

## DS75176A/DS75176AT Multipoint RS-485/RS-422 Transceivers

### General Description

The DS75176A is a high speed differential TRI-STATE® bus/line transceiver designed to meet the requirements of EIA standard RS485 with extended common mode range (+12V to -7V), for multipoint data transmission. In addition it meets the requirements of RS422.

The driver and receiver outputs feature TRI-STATE capability, for the driver outputs over the entire common mode range of +12V to -7V. Bus contention or fault situations that cause excessive power dissipation within the device are handled by a thermal shutdown circuit, which forces the driver outputs into the high impedance state.

The receiver incorporates a fail safe feature which guarantees a high output state when the inputs are left open.

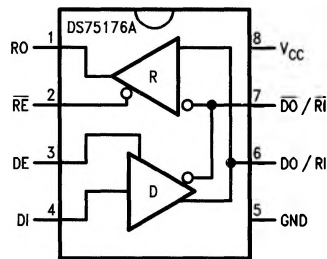
Both AC and DC specifications are guaranteed over the 0 to 70°C temperature and 4.75V to 5.25V supply voltage range.

### Features

- Meets EIA standard RS485 for multipoint bus transmission and RS422.
- Small Outline (SO) Package option available for minimum board space.

- 22 ns driver propagation delays with 8 ns skew (typical).
- Single channel per package isolates faulty channels (from shutting down good channels).
- Single +5V supply.
- -7V to +12V bus common mode range permits  $\pm 7V$  ground difference between devices on the bus.
- Thermal shutdown protection.
- Power-up down glitch-free driver outputs permit live insertion or removal of transceivers.
- High impedance to bus with driver in TRI-STATE or with power off, over the entire common mode range allows the unused devices on the bus to be powered down.
- Pin out compatible with DS3695 and SN75176A.
- Combined impedance of a driver output and receiver input is less than one RS485 unit load, allowing up to 32 transceivers on the bus.
- 70 mV typical receiver hysteresis.

### Connection and Logic Diagram



Top View

TL/F/8759-1

Order Number DS75176AN, DS75176AM,  
DS75176AJ-8, DS75176ATN  
See NS Package Number N08E, M08A or J08A