

## FOD8001

# 3.3V Logic Gate Optocoupler with High Noise Immunity

## Product Overview

For complete documentation, see the data sheet.

The FOD8001 is a 3.3V/5V high-speed logic gate Optocoupler, which supports isolated communications allowing digital signals to communicate between systems without conducting ground loops or hazardous voltages. It utilizes ON Semiconductor’s proprietary coplanar packaging technology, Optoplanar®, and optimized IC design to achieve high noise immunity, characterized by high common mode rejection and power supply rejection specifications.

This high-speed logic gate optocoupler, packaged in a compact 8-pin small outline package, consists of a highspeed AlGaAs LED driven by a CMOS buffer IC coupled to a CMOS detector IC. The detector IC comprises an integrated photodiode, a high-speed transimpedance amplifier and a voltage comparator with an output driver. The CMOS technology coupled to the high efficiency of the LED achieves low power consumption as well as very high speed (40ns propagation delay, 6ns pulse width distortion).

## Features

- High Noise Immunity characterized by Common Mode Rejection (CMR) and Power Supply Rejection (PSR) specifications
- 20kV/s Minimum Static CMR @ Vcm = 1000V
- 25kV/s Typical Dynamic CMR @ Vcm = 1500V, 20MBaud Rate
- PSR in excess of 10% of the supply voltages across full operating bandwidth
- High Speed:
- 25Mbit/sec Data Rate (NRZ)
- 40ns max. Propagation Delay
- 6ns max. Pulse Width Distortion
- 20ns max. Propagation Delay Skew
- 3.3V and 5V CMOS Compatibility

For more features, see the data sheet

## Applications

- Energy Generation & Distribution
- Industrial Motor
- Uninterruptible Power Supply

## Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Data Rate	V <sub>C</sub> (Max) (V)	V <sub>C</sub> (Min) (V)	Channels	I <sub>FT</sub> (Max) (mA)	CTR (Min) (%)	CTR (Max) (%)	CTR Tested @ I <sub>F</sub>	V <sub>OL</sub> (Max) (V)	t <sub>PH</sub> (Max) (ns)	t <sub>PL</sub> (Max) (ns)	PWD (Max) (ns)	CMR (Min) (kV/μs)	V <sub>IS</sub> (Min) (V)	T <sub>OPR</sub> (Min) (°C)	T <sub>OPR</sub> (Max) (°C)	Package Type
FOD8001	2.5287		Active	25	5.5	3	1	-	-	-	-	0.1	40	40	6	20	3750	-40	105	SOIC-8
FOD8001R2	1.4605		Active	25	5.5	3	1	-	-	-	-	0.1	40	40	6	20	3750	-40	105	SOIC-8