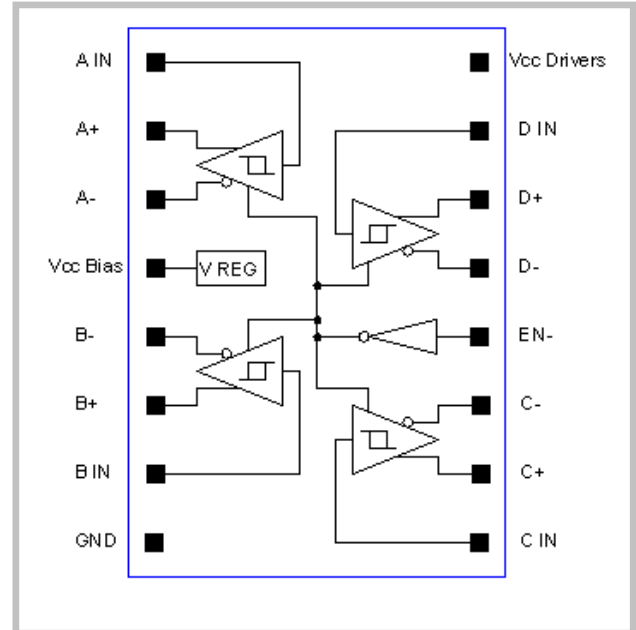


**QUAD DIFFERENTIAL LINE DRIVER  
SEPARATE LOGIC BIAS  
AND DRIVER BIAS, WITH  
TRI-STATE OUTPUTS**

**ET7272B**

**FEATURES**

- Supply (Bias) Voltage Range 3.5V to 30V
- Operation to 800KHz
- CMOS and TTL Compatible Inputs
- Separate logic bias and driver supply pins
- Optional single supply operation for moderate power applications
- High Impedance Buffered Inputs with hysteresis
- Tri-State outputs
- 80mA peak SINK/SOURCE current
- Outputs Protected by Thermal Shut-Down
- ESD protection to 1KV, HBM
- MSL level 2



**DESCRIPTION**

These line drivers are pin compatible with 26LS31 in applications where pin 4 = 5V and pin 12 = GND. Internal clamp diodes allow trouble-free operation when driving cable lengths exceeding 100m. Split supplies are provided to minimize standby power dissipation in high voltage applications. The logic should be powered from a regulated 5V supply at the VccBias pin. The output stages may then be powered by a separate supply at VccDrivers, up to 30V. Output voltage swings of 0.3V to VCC-1.9V are typical. The outputs are protected against shorts to ground, shorts to Vcc and to other outputs, by a two-fold scheme of current limiting and thermal shutdown. This assures highly reliable operation in harsh environments.

The outputs may be placed into a high impedance state by application of a logic high at the EN- pin. For normal operation, this pin should be at logic low or grounded.

**ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Min.	Max.	Units	Ref.
Operating Temperature Range	T <sub>A</sub>	-55	115	°C	Note 1.
Supply (Driver) Voltage Range	V <sub>CCD</sub>	4.5	30	V	

ETIC RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME TO IMPROVE THE DESIGN AND TO SUPPLY THE BEST PRODUCT.

## ELECTRICAL CHARACTERISTICS

Unless otherwise specified,  $T_A = 25^\circ\text{C}$  and  $\text{EN-} < 0.8\text{V}$ .

Parameters	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Overtmp Operate Point (junction)	$T_{JOP}$		172		$^\circ\text{C}$	Note 1
Overtmp Release Point (junction)	$T_{JRP}$		136		$^\circ\text{C}$	Note 1
Vcc Bias Voltage Range	VCCB	3.5	5	30	V	
Vcc Drivers Voltage Range	VCCD	4.5	5	30	V	
Supply Current VCCB1 (BIAS)	I <sub>CCB1</sub>		11.9	16.0	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 5V
Supply Current VCCD1 (DRIVERS)	I <sub>CCD1</sub>		2.4	3.3	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 5V
Supply Current VCCB2	I <sub>CCB2</sub>		2.5	3.4	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 5V, EN- > 2V
Supply Current VCCD2	I <sub>CCD2</sub>		0.0	0.1	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 5V, EN- > 2V
Supply Current VCCB3	I <sub>CCB3</sub>		12.1	18.5	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 30V
Supply Current VCCD3	I <sub>CCD3</sub>		2.4	3.3	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 30V
Supply Current VCCB4	I <sub>CCB4</sub>		2.6	3.5	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 5V, EN- > 2V
Supply Current VCCD4	I <sub>CCD4</sub>		0.0	0.1	mA	V <sub>CCB</sub> and V <sub>CCD</sub> = 5V, EN- > 2V
Enable Input Threshold	V <sub>THE</sub>	0.8	1.5	2	V	
Enable Low Level Input Current	I <sub>I<sub>LE</sub></sub>	-10	0	10	$\mu\text{A}$	V <sub>IN</sub> = 0V, V <sub>CCB</sub> = 5V
Enable High Level Input Current	I <sub>I<sub>HE</sub></sub>	-	108	150	$\mu\text{A}$	V <sub>IN</sub> = 5V, V <sub>CCB</sub> = 5V
High Impedance Output Leakage	I <sub>oZ</sub>	-4.0	0.0	4.0	$\mu\text{A}$	V <sub>CCD</sub> = 30V, EN- > 2V, Output at 15V
Input Positive-Going Threshold	V <sub>T+</sub>	1.05	1.25	1.45	V	V <sub>CCB</sub> = 5V
Input Negative-Going Threshold	V <sub>T-</sub>	0.75	0.95	1.15	V	V <sub>CCB</sub> = 5V
Input Hysteresis	V <sub>H</sub>	-	0.3	-	V	V <sub>CCB</sub> = 5V
Low Level Input Current	I <sub>IL</sub>		-0.1	-4.0	$\mu\text{A}$	V <sub>IN</sub> = 0V, V <sub>CCB</sub> = 5V
High Level Input Current	I <sub>IH</sub>		0	4.0	$\mu\text{A}$	V <sub>IN</sub> = 5V, V <sub>CCB</sub> = 5V
Low Level Output1	V <sub>OL1</sub>		375	500	mV	I <sub>OL</sub> = 20mA, V <sub>CCD</sub> = 5V
Low Level Output2	V <sub>OL2</sub>		370	500	mV	I <sub>OL</sub> = 20mA, V <sub>CCD</sub> = 30V
High Level Output1	V <sub>OH1</sub>	2.4	2.8		V	I <sub>OH</sub> = -20mA, V <sub>CCD</sub> = 5V
High Level Output2	V <sub>OH2</sub>	27.7	28.1		V	I <sub>OH</sub> = -20mA, V <sub>CCD</sub> = 30V

