



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

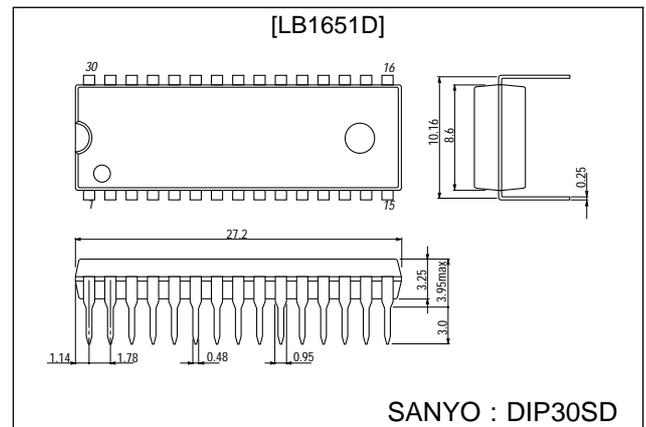
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Package Dimensions

unit : mm

3196-DIP30SD



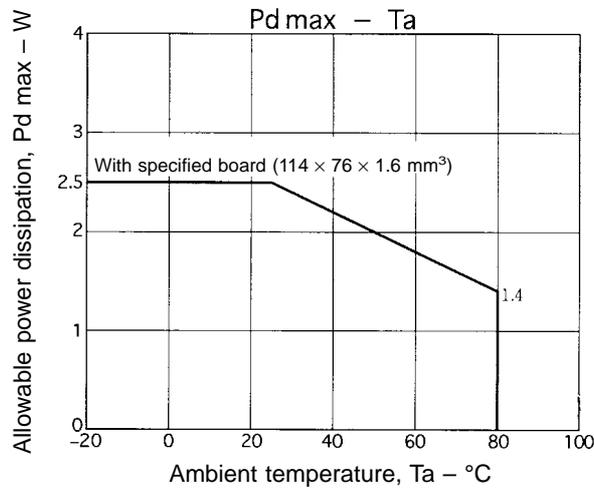
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Allowable Operating Conditions at Ta = 25°C

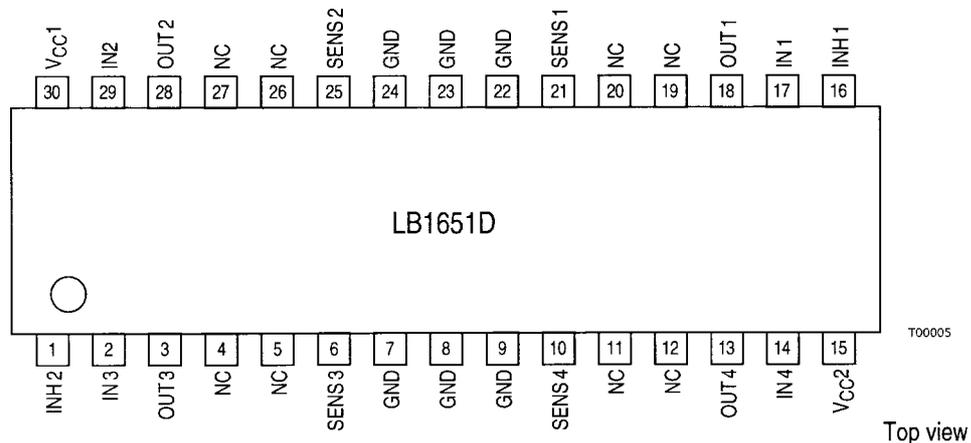
Parameter	Symbol	Conditions	Rating	Unit
Supply voltage	V _{CC1}		4.5 to 36	V
Logic supply voltage	V _{CC2}		4.5 to 36	V

Electrical Characteristics at Ta = 25°C, V_{CC1} = 24 V, V_{CC2} = 5 V

Parameter	Symbol	Conditions	min	typ	max	Unit
Supply current (Per channel)	I _{CC1}	V _{IN} = L, I _O = 0, Vinh = H			1.5	mA
		V _{IN} = H, I _O = 0, Vinh = H			6	mA
		Vinh = L			1	mA
Logic supply current	I _{CC2}	V _{IN} = L, I _O = 0, Vinh = H		44	60	mA
		V _{IN} = H, I _O = 0, Vinh = H			22	mA
		Vinh = L			24	mA
Low-level input voltage	V _{IL}		-0.3		+1.5	V
High-Level Input Voltage	V _{IH}	V _{CC2} ≤ 7 V	2.3		V _{CC2}	V
		V _{CC2} > 7 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 V		30	100	μA
Low-level inhibit voltage	VinhL		-0.3		+1.5	V
High-level inhibit voltage	VinhH	V _{CC2} ≤ 7 V	2.3		V _{CC2}	V
		V _{CC2} > 7 V	2.3		7	V
Low-level inhibit current	linhL		-100	-30		μA
High-level inhibit current	linhH				±10	μA
Saturation voltage	V _{CE(sat)H}	I _O = -1 A		1.4	1.8	V
	V _{CE(sat)L}	I _O = 1 A		1.2	1.8	V
Sensing voltage	V _{SENS}				2	V



