

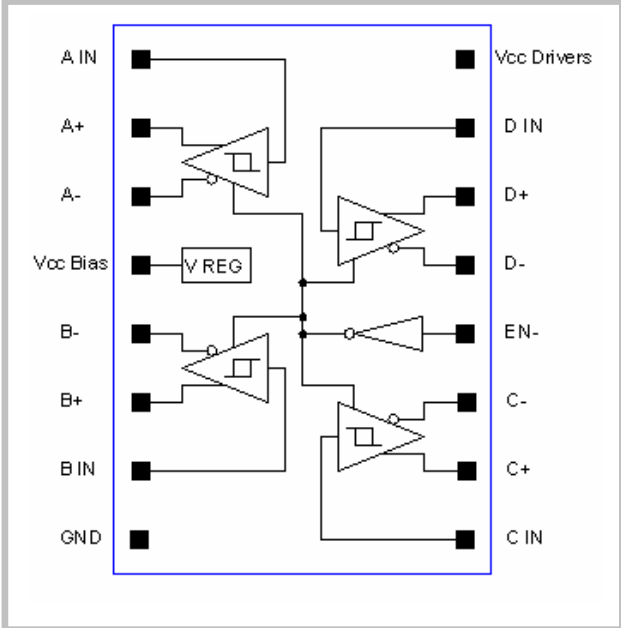
QUAD DIFFERENTIAL LINE DRIVER

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



This part is available in 16L SOIC or 20L TSSOP (all Pb-free) packages, or as die.

<u>PACKAGE</u>	<u>SUFFIX</u>	<u>(Pb-free)</u>
Die Only	-C	-----
16 Lead SOIC	-SOP	-SOP-LF
20 Lead TSSOP	-TSS	-TSS-LF

- ### APPLICATIONS:
- Encoders
 - Industrial controls

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.

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 $EN- < 0.8\text{V}$.

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)	Iccb1		11.9	16.0	mA	Vccb and Vccd = 5V
Supply Current Vccd1 (DRIVERS)	Iccd1		2.4	3.3	mA	Vccb and Vccd = 5V
Supply Current Vccb2	Iccb2		2.5	3.4	mA	Vccb and Vccd = 5V, EN- > 2V
Supply Current Vccd2	Iccd2		0.0	0.1	mA	Vccb and Vccd = 5V, EN- > 2V
Supply Current Vccb3	Iccb3		12.1	18.5	mA	Vccb and Vccd = 30V
Supply Current Vccd3	Iccd3		2.4	3.3	mA	Vccb and Vccd = 30V
Supply Current Vccb4	Iccb4		2.6	3.5	mA	Vccb and Vccd = 5V, EN- > 2V
Supply Current Vccd4	Iccd4		0.0	0.1	mA	Vccb and Vccd = 5V, EN- > 2V
Enable Input Threshold	V_{THE}	0.8	1.5	2	V	
Enable Low Level Input Current	I_{ILE}	-10	0	10	μA	$V_{IN} = 0\text{V}$, Vccb = 5V
Enable High Level Input Current	I_{IHE}	-	108	150	μA	$V_{IN} = 5\text{V}$, Vccb = 5V
High Impedance Output Leakage	I_{OZ}	-4.0	0.0	4.0	μA	Vccd = 30V, EN- > 2V, Output at 15V
Input Positive-Going Threshold	V_{T+}	1.05	1.25	1.45	V	Vccb = 5V
Input Negative-Going Threshold	V_{T-}	0.75	0.95	1.15	V	Vccb = 5V
Input Hysteresis	V_H	-	0.3	-	V	Vccb = 5V
Low Level Input Current	I_{IL}		-0.1	-4.0	μA	$V_{IN} = 0\text{V}$, Vccb = 5V
High Level Input Current	I_{IH}		0	4.0	μA	$V_{IN} = 5\text{V}$, Vccb = 5V
Low Level Output1	V_{OL1}		375	500	mV	$I_{OL} = 20\text{mA}$, Vccd = 5V
Low Level Output2	V_{OL2}		370	500	mV	$I_{OL} = 20\text{mA}$, Vccd = 30V
High Level Output1	V_{OH1}	2.4	2.8		V	$I_{OH} = -20\text{mA}$, Vccd = 5V
High Level Output2	V_{OH2}	27.7	28.1		V	$I_{OH} = -20\text{mA}$, Vccd = 30V

NOTES:

1. This is not a test parameter, but for information only.

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ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Units	Ref.
Operating Temperature Range	T_A	-55	115	°C	Note 1.
Supply (Driver) Voltage Range	V_{CCD}	4.5	30	V	

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.

