



LB1651D

Dual Bidirectional Motor Driver

Overview

The LB1651D is a dual bidirectional motor driver that is designed to drive motors directly by TTL outputs. It provides the functions of bidirectional motor drive, brake that are determined by two inputs and the inhibit function that brings the output to a high impedance state.

Applications

- Multi DC motor driver
- Bidirectional motor driver
- Bipolar stepping motor driver

Features

- High output current (1 A/ch)
- Wide operating voltage range (4.5 to 36 V)
- Inhibit function
- Direct drive made possible by TTL, CMOS IC
- High noise margin

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC1}		36	V
Logic supply voltage	V_{CC2}		36	V
Input voltage	V_{IN}		7	V
Inhibit voltage	V_{inh}		7	V
Peak output current	I_{OUT}	1 ms non-repetitive	2	A
Allowable power dissipation	$P_d \text{ max}$	* With specified board	2.5	W
Operating temperature	T_{opr}		-20 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

* Specified board: $114 \times 76 \times 1.6 \text{ mm}^3$

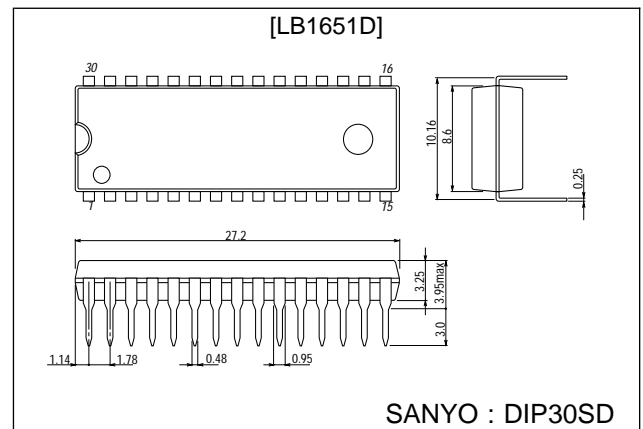
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Package Dimensions

unit : mm

3196-DIP30SD



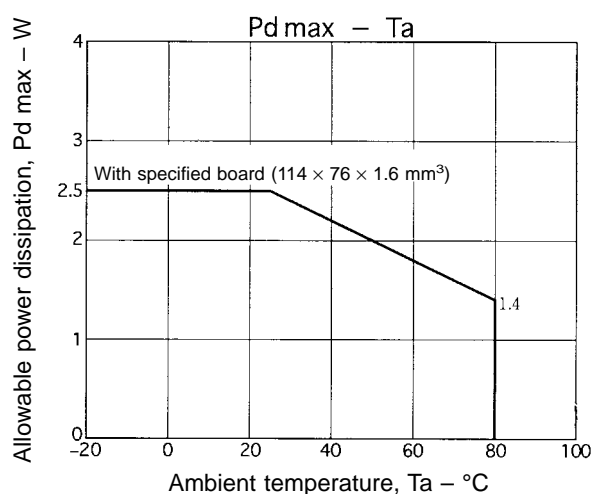
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Allowable Operating Conditions at $T_a = 25^\circ\text{C}$

