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$\pm 60\text{V}$ Fault Protected Full-/Half-Duplex 3V to 5.5V RS485 Transceivers Achieve 20Mbps

MILPITAS, CA – December 21, 2011 – Linear Technology Corporation introduces the [LTC2862-2865](#), a family of exceptionally rugged, high voltage tolerant RS485/RS422 transceivers for elimination of field failures without the need of costly external protection devices. In practical RS485 systems, installation cross-wiring faults, ground voltage faults or lightning induced surge voltages can cause overvoltage conditions that exceed absolute maximum ratings of typical transceivers. The LTC2862-2865 feature $\pm 60\text{V}$ overvoltage fault protection on the data transmission lines, protecting bus pins during operation and power shutdown. Whether a circuit is transmitting, receiving, in standby or powered off, the LTC2862-2865 tolerate any voltage within $\pm 60\text{V}$ without damage, increasing the robustness of any typical RS485 network. The low power family supports fast 20Mbps and low-EMI slew-rate-limited 250kbps data rates, as well as half- and full-duplex versions.

The LTC2862-2865 family provides valuable protection and reliability for a wide variety of RS485/RS422 applications, including industrial control, instrumentation networks and automotive electronics. An extended $\pm 25\text{V}$ input common-mode range and full failsafe operation improve data communications reliability in electrically noisy environments and in the presence of ground loop voltages. This extended common-mode range allows the LTC2862-2865 devices to transmit and receive under harsh conditions that would otherwise cause data errors and possible device damage. Enhanced ESD protection allows these devices to withstand $\pm 15\text{kV}$ (HBM and IEC-1000-4-2 air discharge) on the transceiver pins without latchup or damage; all other pins are protected to $\pm 8\text{kV}$ HBM. Fully symmetric receiver thresholds allow the devices to maintain good duty cycle symmetry at low signal levels and boost receiver noise immunity.

The LTC2862-2865 family is offered in commercial, industrial and automotive temperature grades and available in DFN and SO packages with industry-standard pinouts. Pricing starts at \$2.35 each for the 20Mbps half-duplex versions in 1,000 piece quantities.

These devices provide a pin-compatible upgrade path from Linear's half-duplex LT1785 and full-duplex LT1791, 250kbps ±60V fault protected transceivers. For more information, visit www.linear.com/product/LTC2862


Photo Caption: ±60V Fault Protected RS485 Transceiver with ±25V Common-Mode Range

Summary of Features: LTC2862-65

- Protected from Overvoltage Line Faults to ±60V
- 3V to 5.5V Supply Voltage
- 20Mbps or Low EMI 250kbps Data Rate
- ±15kV ESD Interface pins, ±8kV All Other Pins
- Extended Common-Mode Range: ±25V
- Guaranteed Failsafe Receiver Operation
- Supports up to 256 Nodes
- Separate 1.65V to 5.5V Logic Supply Pin (LTC2865)
- Temperature Range: -40°C to 125°C
- Industry-Standard Pinouts

About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, and µModule[®] subsystems.

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