

## Quad Exclusive OR/NOR Gate

### Description

The CXB1502Q-Y is an ultra high speed monolithic ECL IC, which contains four Exclusive OR/NOR gates.

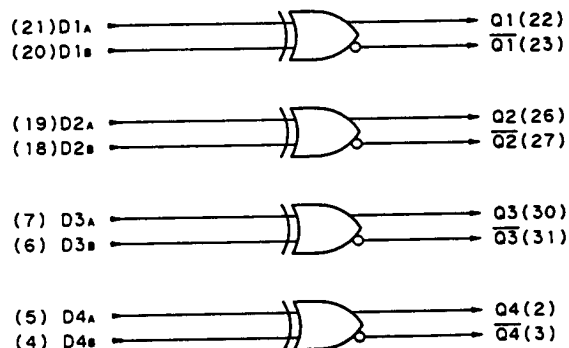
### Features

- Typical AC characteristics  $T_{pd}=580ps$   
 $T_{TLH}=270ps$   
 $T_{THL}=220ps$
- Internal pull down resistors on input pins to maintain logic LOW level with the pins left open
- ECL 100K compatible I/O levels
- Differential output

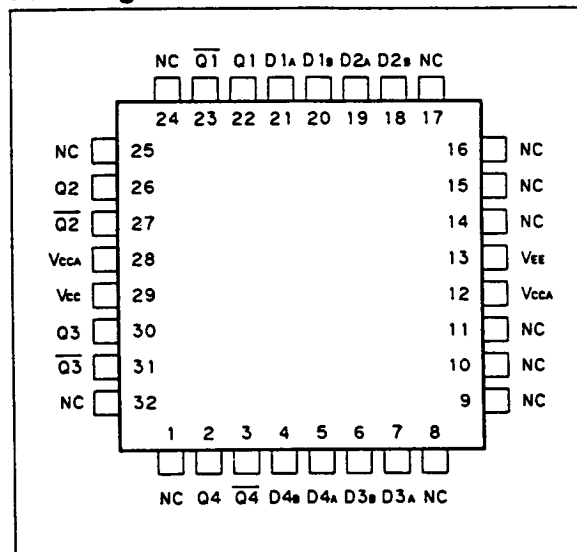
### Pin Names

$D_{nA}$ ,  $D_{nB}$  Data inputs  
 $Q_n$ ,  $\overline{Q}_n$  Data outputs  
 $V_{CCA}$  Circuit ground for outputs  
 $V_{EE}$  Negative power supply

### Logic Symbol



### Pin Assignment



### Truth Table

| INPUT    |          | OUTPUT |                  |
|----------|----------|--------|------------------|
| $D_{nA}$ | $D_{nB}$ | $Q_n$  | $\overline{Q}_n$ |
| L        | L        | L      | H                |
| L        | H        | H      | L                |
| H        | L        | H      | L                |
| H        | H        | L      | H                |

Note: H; HIGH voltage level  
L; LOW voltage level

## DC Characteristics

 $V_{EE} = -4.5 \pm 0.3V$ ,  $V_{CC} = V_{CCA} = GND$ ,  $V_{TT} = -2V$ ,  $T_c = 0^\circ C$  to  $+85^\circ C$ 

| Item                 | Symbol   | Test Condition | Min. | Typ. | Max. | Unit |
|----------------------|----------|----------------|------|------|------|------|
| Power supply current | $I_{EE}$ |                | -170 | -125 | -87  | mA   |

## AC Characteristics

 $V_{EE} = -4.5 \pm 0.3V$ ,  $V_{CC} = V_{CCA} = GND$ ,  $V_{TT} = -2V$ ,  $T_c = 0^\circ C$  to  $+85^\circ C$ ,  $R_T = 50\Omega$  to  $V_{TT}$ 

| Item                   | Symbol    | Input            | Output | Test Condition | Min. | Typ. | Max. | Unit |
|------------------------|-----------|------------------|--------|----------------|------|------|------|------|
| Propagation delay time | $T_{PLH}$ | $D_{nA}, D_{nB}$ | $Q_n$  |                | 400  | 580  | 770  | ps   |
|                        | $T_{PHL}$ |                  |        |                | 380  | 560  | 750  |      |
| Rise time              | $T_{TLH}$ |                  |        | 20% to 80%     |      | 270  | 380  |      |
| Fall time              | $T_{THL}$ |                  |        |                |      | 220  | 320  |      |