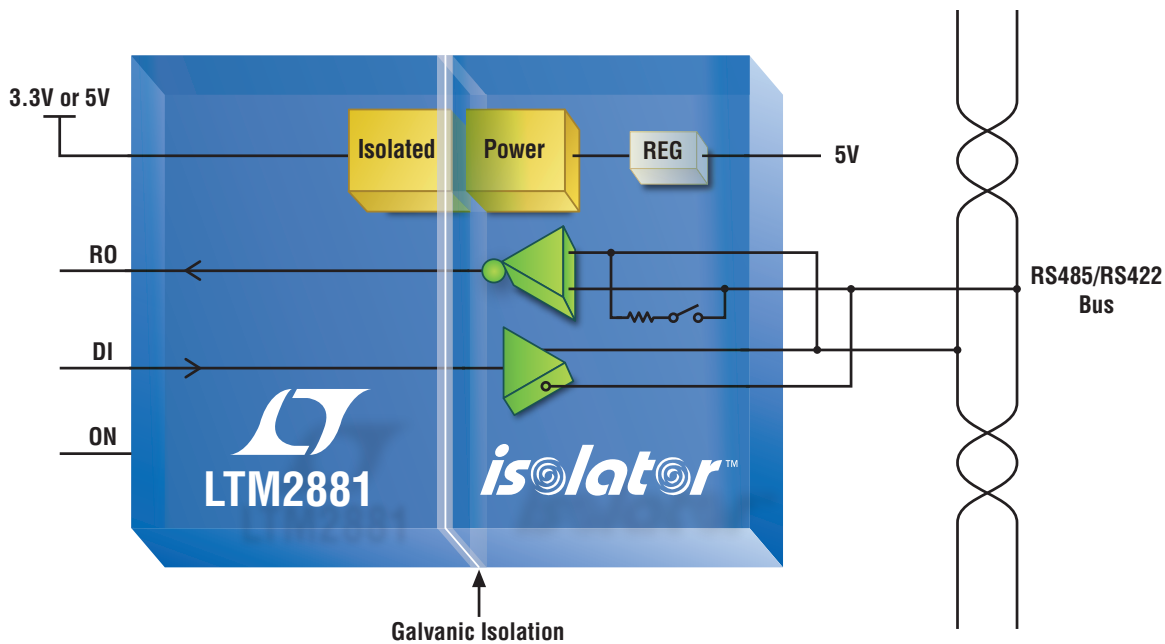



# Isolated RS485 + 1W Power



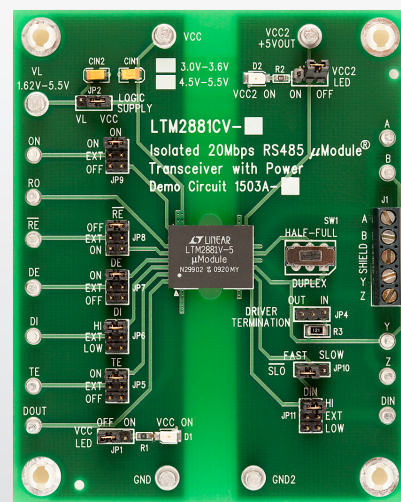
## Complete 20Mbps $\mu$ Module<sup>®</sup> Transceiver Includes 2500V<sub>RMS</sub> Isolated Power—No External Components Required

The LTM<sup>®</sup>2881 is an isolated RS485 transceiver that guards against large ground-to-ground differentials. The LTM2881's internal inductive isolation barrier breaks ground loops by isolating the logic level interface and line transceiver. An onboard DC/DC converter provides power to the transceiver with an isolated 5V supply output for powering additional system circuitry. With 2500V<sub>RMS</sub> galvanic isolation, onboard secondary power and a fully compliant RS485 transmitter and receiver, the LTM2881 requires no external components and provides a small, complete  $\mu$ Module solution for isolated serial data communications.

