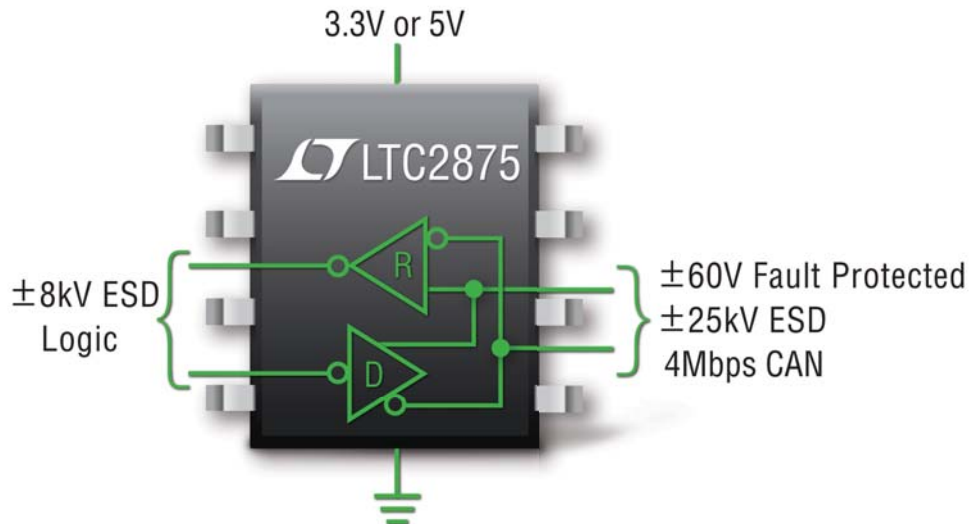


# ±60V Fault Protected 3.3V/5V CAN Transceiver



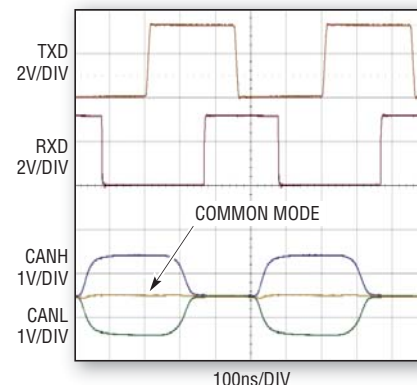
## Robust Communications for Automotive, Industrial and Medical Networks

The LTC<sup>®</sup>2875 is an exceptionally rugged, high voltage tolerant CAN transceiver that helps reduce field failures without the need for costly external protection devices. ±60V overvoltage fault protection on the data transmission lines protects bus pins during operation and shutdown, while an extended ±36V input common mode range improves data communication reliability in electrically noisy environments and in the presence of ground loop voltages. Enhanced ESD protection allows the LTC2875 to withstand ±25kV HBM on the transceiver pins without latchup or damage; all other pins are protected to ±8kV HBM.

### Features

- Protected from Overvoltage Line Faults to ±60V
- 3.3V or 5.5V Supply Voltage
- High Speed Operation up to 4Mbps
- ±25kV ESD Interface Pins, ±8kV All Other Pins
- Active Symmetry Driver with Variable Slew Rate and SPLIT Pin for Low Electromagnetic Emission EME
- Extended Common Mode Range (±36V)
- Transmit Data (TXD) Dominant Timeout Function
- Micropower Shutdown Mode
- ISO 11898-2 Compliant
- DeviceNet Compatible
- MP-Grade Option Available (-55°C to 125°C)
- 3mm x 3mm DFN-8 and SO-8 Packages

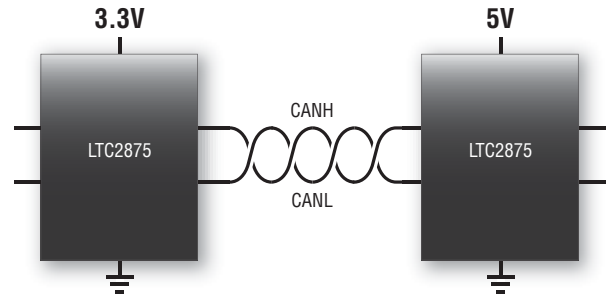
LTC2875 Transmitting at 4Mbps from a 3.3V Supply



