NVE CORPORATION

NEW!
IL41050 CAN
Transceivers

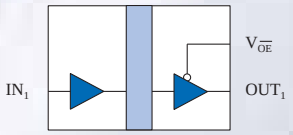
IsoLoop® Isolation Products

Short-Form Catalog

Digital Isolators and Transceivers

IL700/IL200 Series High-Performance Isolators

The Ultimate in Speed and Performance



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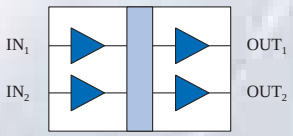

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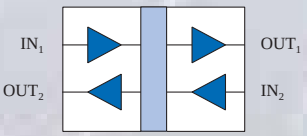

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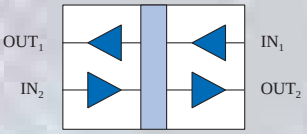

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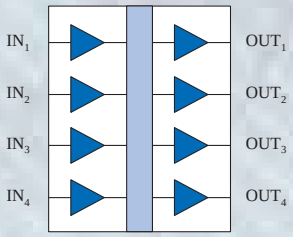

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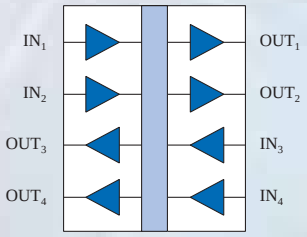

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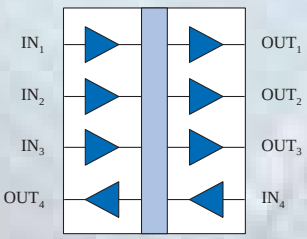

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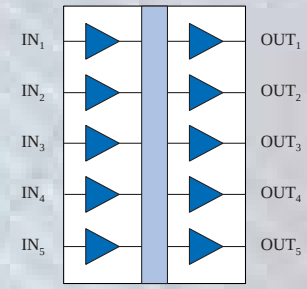

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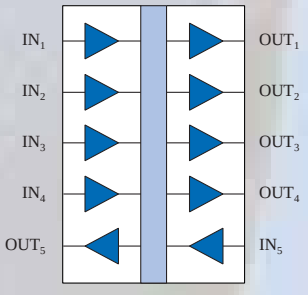
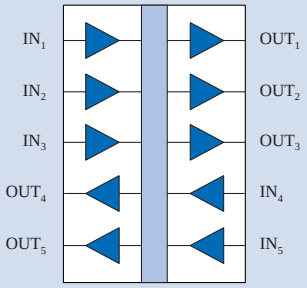


IL261



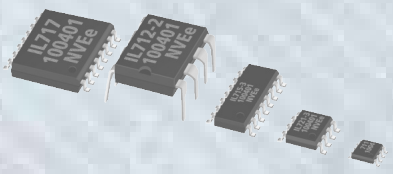
IL262

The IL700 and IL200-Series Digital Isolators provide unsurpassed performance and flexibility, including highest data rates, smallest packages, lowest distortion, low power consumption, widest temperature range, and 2,500 V_{RMS} isolation. All devices are UL1577 and IEC61010 approved.

Popular IL700/IL200 applications include serial interfaces, isolated CANbus, isolated SPI, isolated A/D converters, and power interfaces.

Features:

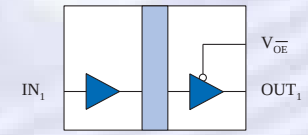
- ***IL200 Series***
  Five channels per package
- ***IL700 Series***
  World's smallest isolators (available MSOP)
- ***IL700S Series***
  Fastest (150 Mbps) and lowest PWD (300 ps)
- ***IL700T Series***
  Highest operating temperature (125°C with no derating)



Parameters	Min.	Typ.	Max.	Units
Data Rate (S-Series)	100 (130)	110 (150)		Mbps
PWD (S-Series)		3 (0.3)	3	ns
Propagation Delay		10	15	ns
Propagation Delay Skew		4	6	ns
Transient Immunity	20	30		kV/µs
Temperature Range (T-Series)	−40		+100 (+125)	°C
IL200 Series	−40		+85	°C