### Features

- Isolator  $\mu$ Module Technology
- Isolated RS485/RS422 Transceiver: 2500V<sub>RMS</sub>
- UL Recognized  File #E151738
- Integrated Isolated, 1W DC/DC Converter
  - Good Efficiency (up to 62%)
  - Low EMI
- 3.3V or 5V Input Supply Voltage (LTM2881-3/LTM2881-5)
- 20Mbps or Low EMI 250kbps Data Rate
- High ESD:  $\pm 15$ kV HBM
- Common Mode Transient Immunity:  $>30$ kV/ $\mu$ s
- Integrated Selectable 120 $\Omega$  Termination
- Small Footprint, Low Profile (11.25mm  $\times$  15mm  $\times$  2.8mm) in Surface Mount LGA & BGA Packages

### LTM2881 Demo Board



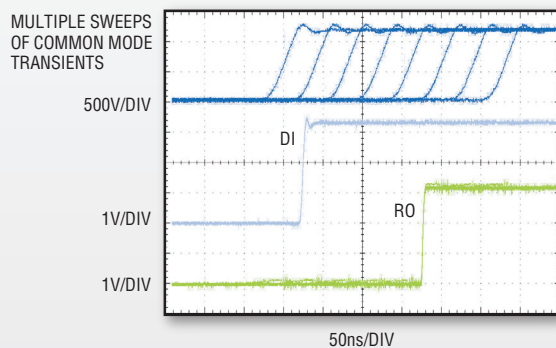
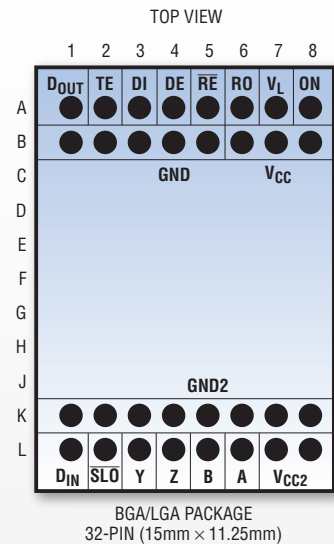
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## Isolated $\mu$ Module Technology

To achieve greater than  $2500V_{RMS}$  isolation, the LTM2881 utilizes Isolator  $\mu$ Module Technology, which uses coupled signal inductors embedded in the  $\mu$ Module substrate. This technique ensures consistent ruggedness and reliability, and will be certified by UL, CSA and IEC to guarantee the isolation barrier's effectiveness. The  $\mu$ Module package integrates several technologies to deliver a cost-effective, advanced solution that minimizes board space and improves electrical and thermal performance.



*isolator™*

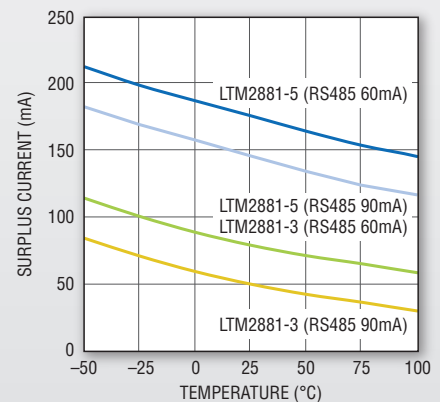
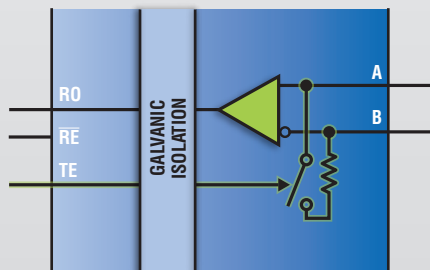


## Common Mode Transient Immunity

Unlike other isolated solutions, the LTM2881 allows communication through common mode transient events, greater than  $30kV/\mu s$ , unaffected by the transient and without introducing any priority data jitter or data corruption.

## Isolated Supply Voltage Output

The LTM2881 is not only self-powered, but also provides a well regulated 5V, up to 1W, isolated supply for powering any supporting components on the isolated bus side. This regulated power is continuously available over the operating temperature range, even while driving full RS485 compliant signal levels.



## Integrated Selectable 120 $\Omega$ Termination

A pin-selectable 120 $\Omega$  termination is available for minimizing reflections that may be present on an unterminated transmission line. RS485 networks require 120 $\Omega$  termination resistors to be installed by the end-user based on the physical layout of the twisted-pair wires and the placement of the nodes. The LTM2881's pin-selectable termination allows the proper nodes to be terminated by switching the integrated termination on or off, under software control, without the need for physical intervention by the user.