3.3V RS-485/RS-422 Transceivers

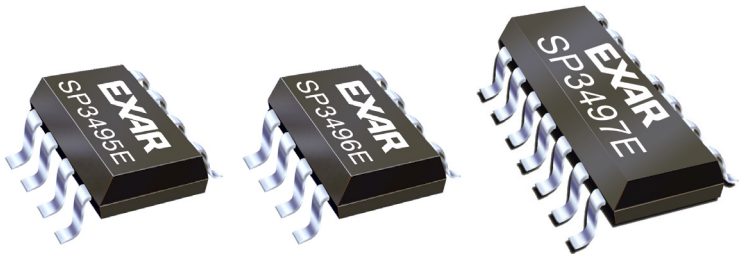
SP3495E / SP3496E / SP3497E

High Speed, 3.3V RS-485/RS-422 Transceivers
15kV ESD protection and Advanced Fail-safe

SP3495E – SP3497E transceivers are suitable for high speed communication on multipoint or multidrop bus transmission lines. They are designed for balanced data transmission and comply with both RS-485 and RS-422 EIA Standards. Each device contains one differential driver and one differential receiver. Driver differential outputs and receiver differential inputs are connected internally to form a half-duplex input/output to the RS-485 bus. Separate RE and DE pins enable and disable the driver and receiver independently or may be externally connected together as a direction control. The device enters a low power shutdown mode if both driver and receiver are disabled. The bus-pin outputs of disabled or powered down devices are in high impedance state. The high impedance driver output is maintained over the entire common-mode voltage range from -7 to +12V.

SP3495E – SP3497E operates from a single 3.3 V power supply. The transceivers load the data bus only half as much as standard RS-485 unit load. This allows up to 64 devices to be connected simultaneously on a bus without violating required RS-485 signal margin and without using repeaters. Only one driver should be enabled and active at any time on a shared bus. Excessive power dissipation caused by bus contention or by shorting outputs to ground or a voltage source is prevented by short circuit protection and thermal shutdown. This feature forces the driver output into high impedance state if the absolute value of the output current exceeds 250mA or if junction temperature exceeds 165°C.

Receivers will fail-safe to a logic-one output state if the inputs are unconnected (floating), shorted or terminated data lines. All inputs and outputs have ESD protection. All RS-485 input and output bus pins are ESD protected up to ±15kV Human Body Model.



Major Features

- 3.3V Single Supply Operation
- High Speed Up to 32 Mbps
- ±15kV ESD Protection
- Advanced Fail-safe
- Hot Swap Glitch Protection
- Half Unit Load, 64 Transceivers on the Bus
- Driver Short Circuit Protection
- Thermal Shutdown Overload Protection
- Industry Standard Pin Out

Ordering Information

Part #	Pb-free	Tape / Reel	Temperature range	Package Type
SP3495EEN	-L	/TR	-40 to +85°C	8 pin SO-narrow
SP3496EEN	-L	/TR	-40 to +85°C	8 pin SO-narrow
SP3497EEN	-L	/TR	-40 to +85°C	14 pin SO-narrow

Applications

- Factory Automation Control
- Industrial Process Control
- High Speed Motor Control
- Building Automation and Environmental Controls
- Building Security Systems
- Remote Metering and Monitoring

Typical Application Circuit