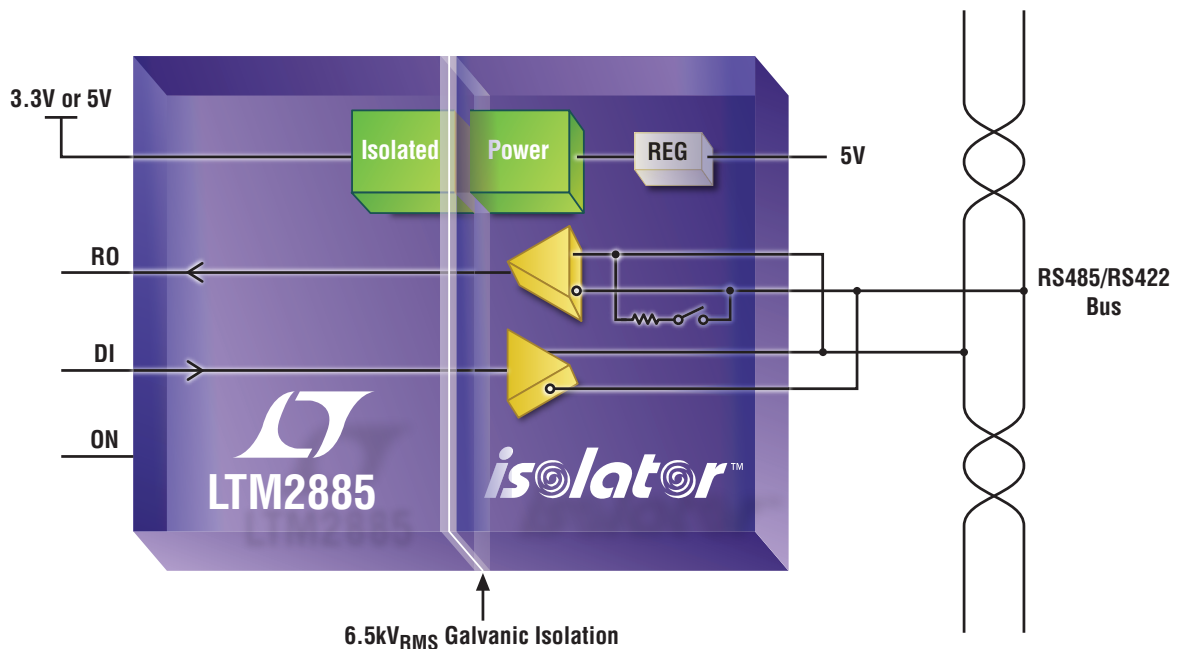


# 6.5kV Isolated RS485 + 1W Power



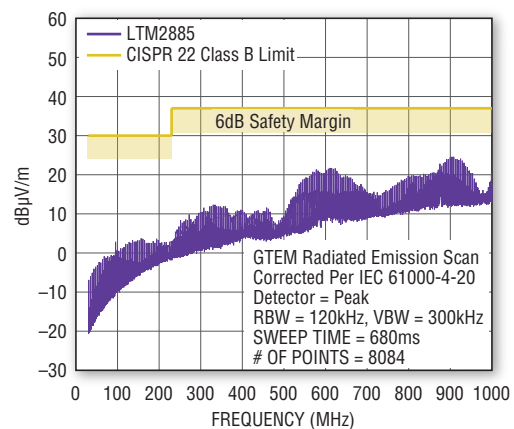
## Complete 20Mbps $\mu$ Module Transceiver Includes 6500V<sub>RMS</sub> Isolated Power No External Components Required

The LTM<sup>®</sup>2885 is an isolated RS485 transceiver that guards against large ground-to-ground differentials. The LTM2885'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 6500V<sub>RMS</sub> galvanic isolation, onboard secondary power and a fully compliant RS485 transmitter and receiver, the LTM2885 requires no external components and provides a small, complete  $\mu$ Module<sup>®</sup> solution for isolated serial data communications.