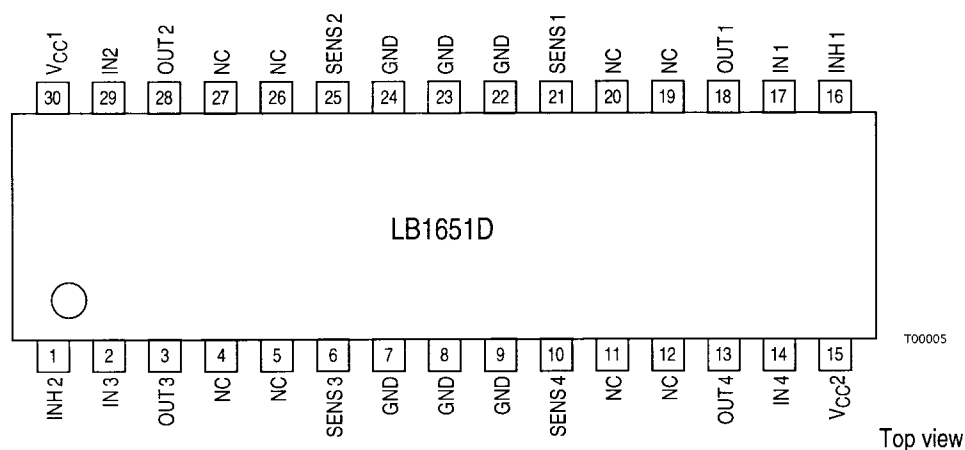
Parameter	Symbol	Conditions	Rating	Unit
Supply voltage	V_{CC1}		4.5 to 36	V
Logic supply voltage	V_{CC2}		4.5 to 36	V

Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC1} = 24\text{ V}$, $V_{CC2} = 5\text{ V}$

Parameter	Symbol	Conditions	min	typ	max	Unit
Supply current (Per channel)	I_{CC1}	$V_{IN} = L, I_O = 0, V_{inh} = H$			1.5	mA
		$V_{IN} = H, I_O = 0, V_{inh} = H$			6	mA
		$V_{inh} = L$			1	mA
Logic supply current	I_{CC2}	$V_{IN} = L, I_O = 0, V_{inh} = H$		44	60	mA
		$V_{IN} = H, I_O = 0, V_{inh} = H$			22	mA
		$V_{inh} = L$			24	mA
Low-level input voltage	V_{IL}		-0.3		+1.5	V
High-Level Input Voltage	V_{IH}	$V_{CC2} \leq 7\text{ V}$	2.3		V_{CC2}	V
		$V_{CC2} > 7\text{ V}$	2.3		7	V
Low-level input current	I_{IL}	$V_{IN} = L$			± 10	μA
High-level input current	I_{IH}	$V_{IN} = H - 0.3\text{ V}$		30	100	μA
Low-level inhibit voltage	V_{inhL}		-0.3		+1.5	V
High-level inhibit voltage	V_{inhH}	$V_{CC2} \leq 7\text{ V}$	2.3		V_{CC2}	V
		$V_{CC2} > 7\text{ V}$	2.3		7	V
Low-level inhibit current	I_{inhL}		-100	-30		μA
High-level inhibit current	I_{inhH}				± 10	μA
Saturation voltage	$V_{CE(sat)H}$	$I_O = -1\text{ A}$		1.4	1.8	V
	$V_{CE(sat)L}$	$I_O = 1\text{ A}$		1.2	1.8	V
Sensing voltage	V_{SENS}				2	V



Pin Assignment



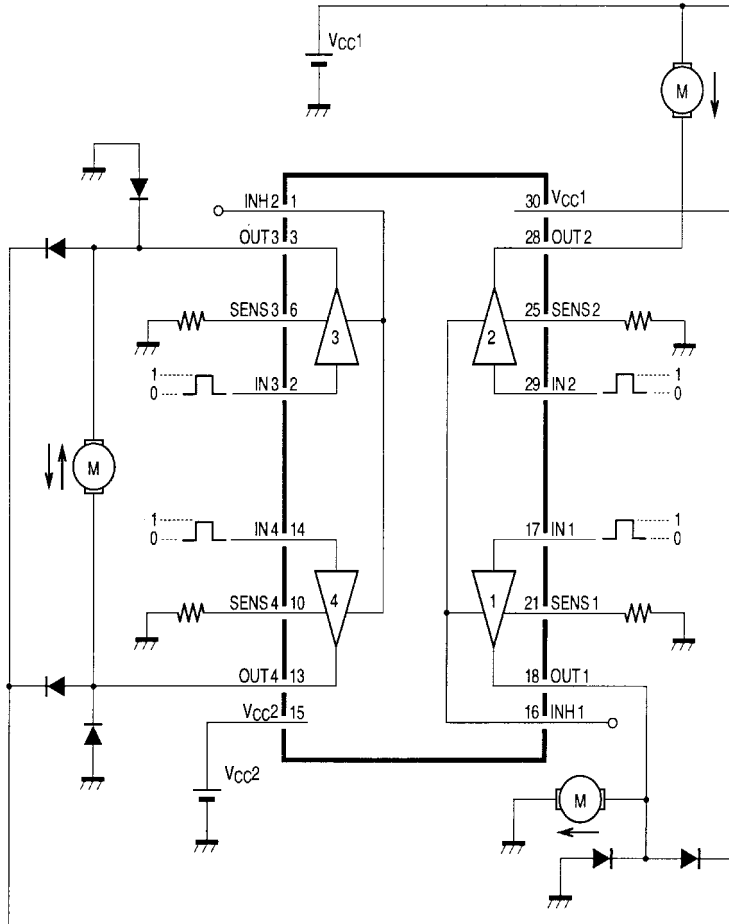
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Truth Table

