FOD8333

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

Product Overview

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	3.27	Pb	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC 16 W
FOD8333R2	3.27	Pb	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC 16 W
FOD8333R2V	3.27	Pb	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC 16 W
FOD8333V	3.27	Pb	Active	7	5	2.5	250	100	11.7	10.7	35	4243	-40	100	SOIC 16 W