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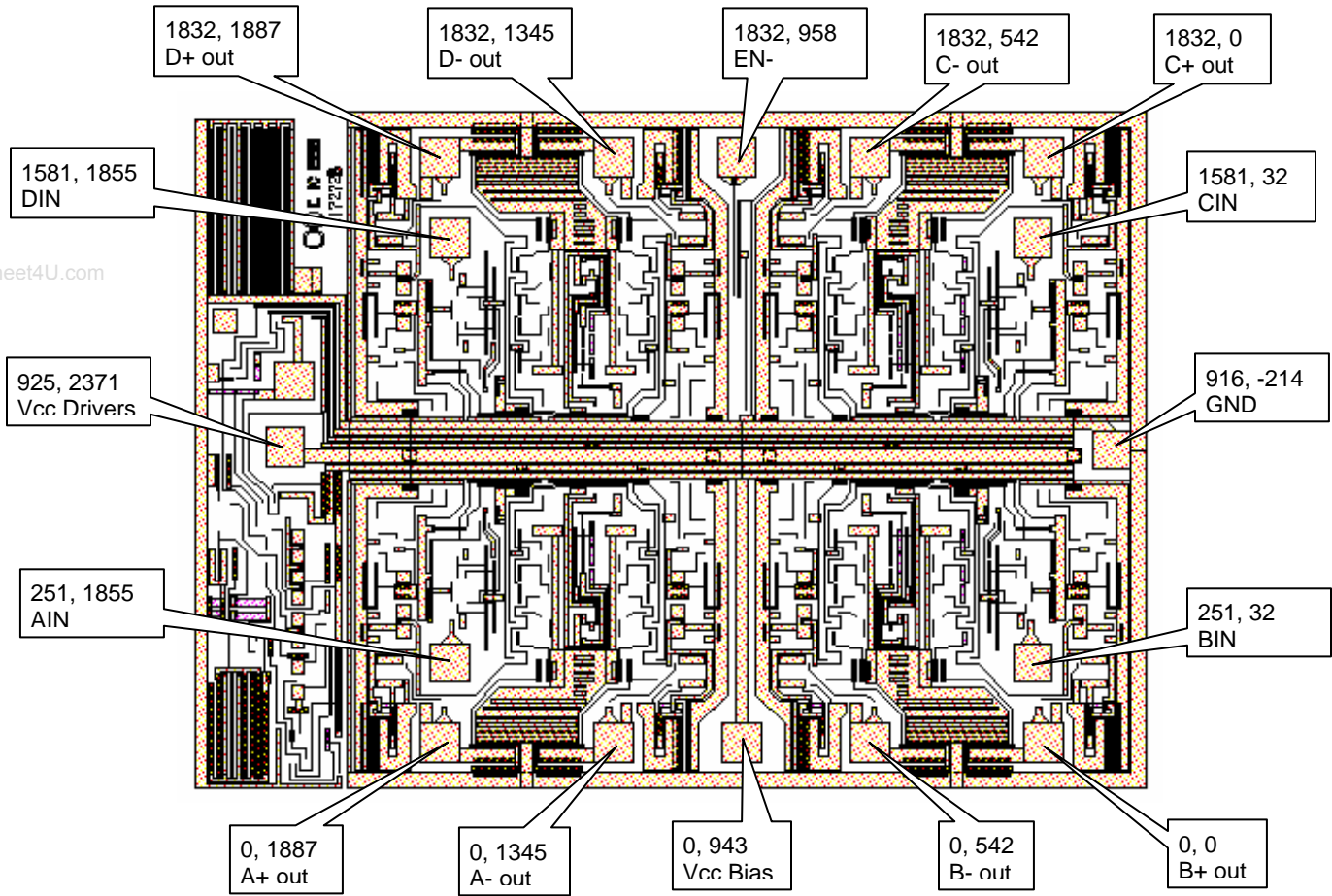
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ET7272B-C

Size = 2261 μ x 3150 μ (.089" x .124")

Thickness = 305 μ (.012")