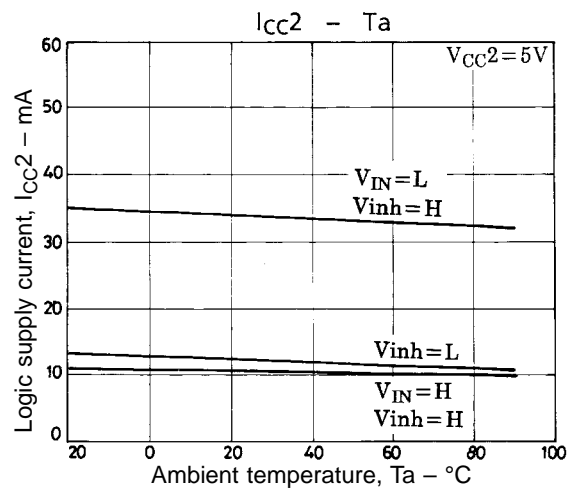
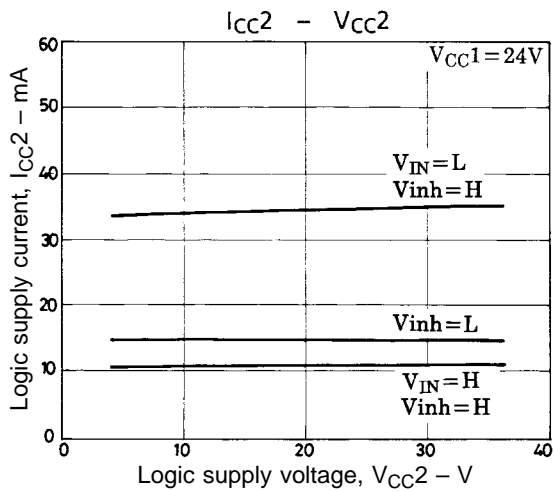
V_{IN} (per CH)	V_{inh}	V_O
H	H	H
L	H	L
H	L	Open*
L	L	Open*

