Ordering number:ENN2846A

Monolithic Digital IC

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.

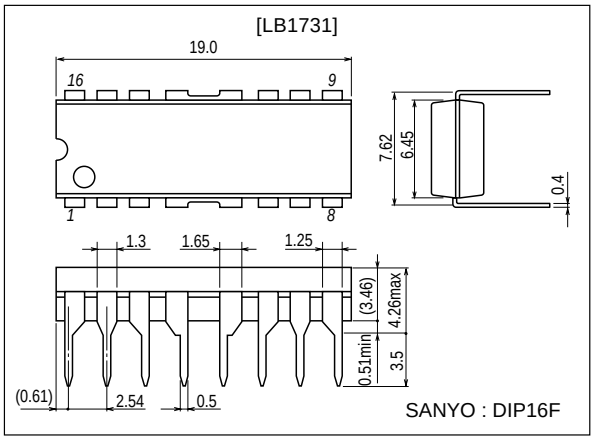
Features

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

Package Dimensions

unit:mm

3054B-DIP16F



Specifications

Absolute Maximum Ratings at Ta = 25˚C

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

Allowable Operating Ranges at Ta = 25˚C

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

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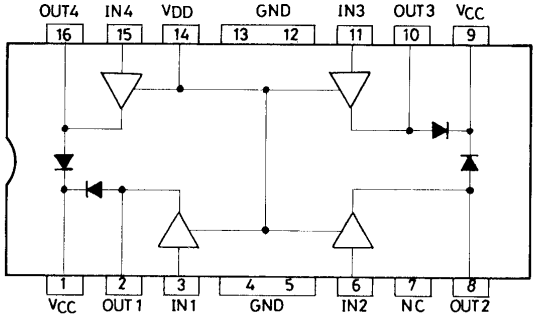
Electrical Characteristics at Ta = 25°C, V_{DD}=5.0V

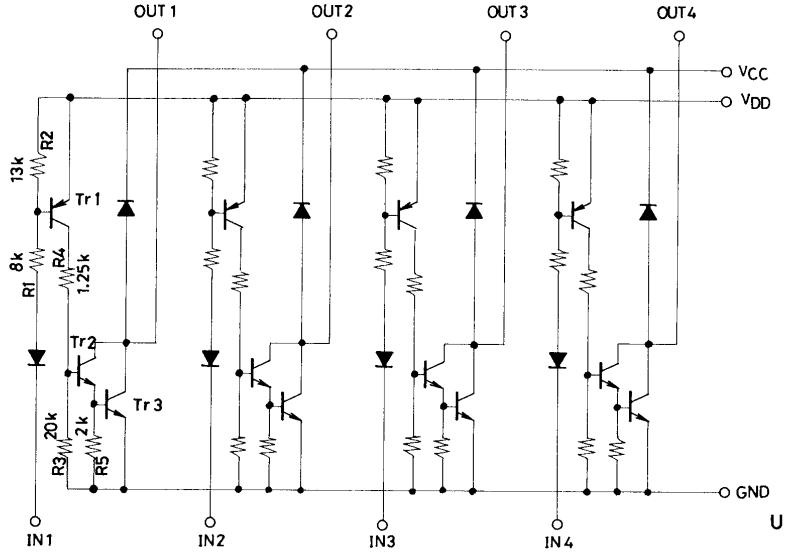
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output saturation voltage	V_O sat1	$V_{IN}=V_{DD}-5.0V$, I_O=0.5A			1.2	V
	V_O sat2	$V_{IN}=V_{DD}-5.0V$, I_O=1.0A			1.5	V
	V_O sat3	$V_{IN}=V_{DD}-5.0V$, I_O=1.5A			2.0	V
Output sustain voltage	V_O sus	I_O=100mA	85			V
Input current	I_{IN}	V_{DD}=7.0V, $V_{IN}=V_{DD}-7.0V$			0.5	mA
Clamp diode forward voltage	V_{FS}	I_{FS}=1.5A			3.0	V
Clamp diode reverse current	I_{RS}	V_{CC}=82V, V_O=0V			30	μA



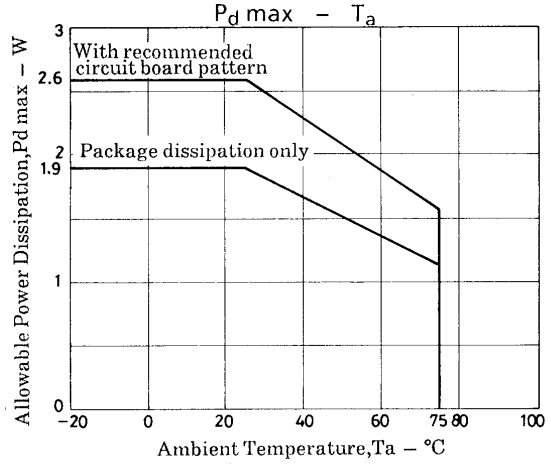
Do not use no-connection (NC) pins.

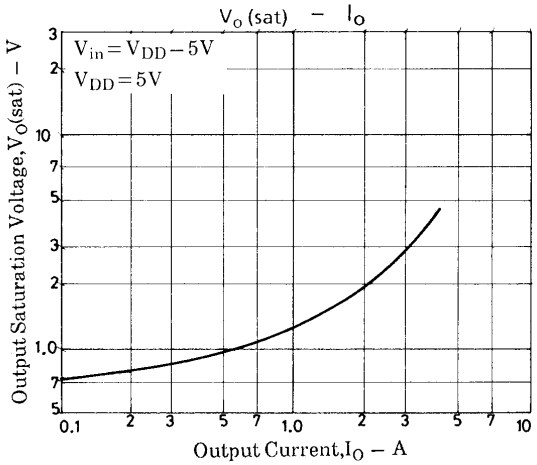
Pins 1 and 9 are shorted internally.

Equivalent Circuit



Unit (capacitance: F)





Recommended Circuit Board Layout