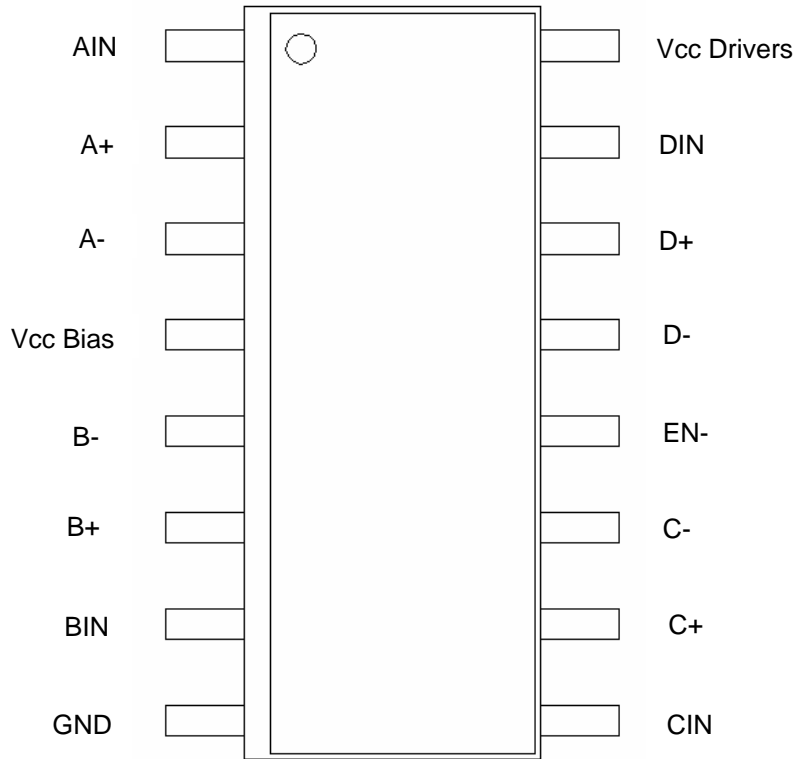
(pad coordinates below in microns)



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ET7272B-SOP
Package Drawing for 16L SOIC

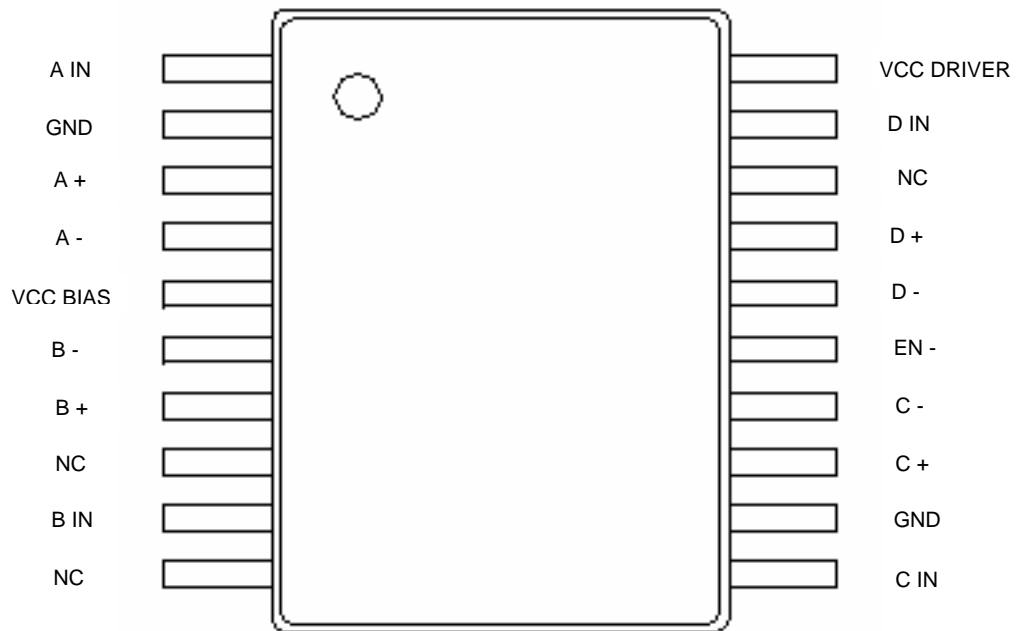


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ET7272B-TSS
Package Drawing for 20L TSSOP



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