*: High impedance

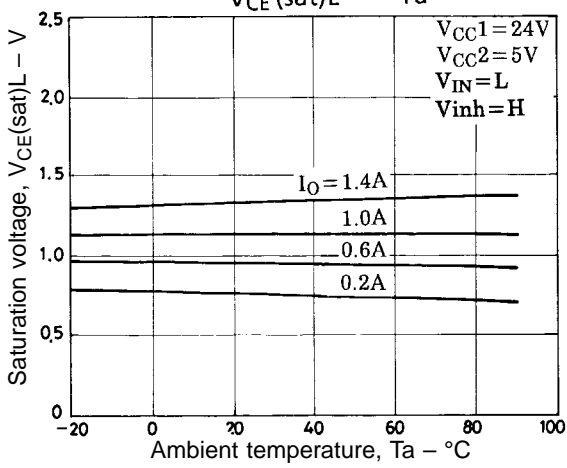
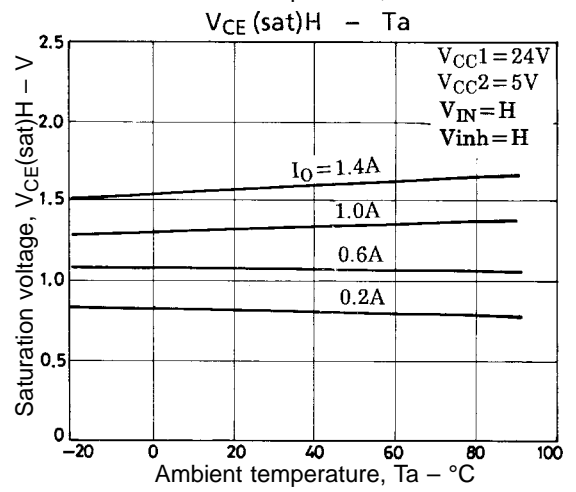
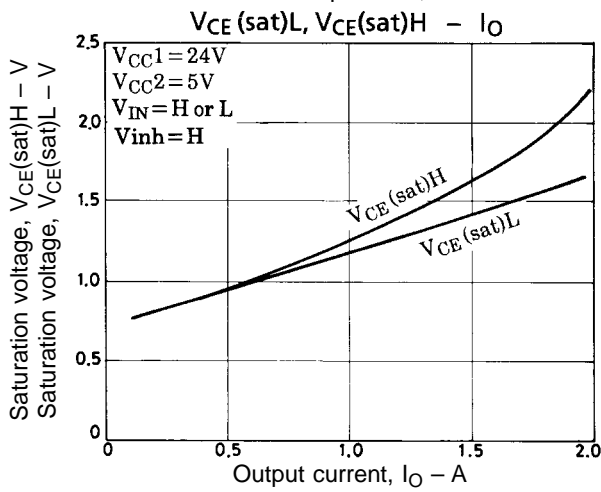
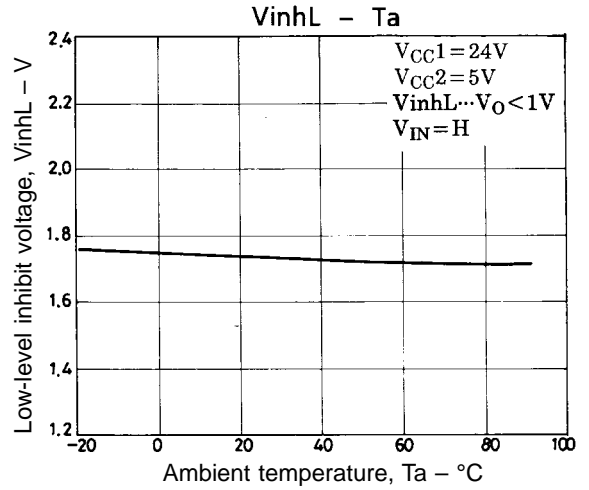
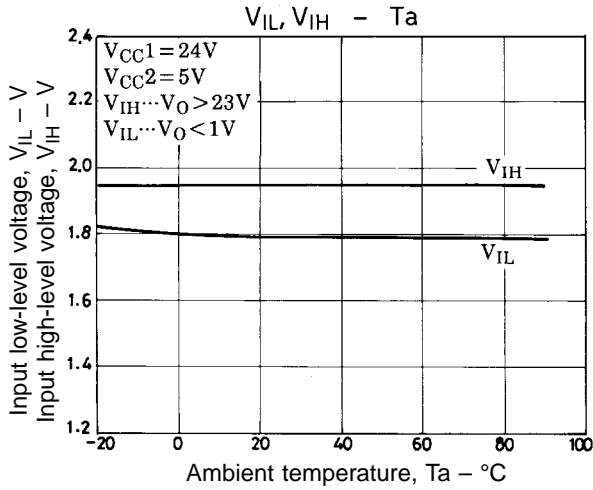
Sample Application Circuit



T00006



LB1651D



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