# HT82323
# Modem Buffer Chip

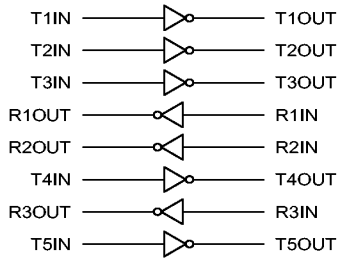
## Features

- Single chip with easy interface between modem and serial port connector
- Five drivers and three receivers meet or exceed the requirements of EIA/TIA-232-D
- Flexible supply voltage range
- ESD protection exceeds 3kV

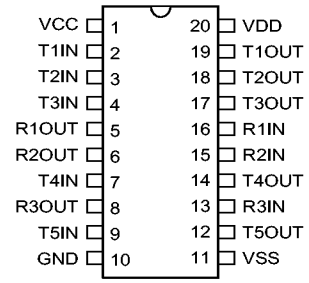
## General Description

The HT82323 is a CMOS device containing five RS-232 line drivers, and three RS-232 line receivers that are used to interface data terminal equipment (DTE) with data circuit-terminating equipment (DCE).

## Block Diagram




## Pin Assignment




**HT82323**
**– 20 DIP/SOP**

## Pin Description

| Pin No. | Pin Name | I/O | Description |
|---|---|---|---|
| 1 | VCC | — | 5V |
| 2~4, 7, 9 | T1~5IN | I | TTL/CMOS transmit inputs |
| 5~6, 8 | R1~3OUT | O | TTL/CMOS receiver outputs |
| 10 | GND | — | Ground |
| 11 | VSS | — | –12V |
| 12, 14, 17~19 | T1~5OUT | O | RS-232 transmit outputs |
| 13, 15~16 | R1~3IN | I | RS-232 receiver inputs |
| 20 | VDD | — | +12V |

## Absolute Maximum Ratings

Supply Voltage (VSS, VDD) .....–12V~12V
Input Voltage Driver .....0V~7V
Output Voltage Driver.....–12V~12V
Supply Voltage (GND, VCC) .....–0.3V~5.5V
Receiver.....–12V~12V

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

## Electrical Characteristics

Ta=25°C

| Symbol | Parameter | Test Conditions | | | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | $V_{DD}$ | $V_{SS}$ | $V_{CC}$ | Conditions | | | | |
| $V_{DD}$ | Positive Power Supply | — | — | — | — | — | 12 | — | V |
| $V_{SS}$ | Negative Power Supply | — | — | — | — | — | –12 | — | V |
| $V_{CC}$ | Positive | — | — | — | — | — | 5 | — | V |
| $V_{IL1}$ | Input Logic Threshold Low (TIN1~5) | 12V | –12V | 5V | — | — | — | 0.8 | V |
| $V_{IH1}$ | Input Logic Threshold High (TIN1~5) | 12V | –12V | 5V | — | 2.4 | — | — | V |
| $V_{IL2}$ | Input Logic Threshold Low (RIN1~3) | 12V | –12V | 5V | — | 0.5 | 0.8 | — | V |
| $V_{IH2}$ | Input Logic Threshold High (RIN1~3) | 12V | –12V | 5V | — | — | 2.0 | 2.5 | V |
| $R_{IN}$ | RS-232 Input Resistance | 12V | –12V | 5V | — | 3 | 5 | 10 | kΩ |
| $V_{OL}$ | TTL/CMOS Output Low | 12V | –12V | 5V | $I_{OUT}$=1.6mA | — | — | 0.4 | V |
| $V_{OH}$ | TTL/CMOS Output High | 12V | –12V | 5V | $I_{OUT}$=1.0mA | 3.5 | $V_{DD}$-0.4 | — | V |
| $T_{SR}$ | Transmission Region Slew Rate | 12V | –12V | 5V | $R_L$=3kΩ~7kΩ<br>$C_L$=50pF~2500pF | 3 | 10 | 60 | V/μs |
| $R_{OL}$ | Transmitter Output Resistance | — | — | — | — | 300 | — | — | Ω |
| $I_S$ | RS-232 Output Short Circuit Current | — | — | — | — | — | 10 | 60 | mA |

## Application Circuits