

Product Overview

FOD8334: Input LED Drive, 4.0 A Output Current, IGBT Drive Optocoupler with Desaturation Detection, Isolated Fault Sensing, and Active Miller Clamp

For complete documentation, see the data sheet.

The FOD8334 is an advanced 4.0 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 FOD8334 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
- 4.0 A Maximum 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
 - Under-Voltage Lockout (UVLO) with Hysteresis
- Fast Switching Speed Over Full Operating Temperature Range
 - 250 ns Maximum Propagation Delay
 - 100 ns Maximum Pulse Width Distortion
- Extended Industrial Temperature Range:
 - –40°C to 100°C
- Safety and Regulatory Approvals
 - UL1577, 4,243 VRMS for 1 Minute
 - DIN-EN/IEC60747-5-5 (Pending Approvals):
1,414 VPEAK Working Insulation Voltage Rating
8,000 VPEAK Transient Isolation Voltage Rating
8 mm Creepage and Clearance Distance

Applications

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

Part Electrical Specifications

Product	Compliance	Status	I_{FLH} (Max) (mA)	I_{DDL} , I_{DDH} (Max) (mA)	I_{OL} , I_{OH} (Min) (A)	t_{PHL} , t_{FLH} (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
FOD8334	Pb-free	Active	7	5	3	250	100	11.7	10.7	35	4243	-40	100	SOIC16 W
FOD8334R2	Pb-free	Active	7	5	3	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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