LEDL001 USER GUIDE

Performance

- **Industry leading lumen performance, >140 – 175 an 6500K white**
- **Highest Drive Current – 1500mA**
- **Lowest thermal resistance – 9℃/W**
- **Highest operating junction temperature available, 185℃**
- **Industry best lumen maintenance – 50.000 hours life at 100,A with 70% lumen maintenance**

Ordering Information

Order Number
LEDL001

Description

This demonstration circuit consists of a simple connectable printed circuit board carrying an LED, a thermistor and switching links.
It allows the evaluation and testing of attachable Zetex LED driver circuits with varying numbers of series connected LEDs.

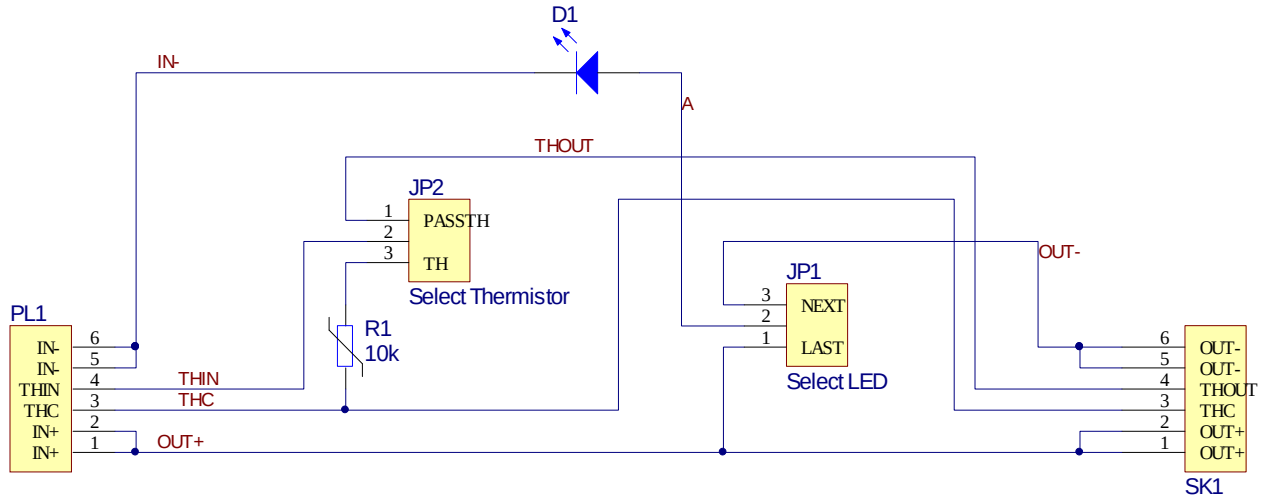
The PCB construction is a single layer of printed copper. There is a solid aluminium backing for heat dissipation. The material used is Aismalibar Cobritherm™ [1] or similar, 1.5mm Al, 110µm dielectric and 35µm copper. It features 4 holes for M2.5 fixings if required.

The board is fitted with a male 6-pin input connector. This mates with any of the Diodes Zetex Evaluation boards which are fitted with a suitable socket. At the opposite end, a female connector is fitted, to allow multiple LED extensions as shown in the schematic below.

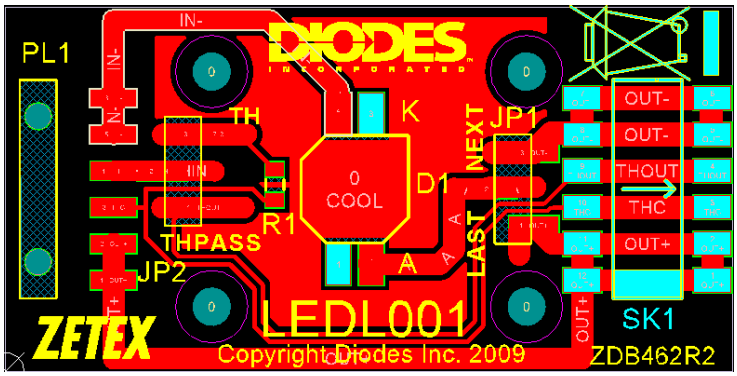
A jumper link is used to allow connection of the LED as the NEXT or LAST in the chain. A further jumper link is provided to select whether the thermistor on the board is connected (position TH), or whether the connection is passed to a board further down the chain (PASSTH).

The LEDL001 is fitted with the Philips Luxeon K2 LED:
http://www.philipslumileds.com/pdfs/ds51.pdf.

Schematic



PCB Layout



Top Side

USAGE

There are two circuits on the board:
The LED circuit and the thermistor circuit.

The input (PL1) and output (SK1) connector pins 1+2 and 5+6 are used for the LED, and 4 and 5 are used for the thermistor.

LED circuit
If only one LED board is being used, or is the last in a chain of several boards, the jumper JP1 should be inserted in the 'LAST' position. This connects the LED directly across pins 1+2 and 5+6 of input connector PL1.

If several boards are being used in a chain, and the board concerned is not in the last position, the jumper JP1 should be inserted in the 'NEXT' position. This connects the LED in series between pins 5+6 on the input connector PL1 and pins 5+6 on the output connector SK1.
It is not possible to configure the board for multiple LEDs in parallel.

Thermistor circuit

In cases where the thermistor is not required, the position of JP2 is irrelevant but it should be removed if any other connections are made to pins 4 and 5 of PL1 or SK1.

If the thermistor is required, and only one LED board is being used, the jumper JP2 should be inserted in the 'TH' position.This connects the thermistor directly across pins 3 and 4 of the input connector PL1, thus making the thermistor 'active'.

If several boards are being used in a chain, the board on which the thermistor is required to be active should be set with JP2 in the 'TH' position. All the other boards should be set with JP2 in the 'THPASS' position. This disconnects the other thermistors and creates a direct link between pin 4 on the input connector PL1 and pin 4 on the output connector SK1.
It is not possible to configure the board for multiple thermistors in parallel.

Parts List

Count	Designator	Description	Package	Manufacturer	Part Number
1	D1	Philips Lumiled K2 LED	SMT	Philips	Lumiled K2
1	R1	10kΩ Thermistor	0805	Vishay	2381 615
2	JP1, JP2	3- way headers for links	-	Samtec	TSM-103-02-L-SV

Input/ Output

Count	Designator	Description	Function	Manufacturer	Part Number
1	PL1	6 pin Input power connector (male) Horizontal header	Connection to LED driver or to previous LED demonstration board in series	Samtec	TSM-106-03-L-SH
1	SK1	Output connector (female) Horizontal header	Allows connection for new demonstration board to be added in series	Samtec	SSM-106-L-SH

Recommended Operating Conditions

Symbol	Parameter	Min	Max	Units
V_F	Forward Voltage at I_F = 1000mA	2.79	4.23	V
I_F	Forward current at T_A=25℃	-	1500	mA

[1] Cobritherm is a trademark of the Aismalibar Corporation

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