IL500 Series 2 Mbps Isolators

The Cost-Effective Alternative



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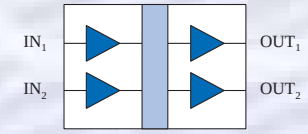

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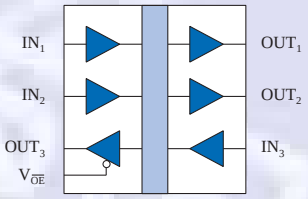

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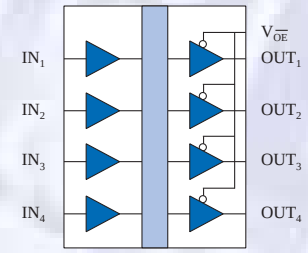

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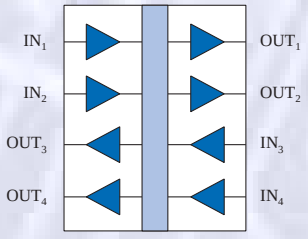


IL516

IL500-Series Isolators are NVE's lowest-cost isolators. One, two, three, or four channel configurations; SOIC or unique MSOP packages. An internal refresh clock ensures DC-correct operation. 2,500 V_{RMS} isolation; with UL1577 and IEC61010-2001 approval.

Popular IL500-Series applications include isolated A/D and D/A converters, serial interfaces, isolated SPI, and power interfaces.

Features:

- 2 Mbps
- 10 ns PWD
- DC correct
- 2,500 V_{RMS} isolation (1 minute)
- –40°C to +85°C Operating Range
- MSOP and SOIC packages

Parameter	Min.	Typ.	Max.	Units
Data Rate	2			Mbps
Pulse Width Distortion			10	ns
Propagation Delay			25	ns
Propagation Delay Skew			10	ns
Transient Immunity	20	30		kV/µs
Temperature Range	–40		+85	°C

IL600 and IL600A Passive Input Isolators

*The Opto Alternative*SM

The award-winning IL600 and IL600A Series Isolators provide unique passive inputs for flexibility similar to LED-input optocouplers. The IL600-Series has CMOS outputs and the IL600A-Series has open-drain outputs.

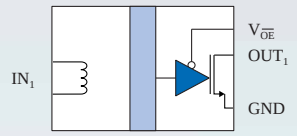
Unlike other isolators, the IL600 and IL600A-Series can be configured for inverting or non-inverting inputs.

The IL600 and IL600A-Series Isolators are available in PDIP, SOIC, and unique MSOP packages. Parts are also available as bare die for chip-on-board assembly. All NVE products are supplied RoHS compliant as standard.

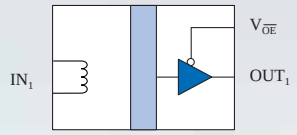
Popular IL600/IL600A Series applications include isolated PLCs, serial interface receivers, I²C bus, isolated CAN Bus), and wired-or controls.

Features:

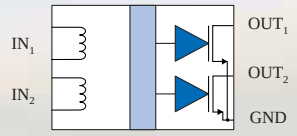
- 2,500 V_{RMS} isolation (1 minute)
- Failsafe operation
- DC correct
- 5 mA input current
- 3.3 V or 5 V supply
- 2.5 mA dynamic input current (50% duty cycle)
- UL1577 and IEC61010 approval
- PDIP, SOIC, MSOP, or bare die



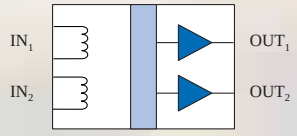
IL610A



IL610



IL611A



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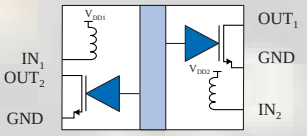

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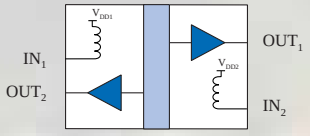

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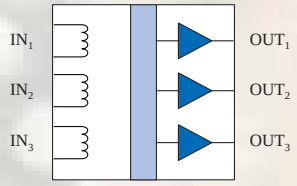