Pin Assignment



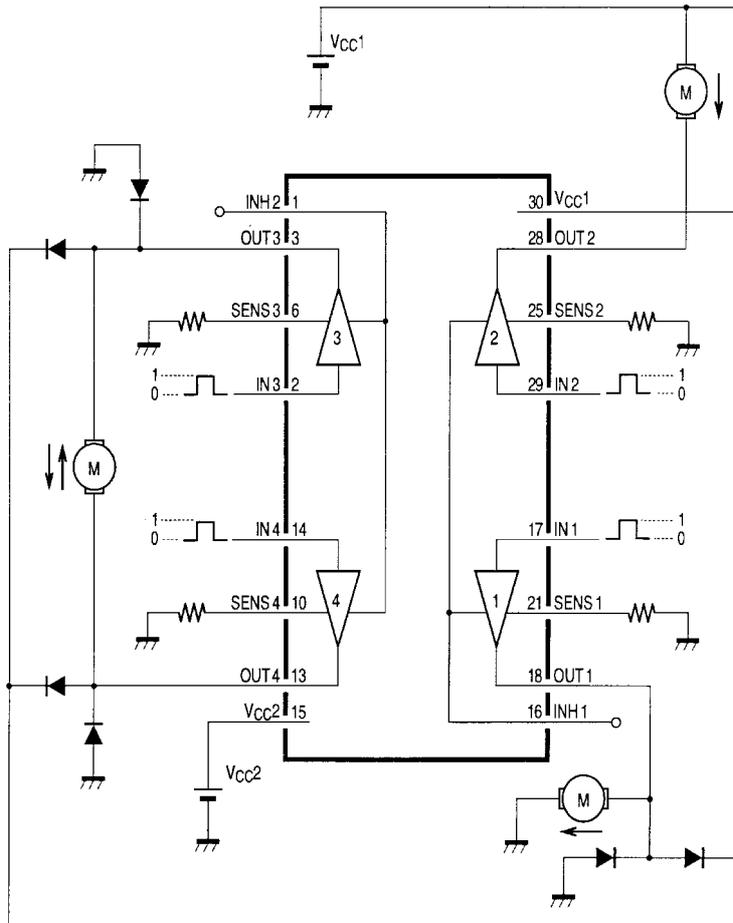
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Truth Table

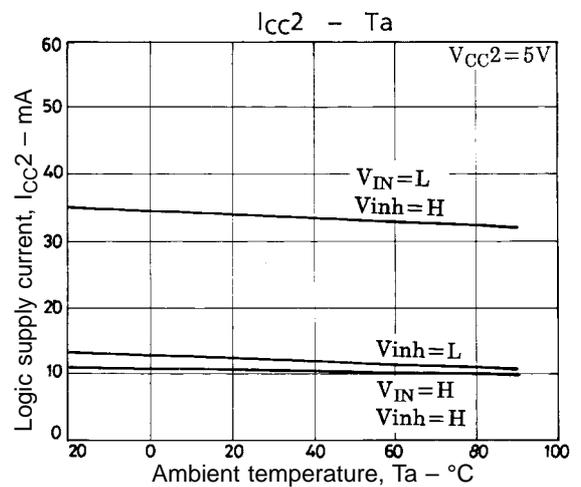
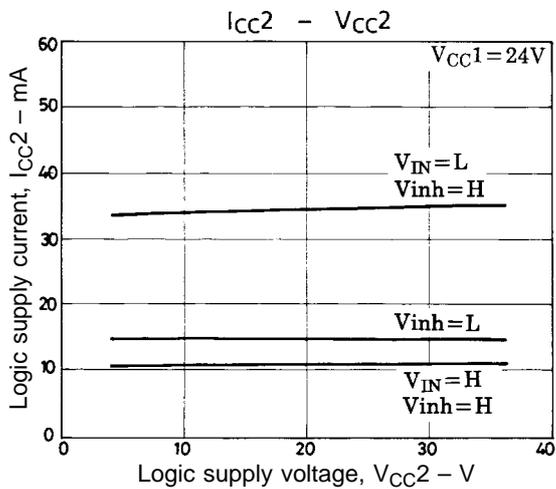
V_{IN} (per CH)	V_{inh}	V_O
H	H	H
L	H	L
H	L	Open*
L	L	Open*