## PIN FUNCTION TABLE

PIN NUMBERS	PIN NAMES	FUNCTION
1, 7, 9, 15	A IN, B IN, C IN, D IN	LOGIC LEVEL INPUTS
2, 6, 10, 14	A+, B+, C+, D+	TRUE OUTPUTS
3, 5, 11, 13	A-, B-, C-, D-	COMPLEMENT OUTPUTS
4	VCC BIAS	POWER FOR LOGIC
8	GND	RETURN
12	EN-	ENABLE, ACTIVE LOW
16	VCC DRIVERS	POWER FOR OUTPUTS

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## AC SWITCHING CHARACTERISTICS

Values given at  $V_{CCB} = 5V$ ,  $V_{CCD} = 24V$ ,  $T_A = 25^\circ C$ ,  $C_L = 1000pF$  on all outputs, and  $EN < 0.8V$ .

Parameters	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Propagation delay, rising input 50% point to zero crossing of differential outputs	$T_{PLH}$		450	630	ns	See above.
Propagation delay, falling input 50% point to zero crossing of differential outputs	$T_{PHL}$		450	630	ns	See above.
Output Rise Time	$T_R$		700	980	ns	See above.
Output Fall Time	$T_F$		700	980	ns	See above.

### NOTES:

1. This is not a test parameter, but for information only.
2. Unused inputs should be connected to ground.

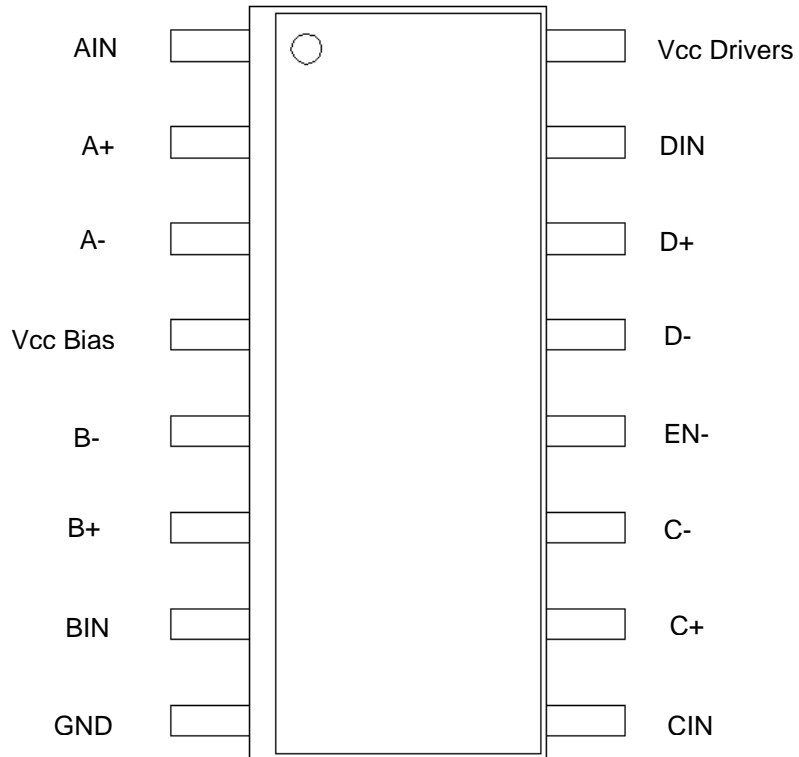
## Ordering Information:

PART NUMBER	DESCRIPTION	Packaging	MINIMUM ORDER
ET7272B SOIC	16L SOIC (See drawing)	50 per tube	50
ET7272B T&R	SOIC on Tape & Reel	Reel size & qty per customer PO	500

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**ET7272B-SOIC**  
Package Drawing for 16L SOIC



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