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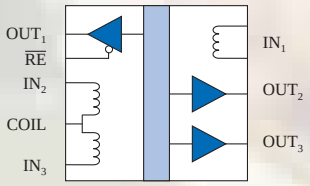


IL614

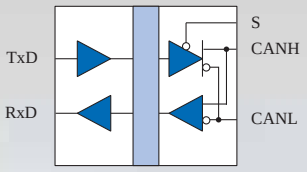
Parameter	Min.	Typ.	Max.	Units
Data Rate (A-Series)	100 (10)			Mbps
Pulse Width Distortion		3	5	ns
Propagation Delay		8	15	ns
Propagation Delay Skew		4	6	ns
Transient Immunity	15	20		kV/µs
Temperature Range	−40		+85	°C

IL400, IL3000, and IL41050 Series

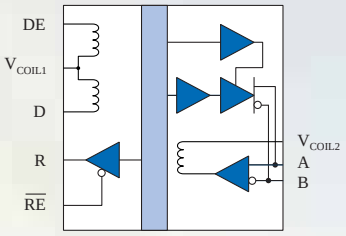
Single-Chip Isolated Network Transceivers

NVE offers a wide choice of isolated RS-422, RS-485 and CAN network transceivers. Models provide very high speed, 15 kV ESD protection, handshake channels, and fractional loads.

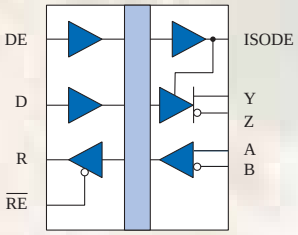
Versions are available in 0.15-inch and 0.3-inch SOIC packages, making these the most compact solutions in the world while still meeting the creepage and clearance requirements of applicable safety standards. All transceivers have an isolation rating of 2,500 V_{RMS} (one minute), and are supplied RoHS compliant as standard. All are UL1577 and IEC61010 approved; the IL41050 is ISO 11898 compliant; the IL3685 is PROFIBUS compliant.



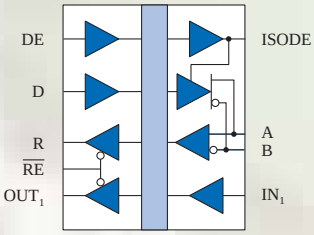
IL41050



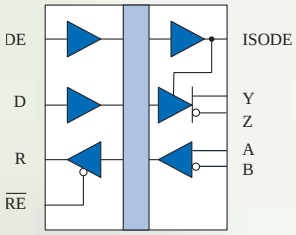
IL3122/IL3185/
IL3222/IL3285/
IL3422/IL3485



