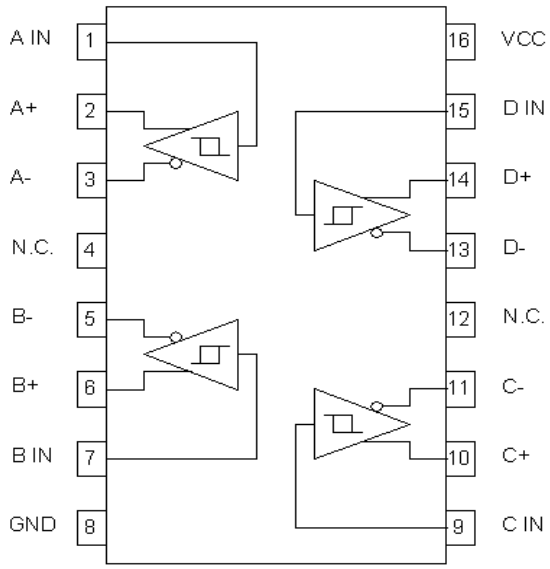
QUAD DIFFERENTIAL LINE DRIVER

(Pin compatible with 26LS31 in applications which do not require an enable function.)

26ET31C

FEATURES

- Supply Voltage Range 4.75V to 30V
- Operation to 800KHz
- CMOS and TTL Compatible Inputs
- Outputs RS-422A Compatible
- High Impedance Buffered Inputs with Hysteresis
- Outputs short circuit protected
- 70mA peak SINK current
- Outputs Protected by Thermal Shut-Down
- MSL level 2



DESCRIPTION

These line drivers are similar to the popular 26LS31 device, but without the enable function. They provide the additional supply voltage range necessary for use in many industrial control applications. Outputs are compatible with RS-422A, but they allow use of supplies up to 30V. Output voltage swings up to VCC-2V are typical. The outputs are protected against shorts to ground by a two-fold scheme of current limiting and thermal shutdown. Thermal shutdown is accomplished by monitoring junction temperature and comparing this to a band gap reference on chip.

Input hysteresis of about 0.5V provides good noise margin, even in noisy industrial control environments. Input to output propagation delays of less than 200ns are typical for rising and falling edges of the input waveform, measured to the zero crossing of the differential outputs.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Units	Ref.
Operating Temperature Range	T_A	-40	115	°C	Note 1.
Supply Voltage Range	V_{CC}	4.75	30	V	

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ELECTRICAL CHARACTERISTICS

Unless otherwise specified, typical values given at V_{CC}=12V, T_A = 25°C, and EN- <0.8V.

Parameters	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Overtemp Operate Point (junction)	T_{JOP}		155		°C	Note 1.
Overtemp Release Point (junction)	T_{JRP}		105		°C	Note 1.
Supply Current	Icc1 Icc2	7.0 9.0	11.0 13.0	17.0 20.0	mA	Vcc = 5 V (Icc1) Vcc = 30.0V (Icc2)
Input Positive-Going Threshold	V_{T+}	1.1	1.5	1.9	V	
Input Negative-Going Threshold	V_{T-}	0.7	1.0	1.4	V	
Low Level Input Current	I_{IL}		-0.13	-4.0	µA	V_{IN} = 0V, V_{CC} = 30V
High Level Input Current	I_{IH}		0	4.0	µA	V_{IN} = 30V, V_{CC} = 30V
Low Level Output	V_{OL}		375	500	mV	I_{OL} = 20mA, V_{CC} = 5V
Low Level Output	V_{OL}		375	500	mV	I_{OL} = 20mA, V_{CC} = 30V
High Level Output	V_{OH}	2.5	2.8		V	I_{OH} = -20mA, V_{CC} = 5V
High Level Output	V_{OH}	27.8	28.0		V	I_{OH} = -20mA, V_{CC} = 30V

AC SWITCHING CHARACTERISTICS

Values given at V_{CC} = 24V, T_A = 25°C, C_L = 100pF on all outputs. (See note 2.)

Parameters	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Propagation delay, rising input 50% point to zero crossing of differential outputs	T_{PLH}		150	285	ns	
Propagation delay, falling input 50% point to zero crossing of differential outputs	T_{PHL}		170	310	ns	
Output Rise Time	T_R		95	200	ns	
Output Fall Time	T_F		40	165	ns	

NOTES:

1. This is not a test parameter, but for information only.
2. It may be necessary to clamp the outputs with Schottky diodes when driving extemely long cables with high capacitance between outputs. These diodes should have a forward voltage of less than 0.4V, and be connected with cathode to the output and anode to ground.

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PIN FUNCTION TABLE

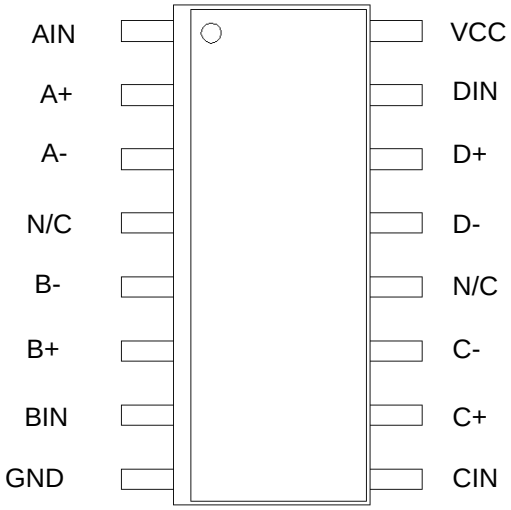
PIN NUMBERS	PIN NAMES	FUNCTION
1, 7, 9, 15	A IN, B IN, C IN, D IN	LOGIC LEVEL INPUTS
2, 6, 10, 14	A+, B+, C+, D+	TRUE OUTPUTS
3, 5, 11, 13	A-, B-, C-, D-	COMPLEMENT OUTPUTS
4	N/C	No connection
8	GND	RETURN
12	N/C	No connection
16	VCC	POWER

Ordering Information:

PART NUMBER	DESCRIPTION	Packaging	MINIMUM ORDER
26ET31C SOIC	16L SOIC (See drawing)	50 per tube	50
26ET31C T&R	SOIC on Tape & Reel	Reel size & qty per customer PO	500

26ET31C SOIC

Package Drawing for 16L SOIC



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