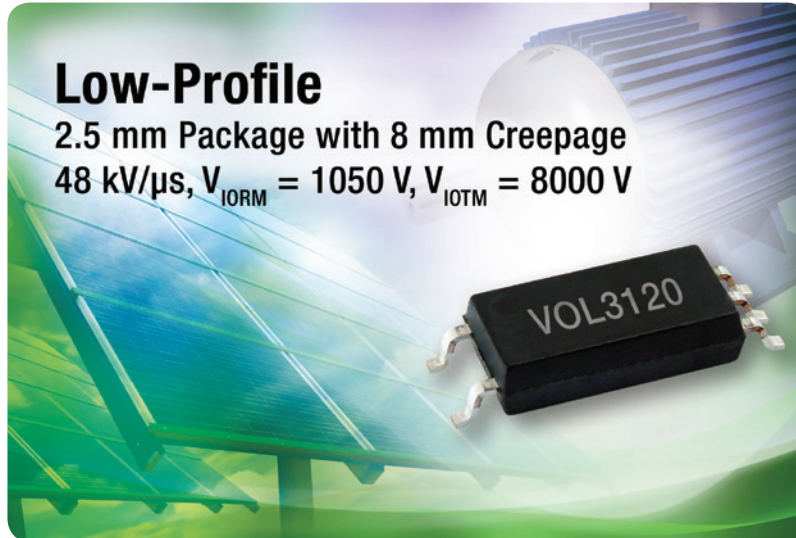


IGBT / MOSFET Drivers



Vishay, as a leading supplier of optocouplers, has broadened its IGBT / MOSFET optodriver portfolio with a new surface-mount, low-profile 2.5 A IGBT / MOSFET optodriver: the VOL3120. This flat-packaged driver features a small footprint with a 2.5 mm height and minimum 8 mm clearance and external creepage distance. It saves up to 30 % package height compared to the standard DIP package. In addition to its compact size, this device provides high isolation voltage ratings of $V_{IORM} = 1050\text{ V}$ and $V_{IOTM} = 8000\text{ V}$, making it ideal for applications with limited height or board space. Additionally, the VOL3120 enables operation at higher working voltages and / or in environments with a high degree of pollution. The very high CMTI of min. 48 kV/μs provides electrical noise decoupling for noisy and harsh industrial environments. Finally, the undervoltage lock-out feature protects the IGBT and MOSFETs from malfunction.

FEATURES

- Output current of 2.5 A
- Widest supply voltage from 15 V to 32 V
- Low current consumption of 2.5 mA (max.)
- Wide operating temp. from -40 °C to +100 °C
- CMTI of 48 kV/μs
- Propagation delay of 0.25 μs (typ.)
- PWD of 0.3 μs (max.)

APPLICATIONS

- Solar inverter
- DC brushless and AC motor drives
- Induction stove tops
- Inverters and DC/DC converters
- Uninterruptible power supplies (UPS)
- Welding equipment
- Alternative energy

RESOURCES

- Datasheets: www.vishay.com/doc?82656
- Application Notes:
 - IGBT/MOSFET Gate Drive Optocoupler: www.vishay.com/doc?81227
 - Optocoupler Common Mode Transient Immunity (CMTI) - Theory and Practical Solutions: www.vishay.com/docs/83702/appnot83.pdf
- For technical support, contact: optocoupleranswers@vishay.com
- For further information: www.vishay.com/optocouplers/opto-driver/
- Sales contacts: www.vishay.com/doc?99914





PACKAGE PERFORMANCE

The height of the VOL3120 is 30 % lower than drivers in a standard DIP package, saving space in applications where space height is critical, such as inductive stove tops and compact inverters used in domestic solar and motor drives. In addition, the device provides high isolation voltage ratings of $V_{IORM} = 1050\text{ V}$ and $V_{IOTM} = 8000\text{ V}$, making it ideal for applications operating at higher working voltages and / or in environments with a high degree of pollution.

WIDEST OPERATING SUPPLY VOLTAGE RANGE AND NOISE ISOLATION

Vishay offers the widest operating voltage range from 15 V to 32 V. This wide range enables engineers to design with IGBTs that recommend negative gate drives for faster switching, while the superior CMR performance enhances noise isolation between high-power switching areas and low-power and small-signal controlling areas.

LOW CURRENT CONSUMPTION

Vishay's IGBT / MOSFET optodivers, with their low supply current down to 1.5 mA at 25 °C and up to 2.5 mA over their rated temperature range, greatly simplify the biasing of the secondary V_{CC} directly from the high-voltage power rail using a simple passive resistive divider network in combination with a Zener diode. In addition to the low supply current, the negative temperature coefficient nature of the supply current has the added benefit of decreasing the current and subsequent dissipated power as the ambient temperature increases. The end result is designs that require smaller thermal dissipation components, optimizing costs and efficiency for high-density, flat-sized applications.

Supply Voltage	Operating Temperature	Package Height (typ.)	External Creepage Distance	Maximum Output Drive Current	Common Mode Transient Immunity	Maximum Rated Withstanding Isolation Voltage	Maximum Transient Isolation Voltage	Maximum Repetitive Isolation Voltage	Propagation Delay Time (typ.)
15 V to 32 V	-40 °C to +100 °C	2.5 mm	≥ 8 mm	2.5 A	≥ 48 kV/μs	5300 V_{RMS}	8000 V	1050 V	0.25 μs

