NVE CORPORATION

Sensor and Isolator NEWS

May 2015 *Electrifying News From NVE*

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New Products

SMPS Demo Boards (see story at right)

2.5 kV MSOP Isolators

Document Updates

Isolation Products Short-Form Catalog Rev. R (includes 2.5 kV MSOP and QSOP Isolators)

Reference Designs

Microchip included an NVE IL721-3E isolator to isolate a USB 2.0 protocol convertor in its new Power Monitor PICtail Evaluation Board.

Download Microchip Eval Board User's Guide >

Switch Mode Power Supply Demo Boards

Working demo boards show how NVE's unique MSOP Isolators can shrink Switch Mode Power Supplies, increase efficiency, and improve reliability.

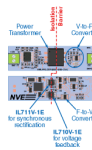
In these demonstrators, Isoloop® Isolators isolate the synchronous rectification MOSFETs and the error voltage feedback signal.

Two versions are available. SMPS1 boards use an IL610-1 failsafe isolator in the error voltage feedback circuitry for simplicity with 1 kV of isolation.

SMPS2 uses a new IL710V-1 MSOP 2.5 kV isolator to provide a board rated at a full 2.5 kV isolation.

Features of both demo boards are:

- MSOP isolators for high density
- Fully isolated
- Input voltage: 11 – 14 V
- Output voltage: 3.3 V
- Output current: 750 mA
- Switching frequency: 130 kHz
- Approx. one square inch boards



SMPS2 Demo Board (actual size)

SMPS demo boards are in stock for immediate delivery.

Download the SMPS1 Manual >
Download the SMPS2 Manual >

Buy Online $9.95 shipping

Upcoming Exhibitions

Embedded Systems Expo & Conference (ESEC), May 13 - 15, Tokyo, Japan.

ESEC

NVE sensors and isolators will be on display in cooperation with distributor KKRocky, and there will be a live demonstration of the precision and low power of NVE's unique AAT-Series angle sensors.

Power Conversion and Intelligent Motion (PCIM), May 19 - 21, Nürnberg, Germany.

PCIM

NVE Isolators will be on display at the HY-LINE Power booth and sensors will be at the IS-LINE booth. Unique featured products will include True 8 ™ high-voltage isolators and QSOP CAN and RS-485 isolated transceivers.
More Information >
Download Free Registration Coupon Courtesy HY-LINE Power >

Sensor+Test 2015, May 19 - 21, Nürnberg, Germany.

NVE sensors will be on display in cooperation with distributor IS-LINE. NVE engineers will meet customers and answer questions.
Free Pass Courtesy IS-LINE >

Application Tip

Extending IL600-Series Isolator Input Range

IsoLoop® IL600-Series Passive-Input Isolators are popular in Programmable Logic Controllers because, unlike other isolators, they provide channel-to-channel isolation and accommodate a wide range of input voltage.

Typically, the Isolators are driven with a resistor in series with the input coil. The typical minimum input current to activate the isolator is 5 mA, and the absolute maximum DC coil current is 25 mA. This provides a 5:1 input range, although it's a bit less in practice after allowing for component tolerances, temperature variations, etc.

But more input range is sometimes needed.

Designers have used two methods to extend the Isolators' input range: a diode in parallel with the input coil, or a Current Limiting Diode (CLD) in series.

The first method is illustrated as follows:

The 3.3 kilohm resistors ensure at least 5 mA of coil current for 20 volt inputs. The diodes limit the coil voltages to approximately 0.7 volts, providing 22 mA coil current at the 31 ohm minimum coil resistance over the temperature range, and 5.5 mA at the 128 ohm maximum coil resistance. Thus the coil current is between the 5 mA maximum input threshold (with a 5 volt supply) and the 25 mA Absolute Maximum coil current. This method allows very high input voltages, although the drive current can be high.

Another option uses Current Limiting Diodes (CLDs):

The CLDs limit the coil currents to less than the Absolute Maximum of 25 mA, and also limit loading of the input sources. The isolator will switch with an input voltage as low as approximately 1 volt, and the voltage can go as high as the CLD peak operating voltage of 45 volts. This provides more than a 40:1 input range.

Thanks to NVE customer ***Luis Rios*** *for the CLD design tip!*

Download IL600-Series Product Datasheet >