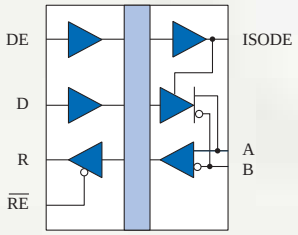
IL422/IL485



IL485W



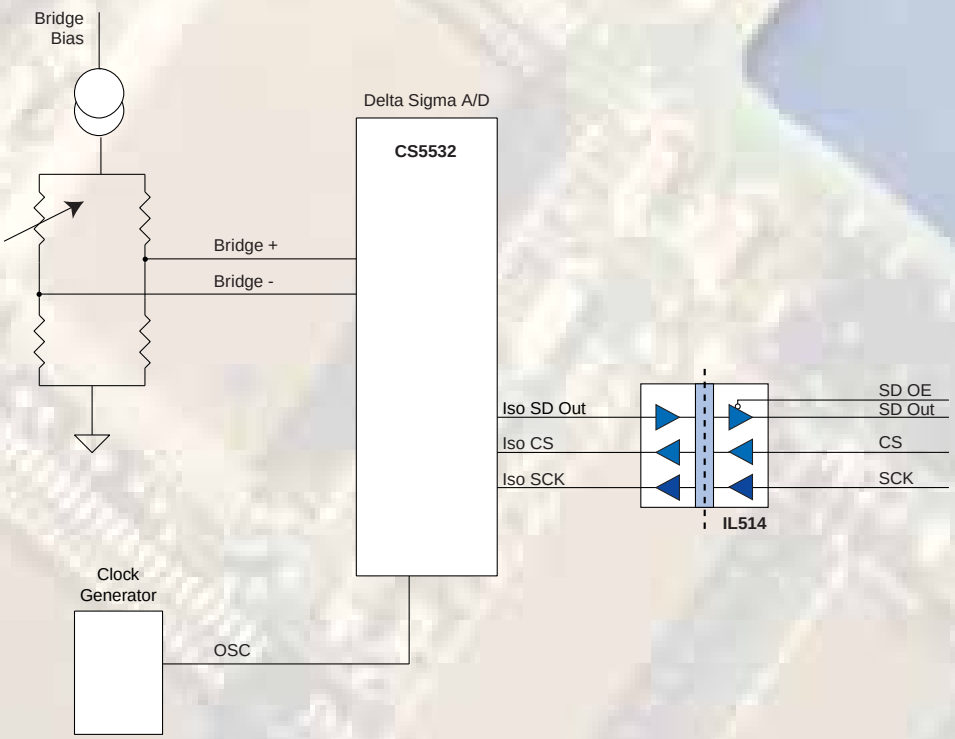
IL3522/IL3585



IL3685

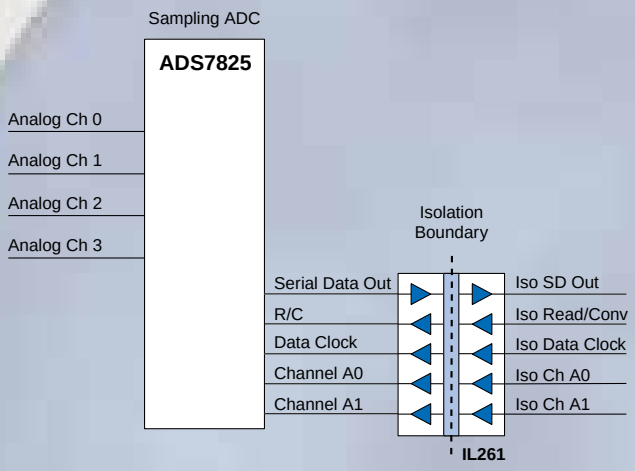
Model	Bus	Inputs	Mbps	Nodes	Bus ESD (kV)	Key Features	Packages
IL41050	CAN	Digital	1	110	4	ISO 11898 Compliant	0.15" SOIC-16; 0.3" SOIC-16
IL3122	RS-422	Passive	5	32	15	Low Cost	0.15" SOIC-16; 0.3" SOIC-16
IL3185	RS-485	Passive	5	32	15	Low Cost	0.15" SOIC-16; 0.3" SOIC-16
IL3222	RS-422	Passive	5	256	15	Fractional Load	0.15" SOIC-16; 0.3" SOIC-16
IL3285	RS-485	Passive	5	256	15	Fractional Load	0.15" SOIC-16; 0.3" SOIC-16
IL3422	RS-422	Passive	20	32	15	High Speed	0.15" SOIC-16; 0.3" SOIC-16
IL3485	RS-485	Passive	20	32	15	High Speed	0.15" SOIC-16; 0.3" SOIC-16
IL422	RS-422	Digital	25	32	15	Industry Standard	0.3" SOIC-16
IL485	RS-485	Digital	35	32	2	Industry Standard	0.3" SOIC-16
IL485W	RS-485	Digital	35	32	2	RS-485 + Handshake	0.3" SOIC-16
IL3522	RS-422	Digital	40	50	15	Very High Speed	0.3" SOIC-16
IL3585	RS-485	Digital	40	50	15	Very High Speed	0.3" SOIC-16
IL3685	RS-485	Digital	40	50	15	PROFIBUS Compliant	0.3" SOIC-16

Illustrative A/D Convertor Applications



Isolated SPI Delta-Sigma A/D Converter Using IL514

This circuit illustrates a typical single-channel delta-sigma ADC isolated SPI interface. The ADC is located on the bridge with no signal conditioning electronics between the bridge sensor and the ADC. A four-channel IL717 or five-channel IL261 can be used in a similar circuit with additional isolated clock channels.

