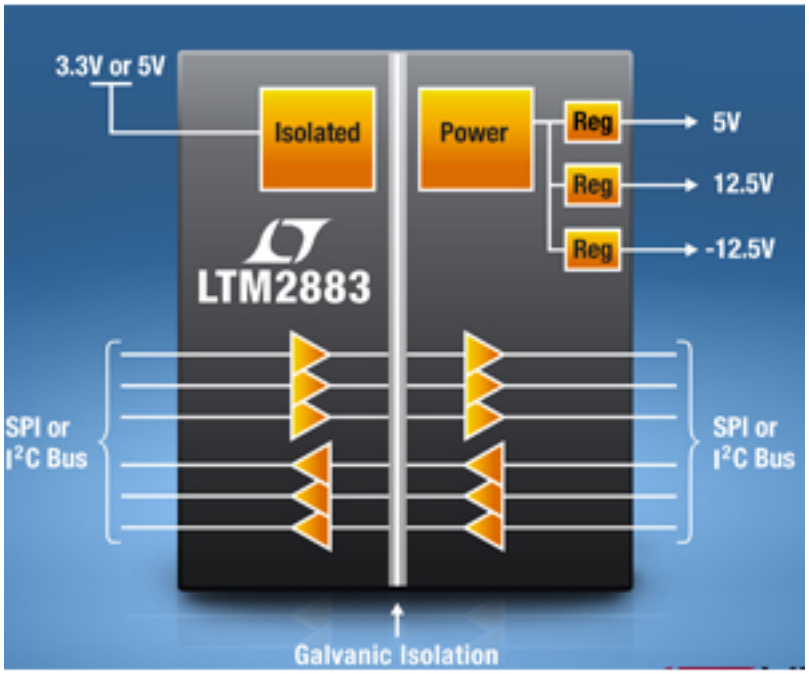
SPI/digital or I²C µModule isolator provides three isolated power rails



Linear Technology Corporation introduces the LTM2883 [1], a 6-channel SPI/Digital or I²C digital µModule isolator with triple rail regulated power for 3.3V and 5V systems. In industrial systems applications, ground potentials can vary widely, often exceeding the tolerable range, which can interrupt communications or even destroy components. The LTM2883 breaks ground loops by electrically separating communications signals, isolating the logic level interface on each side of an internal inductive isolation barrier that withstands a very large common-mode voltage range up to 2,500VRMS. The LTM2883's low EMI isolated DC-DC converter powers the communications interface and provides adjustable 5V, +12.5V, and -12.5V supply outputs, ideal for powering data converters in data acquisition systems. With 2,500VRMS of galvanic isolation, onboard secondary power and a communications interface operating at up to 20Mbps, the LTM2883 requires no external components and provides a simple µModule solution for isolated data communications.

The LTM2883 is available in two communications interface versions. The LTM2883-I is I²C compliant at up to 400kHz with bidirectional serial data (SDA) plus clock (SCL) and three additional isolated CMOS logic signals that operate at up to 20Mbps. The LTM2883-S is SPI compliant and offers a total of six CMOS digital isolator communication channels. All channels operate at up to 20Mbps and include three forward direction signals
(/CS, SCK and SDI) and three reverse direction signals (SDO, DO1 and DO2). When configured for SPI communications, the maximum clock rate is 8MHz for

unidirectional communication or 4MHz for round-trip bidirectional operation.

An onboard 2MHz DC-DC converter powers the LTM2883 and allows each of the three isolated power supply outputs to source up to 20mA over the full operating temperature range. A logic supply pin provides direct interfacing with low voltage microcontrollers down to 1.62V, and an ON pin enables the LTM2883 to be shut down using less than 10µA. Additional features include uninterrupted communications for common mode transients greater than 30kV/µs and rugged ±10kV ESD HBM across the isolation barrier.

The LTM2883 is available in 3.3V or 5V supply voltage versions. The LTM2883 is offered in a 15mm x 11.25mm surface mount BGA package; all integrated circuits and passive components are housed in this RoHS-compliant µModule package. Pricing starts at $11.95 each in 1,000 piece quantities. Please visit www.linear.com/product/LTM2883 [1] for more information.

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Links:
[1] http://r20.rs6.net/tn.jsp?e=001Jj9_UuKuY_LUxyB5a2OstEiRg7ULCC_r_Sxg0c62k39BQ_GNYv1jc2jHUtAPi1XR3KZcL1Aw_1COsMWXgUK9mX2mEs18nCEesBgMCKQpgW7szadODfzoi70U0yH1udkAmqFy69tfpwI=