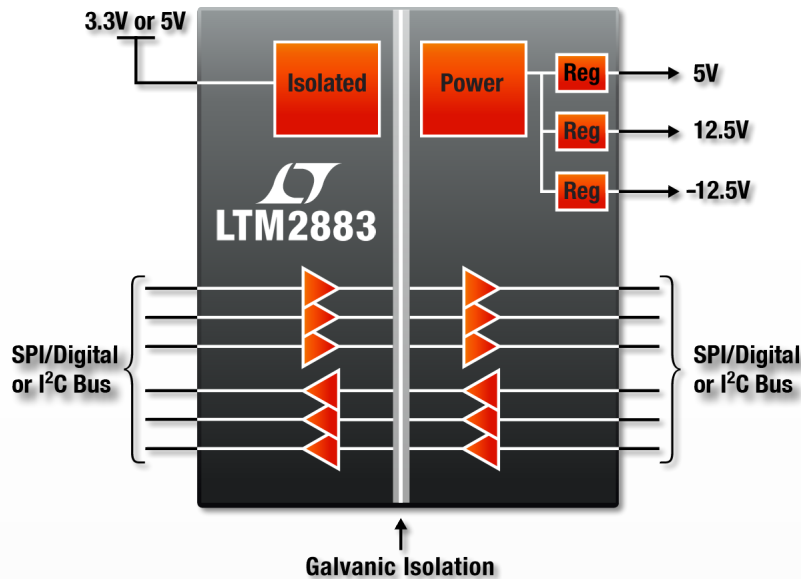



SPI/Digital or I²C μModule Isolators + Power



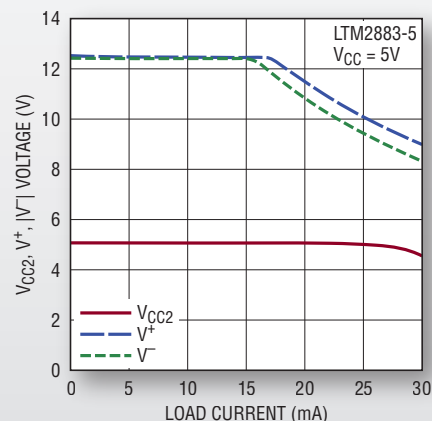
Complete Isolated Digital Interface with Three Isolated Power Rails— No External Components Required

The LTM[®]2883 is a complete digital μModule[®] galvanic isolator. The LTM2883's internal inductive isolation barrier breaks ground loops by isolating the logic level interface for SPI, I²C or general purpose I/O. An onboard DC/DC converter provides power to the internal communications interface and to three adjustable isolated power supply outputs, nominally 5V, 12.5V and -12.5V. Each supply can be adjusted from its nominal value using a single external resistor. The LTM2883's 2500V_{RMS} isolation, onboard secondary power, digital communications interface and guaranteed uninterrupted communication through common mode transients greater than 30kV/μs, provides a simple, highly integrated μModule solution for isolated serial data communications.

Features

- 6-Channel Logic Isolator: 2500V_{RMS}
- UL Recognized  File #E151738
- Isolated Adjustable DC Power:
 - 3V to 5V at Up to 30mA
 - ±12.5V at Up to 25mA
- No External Components Required
- High Speed Logic Isolation:
 - 10MHz Digital (LTM2883-S)
 - 4MHz Full Duplex SPI (LTM2883-S)
 - 400kHz I²C (LTM2883-I)
- High Common Mode Transient Immunity: 30kV/μs
- 3.3V (LTM2883-3) or 5V (LTM2883-5) Operation
- 1.62V to 5.5V Logic Supply
- ±10kV ESD HBM Across the Isolation Barrier
- Common Mode Working Voltage: 560V_{PEAK}
- Low Current Shutdown Mode (<10μA)
- 15mm × 11.25mm BGA Package

Isolated Supplies vs Equal Load Current



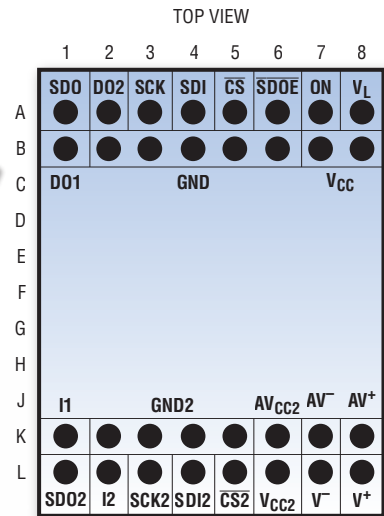
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Isolated μ Module Technology

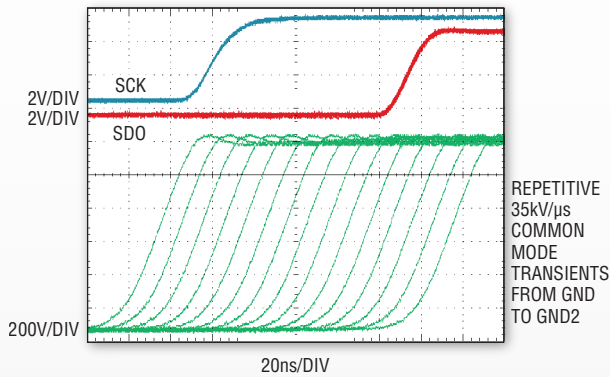
To achieve greater than $2500V_{RMS}$ isolation, the LTM2883 utilizes Isolator μ Module technology, which uses coupled signal inductors embedded in the μ Module substrate. This technique ensures consistent ruggedness and reliability, and will be certified by UL, CSA and IEC. The μ Module package integrates several technologies to deliver a cost-effective, advanced solution that minimizes board space and improves electrical and thermal performance.



isolator™



BGA PACKAGE
32-PIN (15mm × 11.25mm × 3.42mm)



*LTM2883-S "ROUNDRIP" CONFIGURATION
SCK2 OUTPUT CONNECTED TO SDO2 INPUT

Common Mode Transient Immunity

Unlike other isolated solutions, the LTM2883 allows communication through common mode transient events greater than $30kV/\mu s$, unaffected by the transient and avoiding any priority data jitter or data corruption. The system also includes data refresh, error checking and safe shutdown for truly robust digital communications.

EMI Performance: LTM2883 vs Competitor A

