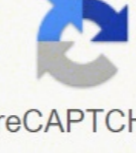


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Supertex Driver Evaluation Board for OSRAM OSTAR™ LED

General Description

The Supertex HV9910DB6 is a simple, constant-current, LED driver evaluation board designed to drive OSRAM's 6-chip or 4-chip OSTAR™ from a 24V supply.

The board uses the Supertex HV9910B in a buck configuration in a constant off-time mode. The peak current control scheme enables fairly accurate control of the LED current with a very simple control scheme and a low part count.

The information in this datasheet also applies to the demoboard which have the Supertex HV9910.

Specifications

Parameter	Value
Input voltage	24V ± 10%
LED string voltage	12 - 20V
Output current	700mA ± 10% for 6-chip OSTAR 750mA ± 10% for 4-chip OSTAR
Switching frequency	Variable
Efficiency@ 24V input	94% for 6-chip OSTAR 91% for 4-chip OSTAR
Open LED protection	Yes
Output short circuit protection	No
Board dimensions	42mm x 16mm

Connection Diagram



Connections

1. Connect the input voltage source between VIN and GND as shown.
2. Connect the LED load between VO+ and VO- as shown (anode to VO+ and cathode to VO-).

Operation of the LED Driver

The Supertex HV9910B LED Driver is a constant off-time, peak current-controlled buck converter. Constant off-time mode of operation is necessary to ensure stability of the peak current mode control since the duty cycle of operation is greater than 50%. The constant off-time operation gives a very good line regulation, making the LED current almost independent of the input voltage. However, constant off-time operation increases the variation of the LED current with the LED string voltage, since the inductor current ripple is highly dependent on the load voltage. This is typically not a problem since the LED voltage variation for a given load is fairly small.

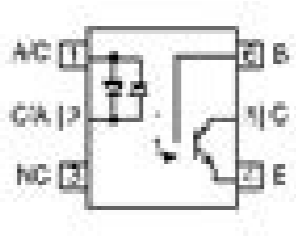


IL250, IL251, IL252, ILD250, ILD251, ILD252

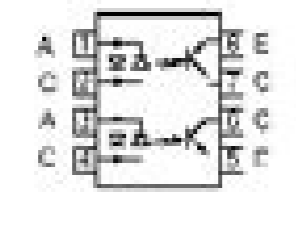
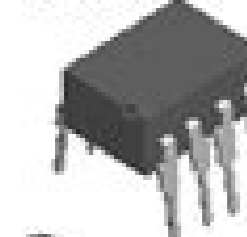
Vishay Semiconductors

Optocoupler, Phototransistor Output, AC Input, with Base Connection

Single Channel



Dual Channel



FEATURES

- AC or polarity insensitive input
- Built-in reverse polarity input protection
- Improved CTR symmetry
- Industry standard DIP package
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/96/EC and WEEE 2002/96/EC



RoHS COMPLIANT

APPLICATIONS

- Ideal for AC signal detection and monitoring

AGENCY APPROVALS

- UL1577, file no. E52744 system code H or J, double protection
- CSA 93751
- BSI IEC 60950, IEC 60065
- DIN EN 60747-5-5 (VDE 0884) available with option 1

DESCRIPTION

The IL250, IL251, IL252, ILD250, ILD251, ILD252 are bidirectional input optically coupled isolators consisting of two gallium arsenide infrared LEDs coupled to a silicon NPN phototransistor per channel.

The IL250/ILD250 has a minimum CTR of 50 %, the IL251, ILD251 has a minimum CTR of 20 %, and the IL252, ILD252 has a minimum CTR of 100 %.

The IL250, IL251, IL252 are single channel optocouplers. The ILD250, ILD251, ILD252 has two isolated channels in a single DIP package.

ORDER INFORMATION

PART	REMARKS
IL250	CTR > 50 %, single channel DIP-6
IL251	CTR > 20 %, single channel DIP-6
IL252	CTR > 100 %, single channel DIP-6
ILD250	CTR > 50 %, dual channel DIP-8
ILD251	CTR > 20 %, dual channel DIP-8
ILD252	CTR > 100 %, dual channel DIP-8
IL250-X007	CTR > 50 %, single channel SMD-6 (option 7)
IL250-X009	CTR > 50 %, single channel SMD-6 (option 9)
IL251-X009	CTR > 20 %, single channel SMD-6 (option 9)
IL252-X007	CTR > 100 %, single channel SMD-6 (option 7)
IL252-X009	CTR > 100 %, single channel SMD-6 (option 9)
ILD250-X009	CTR > 50 %, dual channel SMD-6 (option 9)
ILD251-X006	CTR > 20 %, dual channel DIP-8 400 mil (option 6)
ILD251-X007	CTR > 20 %, dual channel SMD-6 (option 7)
ILD251-X009	CTR > 20 %, dual channel SMD-6 (option 9)
ILD252-X009	CTR > 100 %, dual channel SMD-6 (option 9)

Note

For additional information on the available options refer to option information.

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