# Product Overview

## FOD8333: Input LED Drive, 2.5 A Output Current, IGBT Drive Optocoupler with Desaturation Detection, Isolated Fault Sensing, Active Miller Clamp, and Automatic

For complete documentation, see the data sheet.

The FOD8333 is an advanced 2.5 A output current IGBT drive optocoupler capable of driving medium-power IGBTs with ratings up to 1,200 V and 150 A. It is suited for fast-switching driving of power IGBTs and MOSFETs in motor-control inverter applications and high-performance power systems. The FOD8333 offers protection features necessary for preventing fault conditions that lead to destructive thermal runaway of IGBTs.The device utilizes ON Semiconductor's proprietary Optoplanar® coplanar packaging technology and optimized IC design to achieve reliable high isolation and high noise immunity, characterized by high common-mode rejection and power supply rejection specifications. The device is housed in a wide-body, 16-pin, small-outline, plastic package.The gate-driver channel consists of an aluminum gallium arsenide (AlGaAs) light-emitting diode (LED) optically coupled to an integrated high-speed driver circuit with a low-RDS(ON) MOSFET output stage. The fault-sense channel consists of an AlGaAs LED optically coupled to an integrated high-speed feedback circuit for fault sensing.

## Features

- Input LED Drive Facilitates Receiving Digitally Encoded Signals from PWM Output
- Optically Isolated Fault-Sensing Feedback
- Active Miller Clamp to Shut Off IGBT During High dv/dt without Negative Supply Voltage
- High Noise Immunity Characterized by Common Mode Rejection – 35 kV/μs Minimum, VCM = 1500 VPEAK
- 2.5 A Peak Output Current Driving Capability for Medium Power IGBT
- P-Channel MOSFETs at Output Stage Enable Output Voltage Swing Close to Supply Rail (Rail-to-Rail Output)
- Wide Supply Voltage Range: 15 V to 30 V
- Integrated IGBT Protection
- Desaturation Detection
- "Soft" IGBT Turn-Off

  For more features, see the data sheet

## Applications

- Automation
- Consumer Appliances
- Energy Generation & Distribution
- Industrial Motor
- Motion Control - Industrial Motor

## Part Electrical Specifications

| Product | Pricing ($/Unit) | Compliance | Status | $I_{FLH}$ (Max) (mA) | $I_{DDL}$, $I_{DDH}$ (Max) (mA) | $I_{OL}$, $I_{OH}$ (Min) (A) | $t_{PHL}$, $t_{PLH}$ (Max) (ns) | PWD (Max) (ns) | $V_{UVLO}$ (Typ) (V) | $V_{UVLO-}$ (Typ) (V) | CMR (Min) (kV/μs) | $V_{ISO}$ (Min) (V) | $T_{OPR}$ (Min) (°C) | $T_{OPR}$ (Max) (°C) | Package Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FOD8333 | 2.2666 | Pb-free<br>non AEC-Q and PPAP | Active | 7 | 5 | 2.5 | 250 | 100 | 11.7 | 10.7 | 35 | 4243 | -40 | 100 | SOIC16 W |
| FOD8333R2 | 2.2666 | Pb-free<br>non AEC-Q and PPAP | Active | 7 | 5 | 2.5 | 250 | 100 | 11.7 | 10.7 | 35 | 4243 | -40 | 100 | SOIC16 W |
| FOD8333R2V | 2.2666 | Pb-free<br>non AEC-Q and PPAP | Active | 7 | 5 | 2.5 | 250 | 100 | 11.7 | 10.7 | 35 | 4243 | -40 | 100 | SOIC16 W |
| FOD8333V | 2.2666 | Pb-free<br>non AEC-Q and PPAP | Active | 7 | 5 | 2.5 | 250 | 100 | 11.7 | 10.7 | 35 | 4243 | -40 | 100 | SOIC16 W |

**For more information please contact your local sales support at www.onsemi.com.**

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