# National Semiconductor

## DS26C31C CMOS Quad TRI-STATE® Differential Line Driver

### **General Description**

**Connection Diagram** 

The DS26C31 is a quad differential line driver designed for digital data transmission over balanced lines. The DS26C31 meets all the requirements of EIA standard RS-422 while retaining the low power characteristics of CMOS. This enables the construction of serial and terminal interfaces while maintaining minimal power consumption.

The DS26C31 accepts TTL or CMOS input levels and translates these to RS-422 output levels. This part uses special output circuitry that enables the individual drivers to power down without loading down the bus. The DS26C31 also includes special power up and down circuitry which will TRI-STATE the outputs during power up or down, preventing spurious glitches on its outputs. This device has enable and disable circuitry common to all four drivers. The DS26C31 is pin compatible to the AM26LS31 and the DS26LS31.

All inputs are protected against damage due to electrostatic discharge by diodes to  $V_{CC}$  and ground.

#### Dual-In-Line Package 16 INPUT A 5 V 15 INPUT D CHANNEL A OUTPUTS 14 CHANNEL D 13 OUTPUTS ENABLE 12 ENABLE CHANNEL R 11 OUTPUTS CHANNEL C OUTPUTS 10 INPUT B 8 g GND INPUT C TL/F/8574-1

**Top View** 



### **Features**

- TTL input compatible
- Typical propagation delays: 6 ns
- Typical output skew: 0.5 ns
- Outputs won't load line when V<sub>CC</sub> = 0V
- Meets the requirements of EIA standard RS-422
- Operation from single 5V supply
- TRI-STATE outputs for connection to system buses

DS26C31C

- Low quiescent current
- Available in surface mount

## **Truth Table**

Active High Enable	Active Low Enable	Input	Non-Inverting Output	Inverting Output
L	н	х	Z	Z
All other		L	L	н
combinations of enable inputs		н	н	L

L = Low logic state

 $H = High \log c$  state X = Irrelevant

K = INTEREVANT 7 - TRI STATE (bia

Z = TRI-STATE (high impedance)