

±15kV ESD Protected, 5V, Dual Protocol (RS-232/RS-485) Transceivers; Temperature Range: -40°C to 85°C; Package: 20-SOIC

Manufacturers	Renesas Technology Corp
Package/Case	SOIC-20 Wide
Product Type	Interface ICs
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for ISL81387IBZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

These devices are BiCMOS interface ICs that are user configured as either a single RS-422, RS-485 differential transceiver, or as a dual (2 Tx, 2 Rx) RS-232 transceiver. In RS-232 mode, the on-board charge pump generates RS-232 compliant ±5V Tx output levels, from a supply as low as 4.5V. Four small 0.1µF capacitors are required for the charge pump. The transceivers are RS-232 compliant, with the Rx inputs handling up to ±25V, and the Tx outputs handling ±12V. In RS-485 mode, the transceivers support both the RS-485 and RS-422 differential communication standards. The RS-485 receiver features "full fail-safe" operation, so the Rx output remains in a high state if the inputs are open or shorted together. The RS-485 transmitter supports up to three data rates, two of which are slew rate limited for problem free communications. The charge pump disables in RS-485 mode, thereby saving power, minimizing noise, and eliminating the charge pump capacitors. Both RS-232, RS-485 modes feature loopback and shutdown functions. The loopback mode internally connects the Tx outputs to the corresponding Rx input, which facilitates the implementation of board level self test functions. The outputs remain connected to the loads during loopback, so connection problems (e.g., shorted connectors or cables) can be detected. The shutdown mode disables the Tx and Rx outputs, disables the charge pump if in RS-232 mode, and places the IC in a low current (35µA) mode. The ISL41387 is a QFN packaged device that offers additional functionality, including a lower speed and edge rate option (115kbps) for EMI sensitive designs, or to allow longer bus lengths. It also features a logic supply voltage pin (VL) that sets the VOH level of logic outputs, and the switching points of logic inputs, to be compatible with another supply voltage in mixed voltage systems. The QFN's choice of active high or low Rx enable pins increases design flexibility, allowing Tx/Rx direction control via a single signal by connecting DEN and RXEN together. For a dual port version of these devices, please see the ISL81334, ISL41334 datasheet.

Features

5V powered, user-selectable RS-232 or RS-485, RS-422 interface port (two RS-232 transceivers or one RS-485, RS-422 transceiver)

±15kV (HBM) ESD protected bus pins (RS-232 or RS-485)

True flow-through pinouts simplify board layouts

Pb-Free (RoHS compliant)

Large (2.7V) differential V_{OUT} for improved noise immunity in RS-485, RS-422 networks

Full fail-safe (open/short) Rx in RS-485, RS-422 mode

Loopback mode facilitates board self-test functions

User-selectable RS-485 data rates: 20Mbps

Slew rate limited: 460kbps

Fast RS-232 data rate: up to 650kbps

Low current shutdown mode: 35 μ A

Related Products



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TSSOP-24