



### **Dual Bidirectional Motor Driver**

### **Overview**

The LB1651 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 Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> 1		36	V
Logic supply voltage	V <sub>CC</sub> 2		36	V
Input voltage	Vin		7	V
Inhibit voltage	Vinh		7	V
Peak output current	lout	1 ms non-repetitive	2	А
Allowable power dissipation	√ Pd max		3	W
Operating temperature	Topr		-20 to +80	°C
Storage temperature	Tstg		-40 to +150	°C

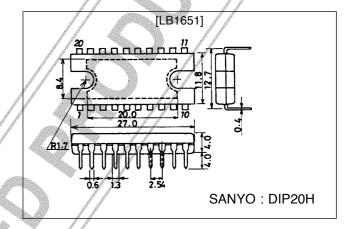
# Allowable Operating Conditions at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Rating	Unit
Supply voltage	V <sub>CC</sub> 1		4.5 to 36	V
Logic supply voltage	V <sub>CC</sub> 2		4.5 to 36	V

# **Package Dimensions**

unit: mm

#### 3037A-DIP20H

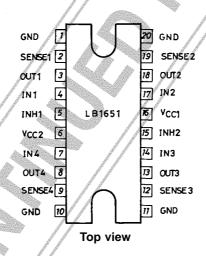


## LB1651

# Electrical Characteristics at Ta = 25°C, $V_{CC}1$ = 24 V, $V_{CC}2$ = 5 V

Parameter	Symbol	Conditions	min	typ	max	Unit
Cumply gurrant		$V_{IN} = L$ , $I_O = 0$ , $V_{IN} = H$			1.5	mA
Supply current (Per channel)	I <sub>CC</sub> 1	$V_{IN} = H$ , $I_O = 0$ , $V_{IN} = H$	P		6	mA
(i ei cilaillei)		Vinh = L		State of the State	1	mA
		$V_{IN} = L$ , $I_O = 0$ , $V_{IN} = H$		44	60	mA
Logic supply current	I <sub>CC</sub> 2	$V_{IN} = H$ , $I_O = 0$ , $V_{IN} = H$		The state of the s	22	mA
		Vinh = L	1	199	24	mA
Low-level input voltage	V <sub>IL</sub>		-0.3		+1.5	> V
High-level Input Voltage	V <sub>IH</sub>	$V_{CC}2 \le 7 \text{ V}$	2.3		V <sub>CC</sub> 2	V
		$V_{CC}^2 > 7 \text{ V}$	2.3		/ /7	V
Low-level input current	I <sub>IL</sub>	V <sub>IN</sub> = L			<u>/</u> ±10	$\mu$ A
High-level input current	I <sub>IH</sub>	$V_{IN} = H - 0.3 V$		30/	/ 100	$\mu$ A
Low-level inhibit voltage	VinhL		-0.3		+1.5	V
High-level inhibit voltage	VinhH	V <sub>CC</sub> 2 ≦ 7 V	2.3		V <sub>CC</sub> 2	V
I light-level lillibit voltage	VIIIIII	V <sub>CC</sub> 2 > 7 V	2.3		7	V
Low-level inhibit current	linhL		-100	<b>–</b> 30		$\mu$ A
High-level inhibit current	linhH				±10	μΑ
Staturation voltage	V <sub>CE</sub> (sat)H	I <sub>O</sub> = -1 A		1.4	1.8	V
	V <sub>CE</sub> (sat)L	I <sub>O</sub> = 1 A	1	1.2	1.8	V
Sensing voltage	V <sub>SENS</sub>		7		2	V

# **Pin Assignment**

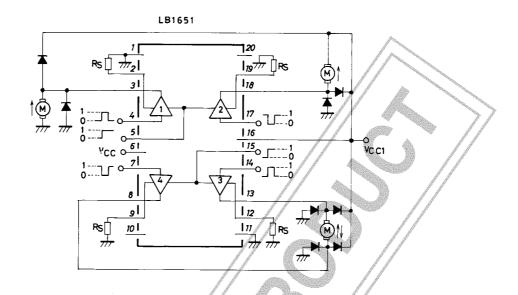


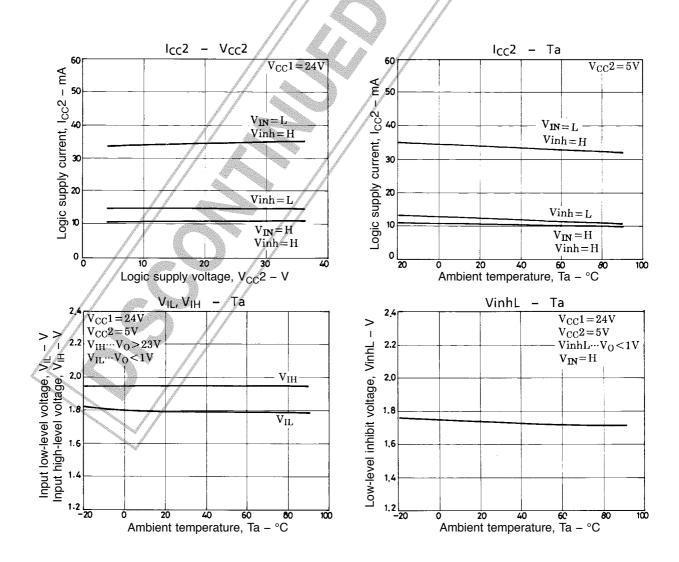
# **Truth Table**

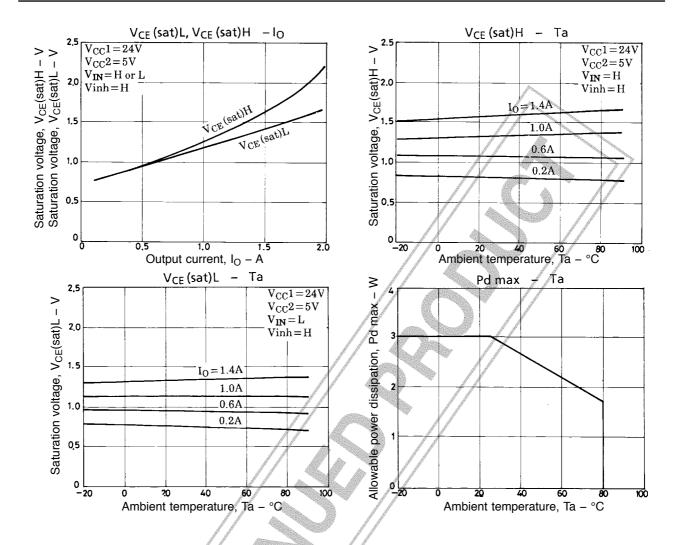
	# #
V <sub>IN</sub> (per CH) Vinh	V <sub>O</sub>
H// H	/ н
L/ H//	L
H L/	Open*
// L //	Open*

\*: High impedance

### **Sample Application Circuit**







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