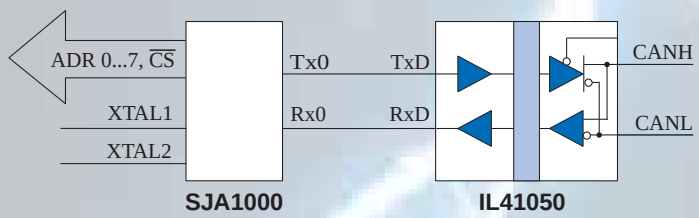


Multi-Channel Isolated Sampling A/D Converter Using IL261

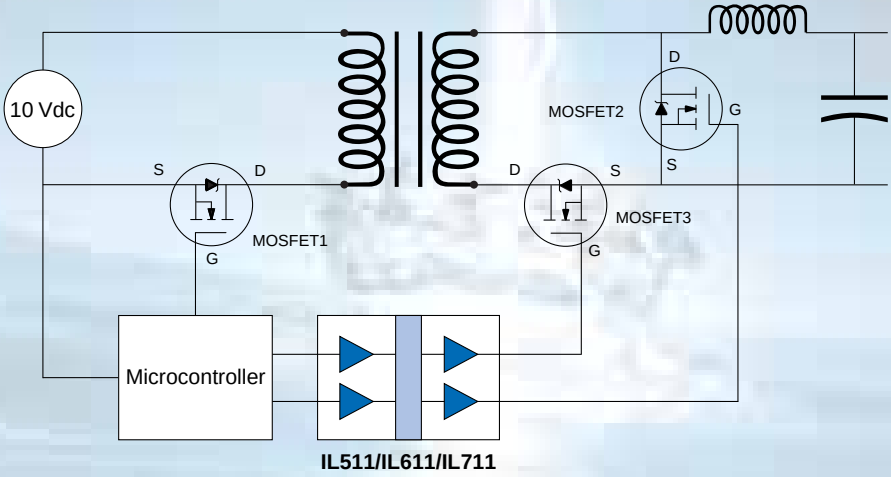
The IL261 is ideal for isolating multi-channel sampling ADCs. Isolated channels A0 and A1 control the analog channel being sampled, while the three remaining I/O lines on the IL261 isolate the SPI interface.

Visit **www.IsoLoop.com** for more illustrative IsoLoop Isolator applications.

Illustrative Applications



Isolated CAN Using the IL41050 and an SJA1000 MCU
Isolation increases the noise immunity of CAN nodes, even battery-powered nodes. Inductive drives and inverters can produce transient swings in excess of 20 kV/µs. Traditional, non-isolated CAN nodes provide some protection from differential signaling and symmetrical driver/receiver pairs, but the IL41050 typically more doubles the dV/dt protection of traditional nodes.



Intelligent DC-DC Converter With Synchronous Rectification
A typical primary-side controller would use an IL511, IL611 or IL711 to drive the synchronous rectification signals from primary side to secondary side. Isolator pulse-width distortion as low as 0.3 ns typical minimizes MOSFET dead time and maximizes system efficiency. Ultra-small isolator packages (including two-channel MSOP-8s), allow the designer to squeeze more into less board area.

Visit **www.IsoLoop.com** for more illustrative IsoLoop Isolator applications.

NVE CORPORATION

About NVE

An ISO 9001 Certified Company

NVE Corporation manufactures innovative products based on unique spintronic Giant Magnetoresistive (GMR) technology. Products include Digital Signal Isolators, Isolated Bus Transceivers, Magnetic Field Sensors, Magnetic Field Gradient Sensors (Gradiometers), and Digital Magnetic Field Sensors.

NVE pioneered spintronics and in 1994 introduced the world's first products using GMR material, a line of ultra-precise magnetic sensors for position, magnetic media, gear speed and current sensing.

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Worldwide Distribution
NVE has a worldwide network of expert distributors ready to assist you. Visit the "Isolator Sales" section of www.nve.com for the nearest distributor.

On the Cover
IsoLoop Isolation Products help make a digital world practical. Approximately 750 actual-size IsoLoop MSOP Isolators form the image on the front and back spine of this catalog. NVE is the leader in MSOP isolators with a full line of part types and configurations.

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