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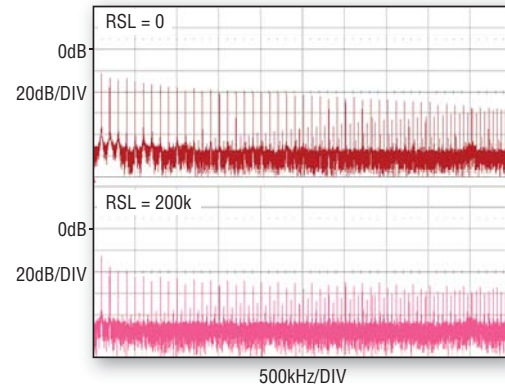
### 3.3V or 5V Operation

The LTC2875 can be powered from either a 3.3V or 5V rail, which is very useful in low power applications where a 5V rail may not be present. A 3.3V powered LTC2875 may interoperate with 5V-powered CAN transceivers on the same bus.



### Low EME

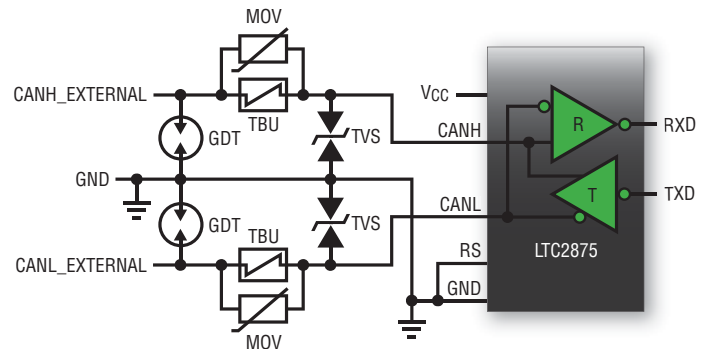
The electromagnetic emissions (EME) spectrum of a differential line transmitter is largely determined by the variation in the common mode voltage during switching. The LTC2875 employs a low EME driver with a maximum symmetry of  $\pm 500\text{mV}$  and a transmit data dominant (TXD) timer that prevents faulty controllers from clamping the bus. Optional split termination provides further reduction of EME by dividing the single line-end termination resistor (nominally  $120\Omega$ ) into two series resistors of half value.



**Power Spectrum of Common Mode Voltage Showing High Frequency Reduction of Lowest Slew Rate (RSL = 200k) Compared to Highest Slew Rate (RSL = 0).**

### Extended IEC Protection

$\pm 60\text{V}$  tolerance is easily extended to higher levels of protection and makes extremely robust applications possible. This network provides the highest specified level of IEC protection (Level 4) against lightning surge, electrical fast transients (EFT) from switching high current inductive loads, and electrostatic discharge (ESD).



### DeviceNet Compatible

DeviceNet is a network standard based on the CAN bus and places requirements on the transceiver that exceed those of the ISO 11898-2 standard. The LTC2875 meets or exceeds the following ISO 11898-2 and DeviceNet requirements:

Parameter	ISO-11898-2 Requirement	DeviceNet Requirement	LTC2875
Number of Nodes	N/A	64	166
Minimum Differential Input Resistance	10k $\Omega$	20k $\Omega$	50k $\Omega$
Differential Input Capacitance	10pF (Nom)	24pF (Max)	8.4pF (Typ)
Bus Pin Voltage Range (Survivable)	-3V to 16V (for 12V Battery)	-25V to 18V	-60V to 60V
Bus Pin Voltage Range (Operation)	-2V to 7V	-5V to 10V	-36V to 36V ( $V_{CC} = 5\text{V}$ ) -25V to 25V ( $V_{CC} = 3.3\text{V}$ )
Connector Mis-Wiring Tests, All Pin-Pin Combinations	N/A	$\pm 18\text{V}$	$\pm 60\text{V}$