



Product Overview

NCID9211: High Speed Dual-Channel, Bi-Directional Ceramic Digital Isolator

For complete documentation, see the data sheet.

The NCID9211 is a galvanically isolated full duplex, bi-directional, high-speed dual-channel digital isolator with output enable. This device supports isolated communications thereby allowing digital signals to communicate between systems without conducting ground loops or hazardous voltages. It utilizes ON Semiconductor patented galvanic off-chip capacitor isolation technology and optimized IC design to achieve high insulation and high noise immunity, characterized by high common mode rejection and power supply rejection specifications. The thick ceramic substrate yields capacitors with ~25 times the thickness of thin film on-chip capacitors and coreless transformers. The result is a combination of the electrical performance benefits that digital isolators offer with the safety reliability of a >0.5 mm insulator barrier similar to what has historically been offered by optocouplers. The device is housed in a 16-pin wide body small outline package.

Features

- The only Digital Isolator available that includes insulation reliability that matches optocouplers
 - DTI (Distance Through Insulation): ≥ 0.5 mm
 - Maximum Working Insulation Voltage: 2000 Vpeak
 - Specifications Guaranteed Over 2.5 V to 5.5 V Supply Voltage and -40°C to 125°C Extended Temperature Range
 - High Speed: \blacklozenge 50 Mbit/s Data Rate (NRZ) \blacklozenge 25 ns Maximum Propagation Delay \blacklozenge 10 ns Maximum Pulse Width Distortion
 - No insulation material wear out over time up to 1500V, no LED degradation, consistent performance from device-to-device
 - 100 KV/ μ s Minimum Common Mode Rejection
 - Full Duplex, Bi-directional Communication
 - 8 mm Creepage and Clearance Distance to Achieve Reliable High Voltage Insulation.
 - Over Temperature Detection
- For more features, see the data sheet

Benefits

- Performance of a Digital Isolator with safety of an optocoupler
- Off-Chip Capacitive Isolation to Achieve Reliable High Voltage Insulation
- Better safety and long term reliability vs. other Digital Isolation methodologies.
- Device performance across voltage and temperature is predictable and doesn't require overdesign
- Better performance than optocoupler solutions
- Longer life time expectancy than optocouplers and other Digital Isolators in the market.
- Improves noise immunity while meeting stringent EMC/EMI performance requirements

Applications

- Isolated PWM Control
- Industrial Fieldbus Communications
- Microprocessor System Interface (SPI, I2C, etc.)
- Programmable Logic Control
- Isolated Data Acquisition System

End Products

- Power Supply

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Total Channels	Reverse Channels	Output Enable	V _{ISO} (Min) (V _{RM})	V _{IOT} (Min) (V)	Data Rate (Mbps)	T _{PLH} (Max) (ns)	T _{PHL} (Max) (ns)	PWD (Max) (ns)	CMTI (Min) (kV/ μ s)	V _{DD} (Max) (V)	DTI (Min) (mm)	E _{CRC} (Min) (mm)	T _{OPR} (Min) (°C)	T _{OPR} (Max) (°C)	Package Type
NCID9211	2.2666	Pb-free non AEC-Q and PPAP	Active	2	1	Yes	5000	8000	50	25	25	10	100	5.5	0.5	8	-40	125	SOIC16W
NCID9211R2	2.2666	Pb-free non AEC-Q and PPAP	Active	2	1	Yes	5000	8000	50	25	25	10	100	5.5	0.5	8	-40	125	SOIC16W

For more information please contact your local sales support at www.onsemi.com.

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