

FOD8012A

High CMR, Bi-Directional, Logic Gate Optocoupler

Product Overview

For complete documentation, see the data sheet.

The FOD8012A is a half duplex, bi-directional, highspeed logic gate Optocoupler, which supports isolated communications allowing digital signals to communicate between systems without conducting ground loops or hazardous voltages. It utilizes Fairchild's patented coplanar packaging technology, Optoplanar®, and optimized IC design to achieve minimum 20 kV/s Common Mode Noise Rejection (CMR) rating.

This high-speed logic gate optocoupler is highly integrated with 2 optically coupled channels arranged in bi-directional configuration, and housed in a compact 8-pin small outline package. Each optocoupler channel consists of a high-speed AlGaAs LED driven by a CMOS buffer IC coupled to a CMOS detector IC. The detector IC comprises of an integrated photodiode, a high-speed trans-impedance 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 (60 ns propagation delay, 15 ns pulse width distortion).

Features

- Half Duplex, Bi-Directional
- 20 kV/μs Minimum Common Mode Rejection
- High Speed:
 - 15 Mbit/sec Data Rate (NRZ)
 - 60 ns Maximum Propagation Delay
 - 15 ns Maximum Pulse Width Distortion
 - 30 ns Maximum Propagation Delay Skew
- 3.3 V and 5 V CMOS Compatibility
- Extended Industrial Temperature Range, -40 to +110°C
- Safety and Regulatory Approvals
 - UL1577, 3750 VACRMS for 1 min.
 - DIN EN/IEC60747-5-5

Applications

- Industrial Fieldbus Communications
 - DeviceNet, CAN, RS485
- Microprocessor System Interface
 - SPI, I2C
- Programmable Logic Control
- Isolated Data Acquisition System
- Voltage Level Translator

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Data Rate	V _C (Max) (V)	V _C (Min) (V)	Channels	I _{FT} (Max) (mA)	CTR (Min) (%)	CTR (Max) (%)	CTR Tested @ I _F	V _{OL} (Max) (V)	t _{PH} (Max) (ns)	t _{PL} (Max) (ns)	PWD (Max) (ns)	CMR (Min) (kV/μs)	V _{IS} (Min) (V)	T _{OPR} (Min) (°C)	T _{OPR} (Max) (°C)	Package Type
FOD8012A	1.7079		Active	15	5.5	3	2	-	-	-	-	0.1	60	60	15	20	3750	-40	110	SOIC-8
FOD8012AR2	1.5997		Active	15	5.5	3	2	-	-	-	-	0.1	60	60	15	20	3750	-40	110	SOIC-8