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THORLABS

Part LDC2500B - SEP 26, 2019

Item # LDC2500B was discontinued on SEP 26, 2019. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

TAPERED AMPLIFIER MOUNT AND DRIVER

- For Use with Tapered Amplifiers
- Integrated Current and TEC Controllers
- Drive Current up to 2.5 A
- 14-Pin Butterfly Package Mount

LDC2500B

LDC2500B
Shown with a Tapered Amplifier Installed

Hide Overview

OVERVIEW

Features

This item will be retired without replacement when stock is depleted. If you require this part for line production, please contact our OEM Team.

Limited STOCK

- Integrated Current and TEC Controllers
- Compatible with 14-Pin Butterfly Packages
- Drive Current up to 2.5 A
- Dual TEC for Chip and Package Temperature Control
- Mounting Holes for Securing to Optical Table or Breadboard
- USB Connectivity or Stand-Alone Operation

Thorlabs has designed a Tapered Amplifier Controller that is ideal for use with our previous generation 14-pin butterfly Tapered Amplifiers (the TPA780P20 and TPA850P10). Under normal operation conditions, these tapered amplifiers generate too much heat for the standard butterfly package controllers (such as Thorlabs' LM14S2) to handle. The LDC2500B has two TEC's and specially designed heat sinks to address the problem of overheating. The case temperature of the tapered amplifiers is controlled by the second TEC in order to stabilize their gain and to keep the chip temperature under control (typically 25 - 30 °C).

Specifications			
	Min	**Typical**	**Max**
Drive Current	50 mA	--	2.5 A
Compliance Voltage	--	--	2.5 V
Current Stability	--	±2 mA	--
Temperature Stability	--	±0.1 °C	--
TEC Current	--	--	±2.5 A
Cooling Capacity[a]	--	10 W	--
Power Consumption	--	30 W	--
Operation Temperature[b]	5 °C	--	40 °C
Power Supply	--	12 V / 5 A	--
Computer Interface			
Compatibility	Windows XP or Later		
Interface	USB		

- Dependent on Ambient Temperature
- Non-Condensing Environment

Since tapered amplifiers emit high-power light and are sensitive to back reflections, an optical isolator should be used in conjunction with the controller and the tapered amplifier. Thorlabs' IO-3-780-HP and the IO-3-850-HP are both good optical isolator choices for the beam output power level and size.

To address the large amount of heat generated by tapered amplifiers, the controller incorporates a robust cooling system that includes heat sinks, a TEC element, and a low-noise fan. It is still recommended to mount this controller on a water-cooled breadboard, such as the MBC12, to minimize surface heating when sensitive experiments are being performed. Thermal grease is not necessary with this controller; however, a thin layer can help improve thermal conductivity between the tapered amplifier and the heat sink. If thermal grease is used, use sparingly and be careful to avoid getting the grease on any of the optics.

To change the setpoints of this integrated controller, a computer needs to be connected to the mount through the USB interface. Once the parameters are set and stored in the LDC2500B, they are retained through power-up and power-down cycles. The LDC2500B is specially designed to drive our butterfly-packaged tapered amplifiers.

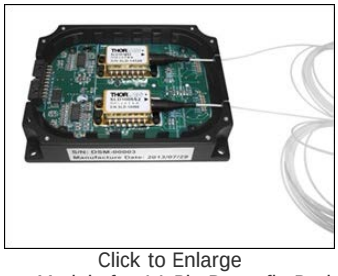
While the LDC2500B is designed for use with the tapered amplifiers, it is also compatible with standard 14-pin butterfly packages (see pin diagram and dimensions in *Pin Diagram* tab) where case temperature control is required. Please contact Tech Support if you have any questions. As described in the *OEM Modules* tab, Thorlabs also manufactures customized, application-specific butterfly mounts for OEM customers.

Hide OEM Modules

OEM MODULES

Thorlabs OEM Manufacturing

In addition to manufacturing a wide variety of active optical devices, Thorlabs is equipped to deliver customized laser diode, superluminescent diode, and semiconductor optical amplifier modules in OEM quantities. For example, the module shown to the right provides temperature and current control for two superluminescent diodes (SLDs) from an SPI interface. Because this module is designed for standard 14-pin butterfly packages, it is easily adapted for combinations of other optical devices, such as a pigtailed semiconductor laser with an optical amplifier.



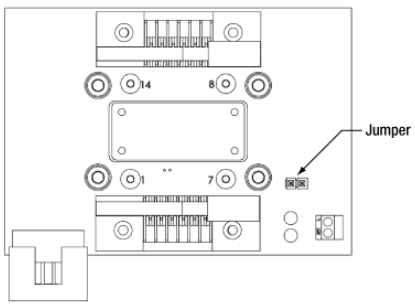
Click to Enlarge
Custom Module for 14-Pin Butterfly Packages

As a manufacturer of III-V semiconductor devices, MEMS-VCSEL lasers, quantum cascade lasers, lithium niobate optical modulators, and other devices, we are intimately familiar with the operating requirements of driving lasers and related components. Please visit this webpage for an overview of our laser manufacturing facility, or contact us directly to discuss your application's needs.

Contact Us

Hide Pin Diagram

PIN DIAGRAM



Pin-to-Connector Configuration	
1	TEC +
2	Thermistor (Chip)
3	No Contact
4	No Contact
5	Thermistor (Chip)
6	Thermistor (Case)
7	Thermistor (Case)
8	No Contact
9	No Contact

10	Device Anode
11	Device Cathode
12	No Contact
13	Case
14	TEC -

Align Pin 1 of the Controller with Pin 1 of a 14-Pin Butterfly Amplifier. Only connect the jumper if the butterfly package has no integrated thermistor.

Hide Part Numbers

Part Number	Description	Price	Availability
LDC2500B	**Tapered Amplifier Current and TEC Controller, 2.5 A, 14-Pin Butterfly Package**	**$4,448.59**	**Lead Time**