### Features

- Isolator  $\mu$ Module Technology
- Isolated RS485/RS422 Transceiver: 6500V<sub>RMS</sub>
- Reinforced Insulation
- 14.6mm Creepage and Clearance
- Integrated Isolated, 1W DC/DC Converter
  - 5V at Up to 200mA
  - Low EMI
- Integrated Selectable 120 $\Omega$  Termination
- Differential Output Voltage > 2.1V into 54 $\Omega$   
Supports PROFIBUS Applications
- 20Mbps or Low EMI 250kbps Data Rate
- High ESD:  $\pm$ 15kV HBM
- Common Mode Transient Immunity: >50kV/ $\mu$ s
- Maximum Continuous Working Voltage: 690V<sub>RMS</sub>
- Small Footprint (22mm  $\times$  9mm  $\times$  5.16mm)  
in Surface Mount BGA Package

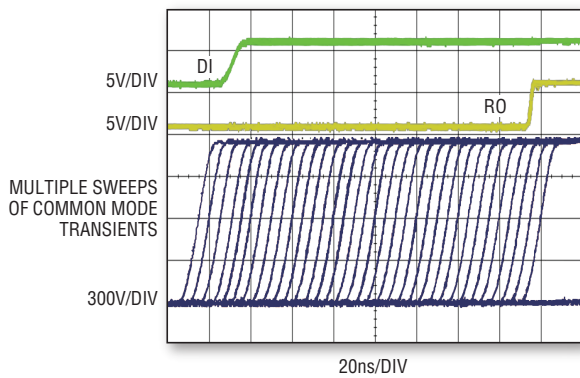
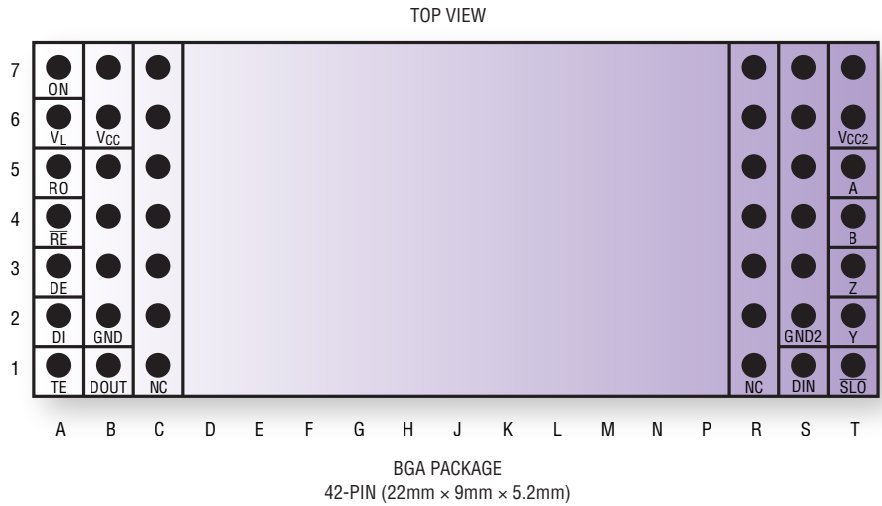
### EMI Performance Chart



Measured on LTM2885 Demo Circuit 1794A  
Driver Terminated  $R_{TERM} = 120\Omega$

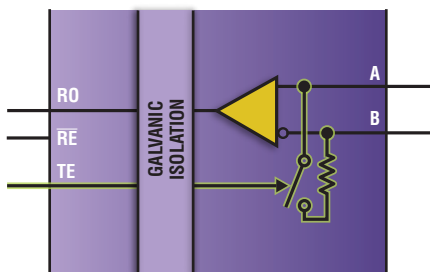
## Isolated $\mu$ Module Technology

To achieve greater than  $6500V_{RMS}$  isolation, the LTM2885 utilizes Isolator  $\mu$ Module technology, which includes coupled signal inductors embedded in the  $\mu$ Module substrate. This technique ensures consistent ruggedness and reliability, and will be certified by UL and CSA 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.



## Isolated Supply Voltage Output

The LTM2885 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 LTM2885'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 of physical intervention by the user.

## Common Mode Transient Immunity

Unlike other isolated solutions, the LTM2885 allows communication through common mode transient events, greater than 50kV/ $\mu$ s, unaffected by the transient and without introducing any priority data jitter or data corruption.

