

±18K ESD Protection, RS-485 Transceiver

■ Description

The **RS485** is 4.5V~5.5V powered transceivers that meet the RS-485 and RS-422 standards for balanced communication. Driver outputs and receiver inputs are protected against ±18 kV ESD strikes without latch-up.

Transmitters in this family deliver exceptional differential output voltages as 2.5V (min) in 5Vcc power supplier, into the RS-485 required 54Ω load, for better noise immunity. These devices have very low bus currents so they present a true “1/8 unit load” to the RS-485 bus. This allows up to 256 transceivers on the network without using repeaters. Receiver(RX) inputs feature a “Full Fail-Safe” design, which ensures a logic high Rx output if Rx inputs are floating, shorted, or on a terminated but undriven bus.

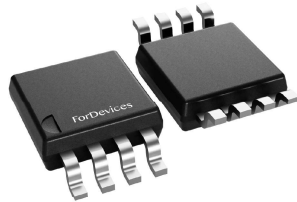
The RS485 is available in an SOP-8L package, and is characterized from -40°C to 125°C.

■ Features

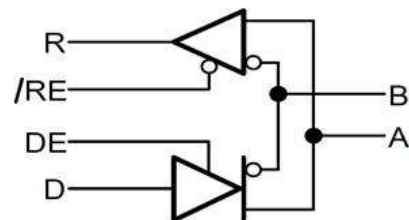
- Exceeds Requirements of EIA-485 Standard
- Data Rate: 500kbps
- Support Failsafe function
- Low Power Consumption: <1.0μA Standby Supply Current
- Large Receiver Hysteresis: 60mV
- Up to 256 Nodes on a Bus (1/8 unit load)
- Wide Supply Voltage 4.5V to 5.5V
- SOP8 Package for Backward Compatibility
- Bus-Pin Protection:
- ±18kV HBM protection
- ±12kV IEC61000-4-2 Contact Discharge

■ Applications

- E-Metering Networks
- HVAC Systems
- Video Surveillance Systems
- DMX512-Networks



■ Simplified Schematic

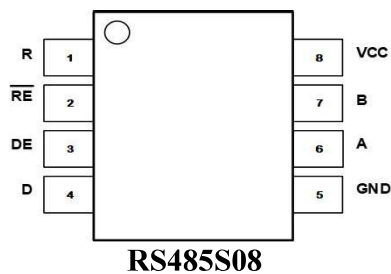


■ Order Information

Model Name	Order Number	Package	Quantity	Top Mark
RS485	RS485S08	8-Pin SOP (SOP-8L)	Tape and Reel 4,000PCS	*485* ** **

- RS485 devices are Pb-free and RoHS compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.

■ Pin Configuration



■ Pin Functions

Pin No.	Pin Name	I/O	Description
1	RO	Digital output	Receiver Output.
2	/RE	Digital input	Receiver Output Enable.
3	DE	Digital input	Driver Output Enable.
4	DI	Digital input	Driver Input.
5	GND	Ground	Ground.
6	A	Bus input/output	Noninverting Receiver Input A and Noninverting Driver Output A.
7	B	Bus input/output	Inverting Receiver Input B and Inverted Driver Output B.
8	V _{CC}	Power	Power Supply.

■ Functional Table

DRIVER PIN FUNCTIONS

INPUT	ENABLE	OUTPUTS		DESCRIPTION
		A	B	
NORMAL MODE				
H	H	H	L	Actively drives bus High
L	H	L	H	Actively drives bus Low
X	L	Z	Z	Driver disabled
X	OPEN	Z	Z	Driver disabled by default
OPEN	H	H	L	Actively drives bus High

RECEIVER PIN FUNCTIONS

DIFFERENTIAL INPUT	ENABLE	OUTPUT	DESCRIPTION
NORMAL MODE			
V _{IT+} < V _{ID}	L	H	Receive valid bus High
V _{IT-} < V _{ID} < V _{IT+}	L	?	Indeterminate bus state
V _{ID} < V _{IT-}	L	L	Receive valid bus Low
X	H	Z	Receiver disabled
X	OPEN	Z	Receiver disabled
Open, short, idle Bus	L	H	Out of polarity correction time