

+/-15kV ESD Protected, 5V, Full Fail-Safe, Fractional (1/8) Unit Load, RS-485/RS-422 Transceivers

Manufacturers	<u>Renesas Technology Corp</u>
Package/Case	MSOP-8
Product Type	Interface ICs
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for ISL83088EIUZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

The ISL8308xE are BiCMOS, ESD protected, 5V powered, single transceivers that meet both the RS-485 and RS-422 standards for balanced communication. Each driver output, and receiver input, is protected against $\pm 15\text{kV}$ ESD strikes without latch-up, and unlike competitive products, this Intersil family is specified for 10% tolerance supplies (4.5V to 5.5V). These devices have very low bus currents ($+125\mu\text{A}/-75\mu\text{A}$), so they present a true "1/8 unit load" to the RS-485 bus. This allows up to 256 transceivers on the network without violating the RS-485 specification's 32 unit load maximum, and without using repeaters. For example, in a remote utility meter reading system, individual meter readings are routed to a concentrator via an RS-485 network, so the high allowed node count minimizes the number of repeaters required. Data for all meters is then read out from the concentrator via a single access port, or a wireless link. Receiver (Rx) inputs feature a "Full Fail-Safe" design, which ensures a logic high Rx output if Rx inputs are floating, shorted, or terminated but undriven. The ISL83080E, ISL83082E, ISL83083E, ISL83084E, ISL83085E utilize slew rate limited drivers which reduce EMI, and minimize reflections from improperly terminated transmission lines, or unterminated stubs in multidrop and multipoint applications. Slew rate limited versions also include receiver input filtering to enhance noise immunity in the presence of slow input signals. Hot Plug circuitry ensures that the Tx and Rx outputs remain in a high impedance state until the power supply has stabilized, and the Tx outputs are fully short circuit protected. The ISL83080E, ISL83083E, ISL83084E, ISL83086E are configured for full duplex (separate Rx input and Tx output pins) applications. The half duplex versions multiplex the Rx inputs and Tx outputs to allow transceivers with output disable functions in 8 Ld packages.

Features

Pb-free Available (RoHS Compliant)

RS-485 I/O Pin ESD Protection $\pm 15\text{kV}$ HBM Class 3 ESD Protection (HBM) on all Pins $>7\text{kV}$

Tiny MSOP Packages Save 50% Board Space

Full Fail-safe (Open, Short, Terminated and Floating) Receivers

Hot Plug Circuitry (ISL83080E, ISL83082E, ISL83083E, ISL83085E)

Tx and Rx Outputs Remain Three-state During Power-up/Power-down

True 1/8 Unit Load Allows up to 256 Devices on the Bus

Specified for Single 5V, 10% Tolerance, Supplies

High Data Rates up to 10Mbps

Low Quiescent Supply Current $530\mu\text{A}$ Ultra Low Shutdown Supply Current 70nA

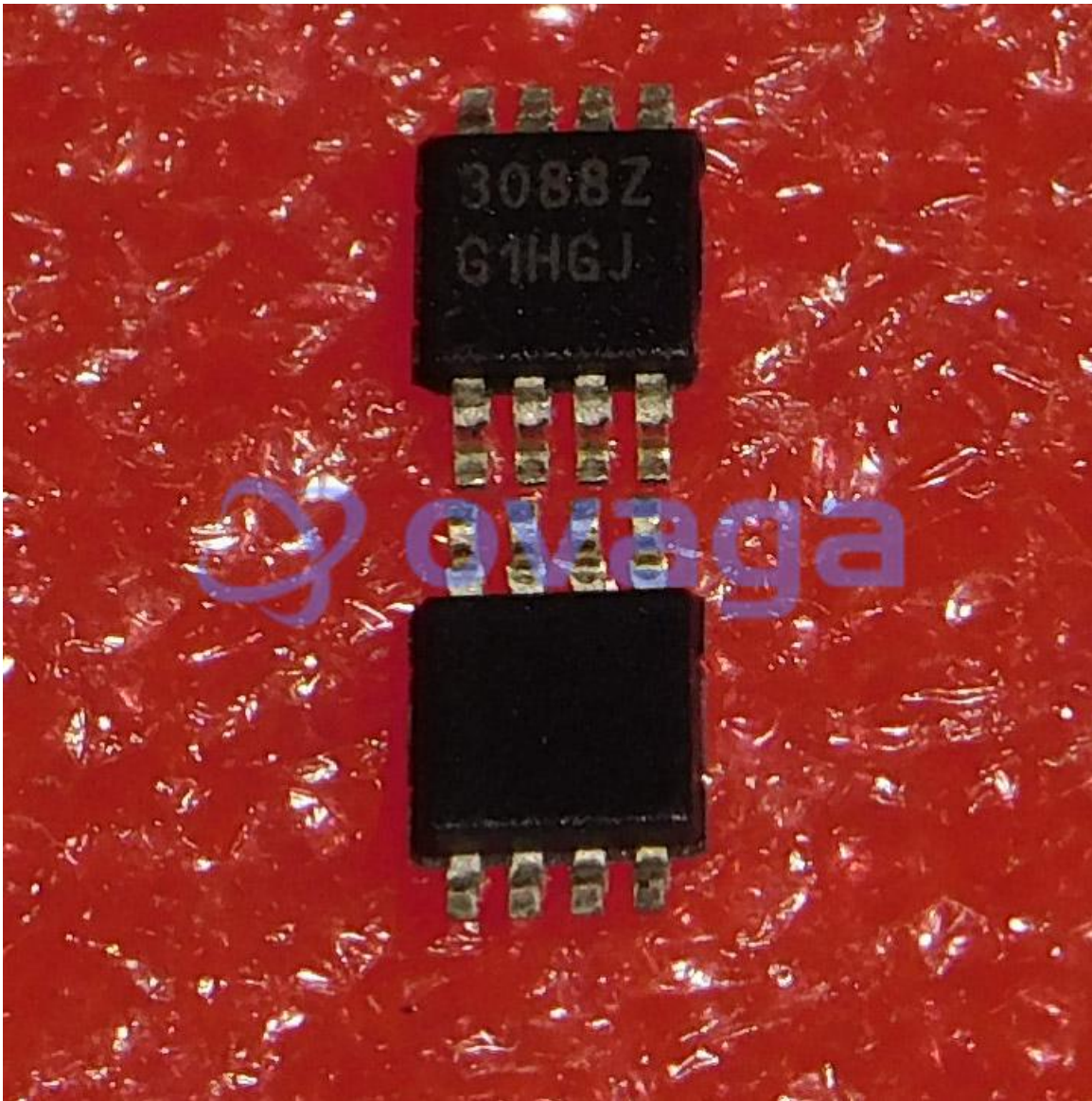
-7V to $+12\text{V}$ Common Mode Input Voltage Range

Half and Full Duplex Pinouts

Three-State Rx and Tx Outputs (Except ISL83084E)

Current Limiting and Thermal Shutdown for driver Overload Protection





Related Products



[ISL83491IBZ](#)

Renesas Technology Corp
SOIC-14



[ISL3170EIUZ](#)

Renesas Technology Corp
MSOP-10



[ISL99227FRZ-T](#)

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[ISL83078EIBZA](#)

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TSSOP-24