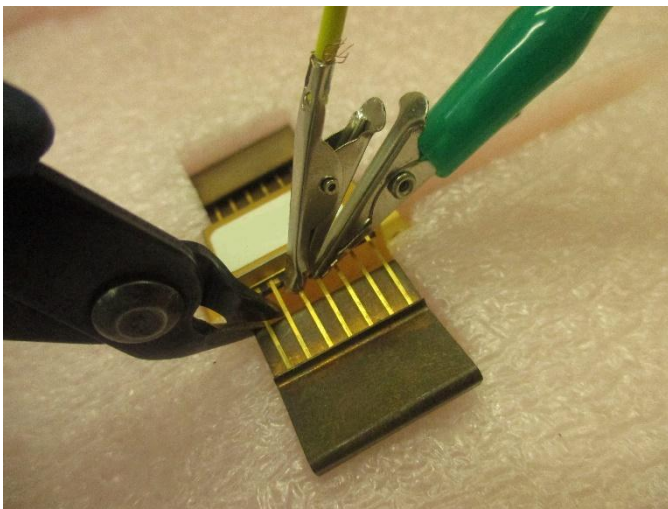
1. While the metal clip is still on the LD, pull it by a few mm from the LD case.



2. In order to protect the LD from any ESD, connect pin10 with pin11 by soldering a short wire (2-5cm) to the pins. Alternative is to connect them by a wire clip.



3. While the wire clip is still in place (or the short wire soldered) cut the pins of the LD to 7-8 mm from case and remove the original metal clips.



4. Apply a small amount of thermal grease on the LD bottom surface where it should connect to the heat sink.

5. While the wire clip is still in place, Install the LD case on the heat sink and secure it with the 4 M2.5 screws. The screws should be tightened evenly in two stages. The package can be distorted and/or damaged if the screws are tightened unevenly or over tightened.

6. While the wire clip is still in place and W1 installed on PCB, Bend the pins of the LD towards the PCB, Solder the LD pins to the PCB and cut the excess length of the pins.

7. Remove the wire clip (or the short wire soldered).

Congratulations! Your diode is ready!

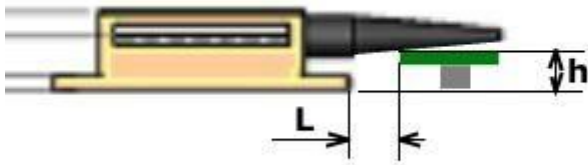
Notes:

W1 jumper is installed by default and is protecting the Laser Diode from esd damage by shortening it. Install W1 jumper when Laser Diode is not in use or disconnected from the current source to protect from damage.

Make sure to remove jumper W1 after connecting the mount to the laser current source.

LD strain relief sleeve

The mount is designed to fit with a LD that has a sleeve with a height **h** of at least 3.6 mm from LD bottom surface. This is 1.6mm PCB + 2mm 4 plastic spacers. In case your LD have a thicker strain relief sleeve with less height then you should replace the spacers to 1mm or shorter. 1mm height spare spacers are supplied with your mount. If you use the shorter spacers you should probably bend the LD pins a bit more, so cut them a bit longer. Measuring the height (h) could be 5.6mm (L) away from LD flange so gaining some height because of sleeves cone shape.



Heat sink dimensions and mounting holes

The Mount have 4 holes of 3.4mm on its base to secure it to a working surface.

The length between the holes is 42mm on the 50mm side and 58mm on the 66mm side.

Warranty: Limited to Mount value.

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