



LB1731

High-Voltage, Current-Sink Output Driver

Overview

The LB1731 is a 4-channel high-voltage current sink output driver. Inputs are active-low CMOS/TTL logic-level, and outputs are high-voltage open-collector NPN Darlington pairs.

Each driver in the LB1731 sinks up to 1.5A and withstands collector voltages of up to 85V.

The LB1731 is available in a 16-pin DIP package.

Features

- For independent high-voltage high-current drivers.
- Output clamp diodes.
- Input protection diodes.
- 5V CMOS- and TTL-compatible logic-level inputs.

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{DD\text{ max}}$		7.0	V
	$V_{CC\text{ max}}$		82	V
Applied output voltage	$V_O\text{ max}$		85	V
Applied input voltage	$V_{IN\text{ max}}$	$V_{IN} \geq \text{GND}$	$V_{DD}-7.0$ to $V_{DD}+10.0$	V
Output current	$I_O\text{ max}$		1.5	A
Clamp diode forward current	I_{FS}		1.5	A
Allowable power dissipation	$P_d\text{ max}$	Package only with recommended circuit board pattern : 2.6W	1.9	W
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

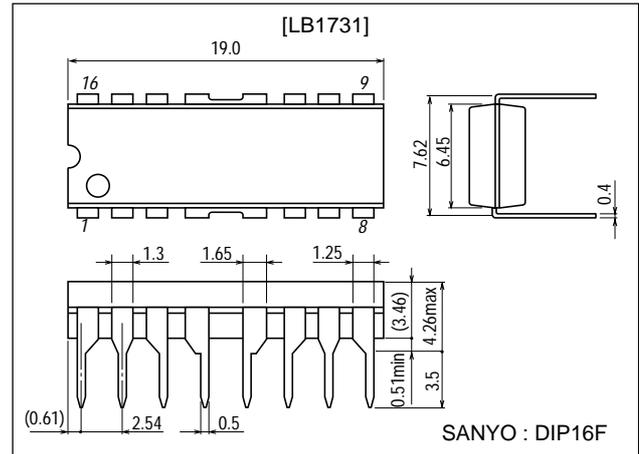
Allowable Operating Ranges at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Power supply voltage range	V_{DD}		3.5 to 7.0	V
Input ON-level voltage	$V_{IN\text{ on}}$	$V_{IN} \geq \text{GND}, I_O = 1.0\text{A}$	$V_{DD}-7.0$ to $V_{DD}-2.6$	V
Input OFF-level voltage	$V_{IN\text{ off}}$	$I_O \leq 30\mu\text{A}$	$V_{DD}-0.3$ to $V_{DD}+10.0$	V

Package Dimensions

unit:mm

3054B-DIP16F



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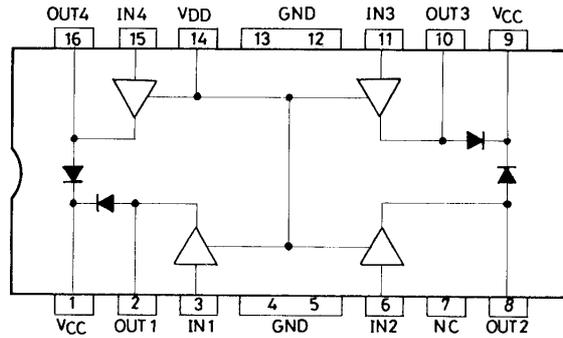
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LB1731

Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{DD} = 5.0\text{V}$

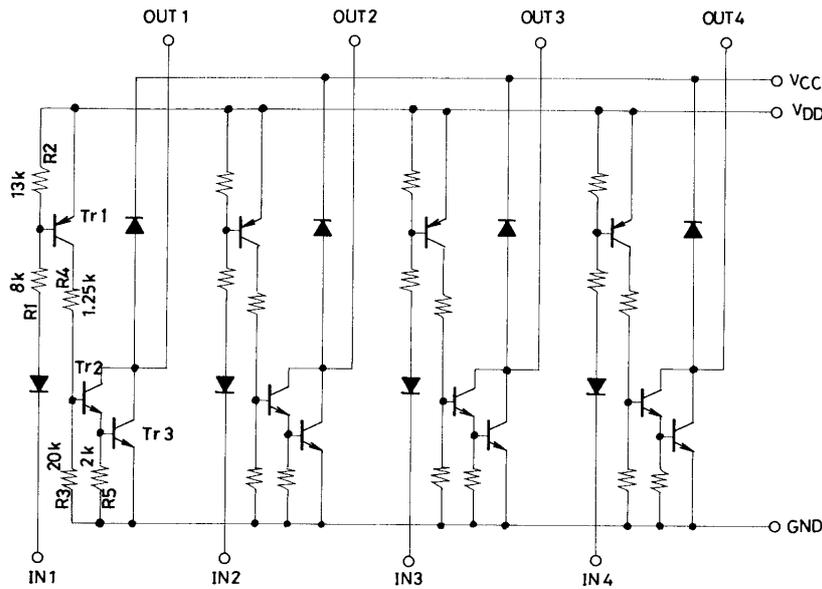
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output saturation voltage	$V_{O\text{ sat}1}$	$V_{IN} = V_{DD} - 5.0\text{V}$, $I_O = 0.5\text{A}$			1.2	V
	$V_{O\text{ sat}2}$	$V_{IN} = V_{DD} - 5.0\text{V}$, $I_O = 1.0\text{A}$			1.5	V
	$V_{O\text{ sat}3}$	$V_{IN} = V_{DD} - 5.0\text{V}$, $I_O = 1.5\text{A}$			2.0	V
Output sustain voltage	$V_{O\text{ sus}}$	$I_O = 100\text{mA}$	85			V
Input current	I_{IN}	$V_{DD} = 7.0\text{V}$, $V_{IN} = V_{DD} - 7.0\text{V}$			0.5	mA
Clamp diode forward voltage	V_{FS}	$I_{FS} = 1.5\text{A}$			3.0	V
Clamp diode reverse current	I_{RS}	$V_{CC} = 82\text{V}$, $V_O = 0\text{V}$			30	μA



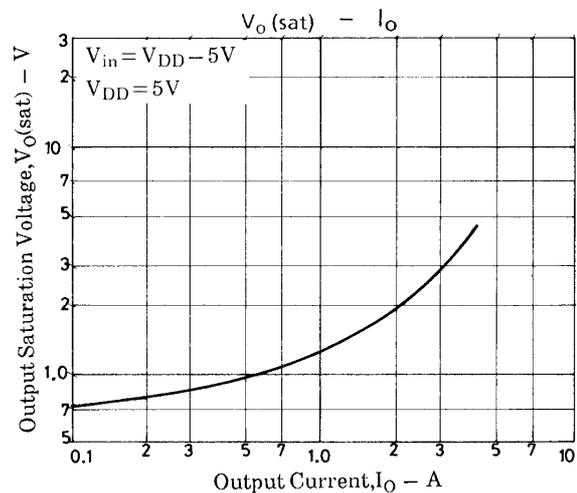
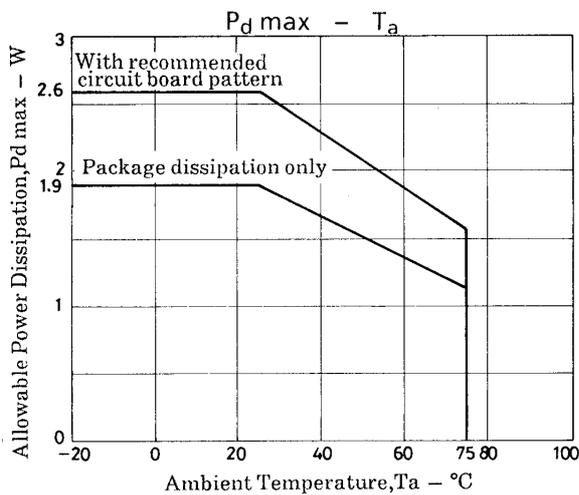
Do not use no-connection (NC) pins.

Equivalent Circuit

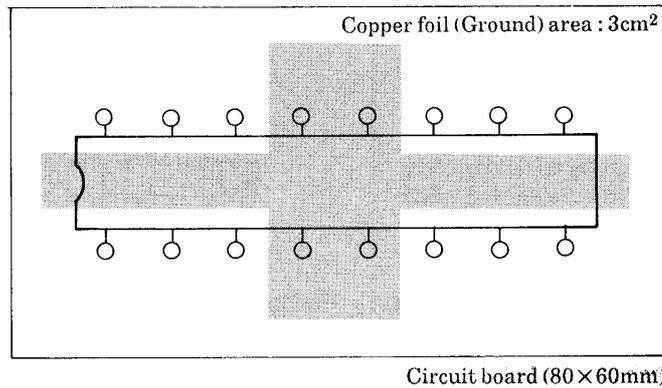
Pins 1 and 9 are shorted internally.



Unit (capacitance: F)



Recommended Circuit Board Layout



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