Dual Transmitter/Receiver RS-232 Automotive 20-Pin TSSOP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	TSSOP20
Product Type:	Drivers
RoHS:	RoHS Compliant/Lead free RoHS
Lifecycle:	Active

Images are for reference only

Inquiry

General Description

The TRS3223 consists of two line drivers, two line receivers, and a dual charge-pump circuit with ±15-kV ESD protection pin to pin (serial-port connection pins, including GND). The device meets the requirements of TIA/EIA-232-F and provides the electrical interface between an asynchronous communication controller and the serial-port connector. The charge pump and four small external capacitors allow operation from a single 3-V to 5.5-V supply. The device operates at data signaling rates up to 250 kbit/s and a maximum of 30-V/µs driver output slew rate.

Flexible control options for power management are available when the serial port is inactive. The auto-powerdown feature functions when FORCEON is low and $\overline{\text{FORCEOFF}}$ is high. During this mode of operation, if the device does not sense a valid RS-232 signal, the driver outputs are disabled. If $\overline{\text{FORCEOFF}}$ is set low and $\overline{\text{EN}}$ is high, both drivers and receivers are shut off, and the supply current is reduced to 1 µA. Disconnecting the serial port or turning off the peripheral drivers causes auto-powerdown to occur. Auto-powerdown can be disabled when FORCEON and $\overline{\text{FORCEOFF}}$ are high. With auto-powerdown enabled, the device is activated automatically when a valid signal is applied to any receiver input. The $\overline{\text{INVALID}}$ output is used to notify the user if an RS-232 signal is present at any receiver input. $\overline{\text{INVALID}}$ is high (valid data) if any receiver input voltage is greater than 2.7 V or less than –2.7 V, or has been between –0.3 V and 0.3 V for less than 30 µs. $\overline{\text{INVALID}}$ is low (invalid data) if the receiver input voltage is between –0.3 V and 0.3 V for more than 30 µs. See Figure 4 for receiver input levels.

Key Features

Qualified for Automotive Applications

RS-232 Bus-Pin ESD Protection Exceeds ±15 kV Using Human-Body Model (HBM)

Meets or Exceeds the Requirements of TIA/EIA-232-F and ITU v.28 Standards

Operates With 3-V to 5.5-V V_{CC} Supply

Operates up to 250 kbit/s

Two Drivers and Two Receivers

Low Standby Current . . . 1 µA Typical

External Capacitors . . . 4 × 0.1 µF

Accepts 5-V Logic Input With 3.3-V Supply

Recommended For You

PCF8574RGTR	**DS90UB954TRGZTQ1**	**DS90UB954TRGZRQ1**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
QFN16	QFN48	VQFN48
DS90UB947TRGCTQ1	**DS90UB924TRHSTQ1**	**TL16C752BLPTREP**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
VQFN-64	WQFN-48	LQFP-48
TUSB2077APTR	**XTR305IRGWR**	**TL16C752BTPTREP**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
LQFP48	QFN20	LQFP
DS90UB936TRGZTQ1	**DS90UB935TRHBRQ1**	**DS90UB914ATRHSRQ1**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
VQFN48	VQFN-32	WQFN48
DS90UH947TRGCTQ1	**XTR101AP**	**XTR110AG**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
VQFN-64	DIP	DIP