*: High impedance

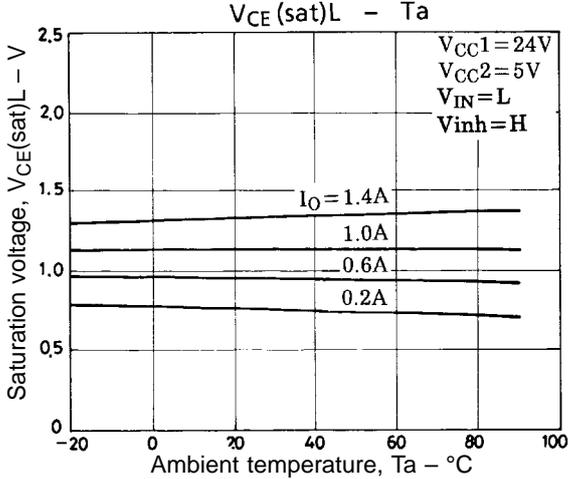
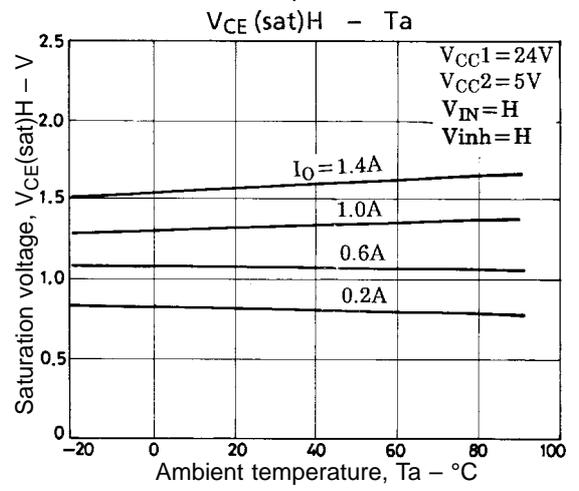
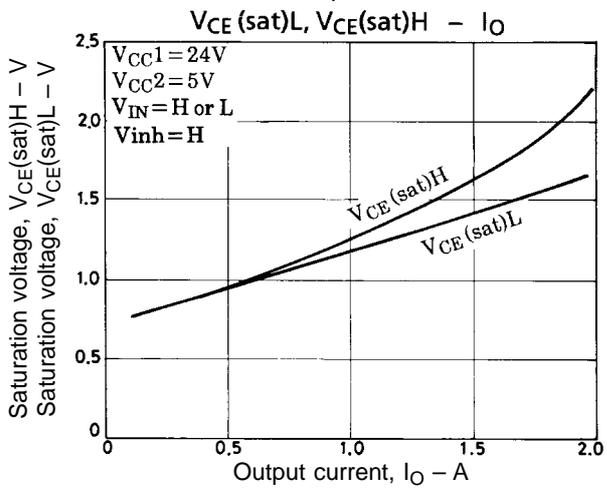
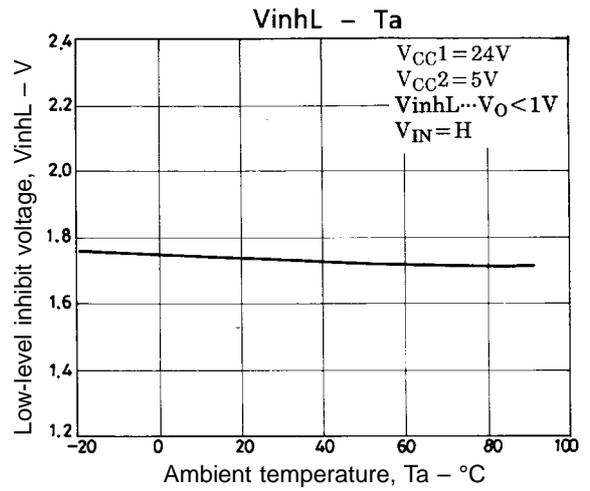
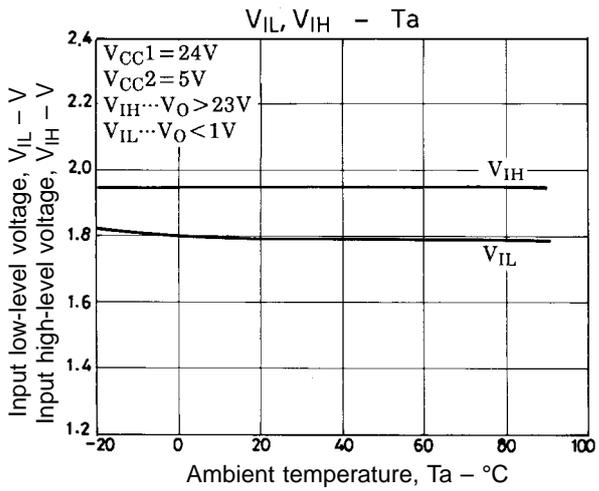
Sample Application Circuit



T00006



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