

## 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 Fairchild'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	Compliance	Status	I <sub>FLH</sub> (Max) (mA)	I <sub>DDL</sub> , I <sub>DDH</sub> (Max) (mA)	I <sub>OL</sub> , I <sub>OH</sub> (Min) (A)	t <sub>PHL</sub> , t <sub>PLH</sub> (Max) (ns)	PWD (Max) (ns)	V <sub>UVLO</sub> (Typ) (V)	V <sub>UVLO</sub> - (Typ) (V)	CMR (Min) (kV/μs)	V <sub>ISO</sub> (Min) (V)	T <sub>OPR</sub> (Min) (°C)	T <sub>OPR</sub> (Max) (°C)	Package Type
FOD8333	Pb-free	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC16 W
FOD8333R2	Pb-free	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC16 W
FOD8333R2V	Pb-free	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC16 W
FOD8333V	Pb-free	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC16 W

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