

### BX Series Extremely Fast PIN Drivers for Balanced Logic ECL and PECL

#### DESCRIPTION

BX series drivers are very high speed PIN drivers designed for use in Balanced ECL and PECL systems. They have a wide common-mode input voltage range (typically from +3 V to within 2 volts of the negative supply voltage) and high differential gain, which allows them to switch reliably even when driven by noisy twisted pair lines. The ECL inputs are of very high impedance and not capacitively loaded, so that ring-free matching to ECL system impedance can be accomplished with external matching resistors.

These drivers do not require a -5.2 V supply to assure ECL compatibility. Any negative voltage from -4 volts to -16 volts is acceptable, and the output open-circuit voltage swings to within a volt of the supply rails. Quiescent current consumption is typically less than 12mA, position and negative, per channel.

These drivers provide steady-state output current with current spikes for fast PIN and NIP switching. Testpoints are provided to allow tailoring of output currents and spikes to particular applications.

These drivers contain internal .01μf bypass capacitors on both supply inputs.

Screening to MIL-STD-883 is available.

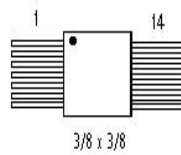
#### FEATURES

- Extremely High Speed, 5 nsec Typical
- Low Quiescent Current
- Wide Input Common Mode Voltage Range
- Small Size; Up to Six in One Package
- Can be used as single-input ECL driver with proper termination of unused inputs (degraded speed)

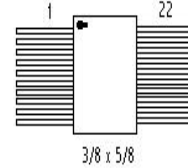
| PARAMETER                       | SYMBOL | MIN | TYP | MAX | UNITS |
|---------------------------------|--------|-----|-----|-----|-------|
| Pos. Bias Voltage               | V +    | 4.5 | 5   | 7   | V     |
| Neg. Bias Voltage               | V -    | -4  | -5  | -16 | V     |
| Switching Speed                 | T sw   | --  | 0   | 8   | nsec  |
| Pos. Supply (no lead) per Chan. | I q +  | --  | 5   | 12  | mA    |
| Neg Supply (no lead) per Chan.  | I q -  | --  | 5   | 12  | mA    |

Data shown above pertains to "B" voltage code

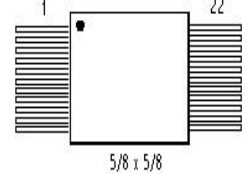
#### OUTLINES



**BX1**  
case 1,2



**BX2, BX3**  
case 3,4



**BX4, BX5, BX6**  
case C,5

#### LOGIC

Outputs are noninverting with respect to the true (+) input. Therefore, when IN is more positive than  $\overline{IN}$ , output will be positive. Output will be negative when IN is more negative than  $\overline{IN}$ .

#### PIN CONNECTIONS

| PIN | BX1 | BX2  | BX3  | BX4  | BX5  | BX6  |
|-----|-----|------|------|------|------|------|
| 1   | VEE | VEE  | VEE  | VEE  | VEE  | VEE  |
| 2   | Out | IN1  | IN1  | IN1  | IN1  | IN1  |
| 3   | Gnd | IN1  | IN1  | IN1  | IN1  | IN1  |
| 4   | NC  | Out1 | Out1 | Out1 | Out1 | Out1 |
| 5   | IN  | IN2  | IN2  | IN2  | IN2  | IN2  |
| 6   | IN  | IN2  | IN2  | IN2  | IN2  | IN2  |
| 7   | +5V | Out2 | Out2 | Out2 | Out2 | Out2 |
| 8   | NC  | NC   | IN3  | IN3  | IN3  | IN3  |
| 9   | NC  | NC   | IN3  | IN3  | IN3  | IN3  |
| 10  | NC  | +5V  | Out3 | Out3 | Out3 | Out3 |
| 11  | NC  | Gnd  | +5V  | +5V  | +5V  | +5V  |
| 12  | NC  | NC   | Gnd  | Gnd  | Gnd  | Gnd  |
| 13  | NC  | NC   | NC   | IN4  | IN4  | IN4  |
| 14  | NC  | NC   | NC   | IN4  | IN4  | IN4  |
| 15  | NC  | NC   | NC   | Out4 | Out4 | Out4 |
| 16  | NC  | NC   | NC   | NC   | IN5  | IN5  |
| 17  | NC  | NC   | NC   | NC   | IN5  | IN5  |
| 18  | NC  | NC   | NC   | NC   | Out5 | Out5 |
| 19  | NC  | NC   | NC   | NC   | NC   | IN6  |
| 20  | NC  | NC   | NC   | NC   | NC   | IN6  |
| 21  | NC  | NC   | NC   | NC   | NC   | Out6 |
| 22  | NC  | NC   | NC   | Gnd  | Gnd  | Gnd  |