

# ADM483E ±15 kV ESD Protected, EMC Compliant Slew Rate Limited, EIA RS-485 Transceiver

## Product Description

The ADM483E is a robust, low power differential line transceiver suitable for communication on multipoint bus transmission lines. Internal protection against electrostatic discharge (ESD), electrical fast transient (EFT) and electromagnetic immunity (EMI) allows operation in electrically harsh environments. ESD protection on the I-O lines meets ±15 kV when tested using the Human Body Model. EFT protection meets ±2 kV in accordance with IEC1000-4-4, while EMI immunity is in excess of 10 V/m meeting IEC1000-4-3.

The level of unwanted emissions is also carefully controlled using slew limiting on the driver outputs. This reduces reflections with improperly terminated cables and also minimizes electromagnetic interference. The controlled slew rate limits the data rate to 250 kbps.

The ADM483E is intended for balanced data transmission and complies with both EIA Standards RS-485 and RS-422. It contains a differential line driver and a differential line receiver and is suitable for half duplex data transmission, as the driver and receiver share the same differential pins.

The input impedance on the ADM483E is 12 k Ohms, allowing up to 32 transceivers on the bus.

The ADM483E operates from a single +5 V ± 10% power supply. Excessive power dissipation caused by bus contention or by output shorting is prevented by a thermal shutdown circuit. This feature forces the driver output into a high impedance state if, during fault conditions, a significant temperature increase is detected in the internal driver circuitry.

The receiver contains a fail-safe feature that results in a logic high output state if the inputs are unconnected (floating).

The ADM483E is fabricated on BiCMOS, an advanced mixed technology process combining low power CMOS with robust bipolar technology.

It is fully specified over the industrial temperature range and is available in 8-lead DIP and SOIC packages.

### Specifications

|                    |           |
|--------------------|-----------|
| ESD-Protection     | 15 kV     |
| Pwr Supply (Vnom)  | +5        |
| Data Rate          | 250kbps   |
| Full-Half Duplex   | Half      |
| # of Nodes On Bus  | 32        |
| Drvrr/Rcvr Enable  | Yes       |
| Fail Safe          | Open      |
| Isolated RS-485    | ---       |
| Available Packages | DIP, SOIC |

### Functional Block Diagram

