



LB1645N

Bidirectional Motor Driver

Overview

The LB1645N is a bidirectional motor driver IC. Since it has a 2-input logic circuit and performs the function of bidirectional driving and braking, it is capable of direct driving 6V, 9V, 12V motors. The output voltage can be varied by using an external Zener diode.

Features

- 2-input logic can be used to exercise control of bidirectional driving and braking.
- On-chip elements to absorb dash current of motor.
- Input connectable direct to MOS LSI.
- Output voltage variable by use of external Zener diode.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$		18	V
Input voltage	V_{IN}		-0.3 to V_{CC}	V
Output current	I_{OUT}		± 1.6	A
Allowable power dissipation	$P_d\text{ max}$		2.2	W
Operating temperature	T_{opr}		-25 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +125	$^\circ\text{C}$

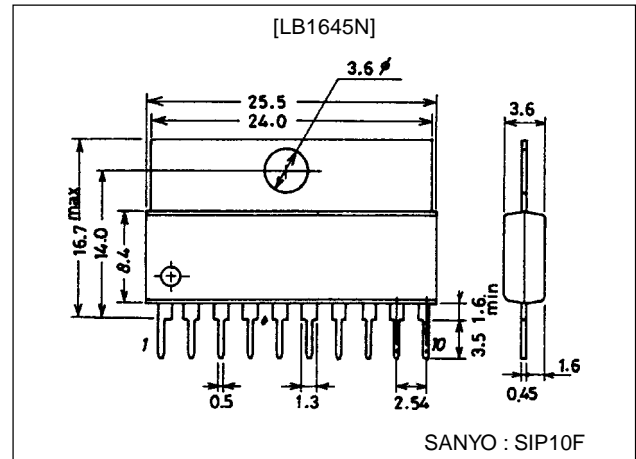
Allowable Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC1}		7 to 18	V
	V_{CC2}		5 to 18	V

Package Dimensions

unit:mm

3046B-SIP10F



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Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}=12\text{V}$, See Test Circuit.

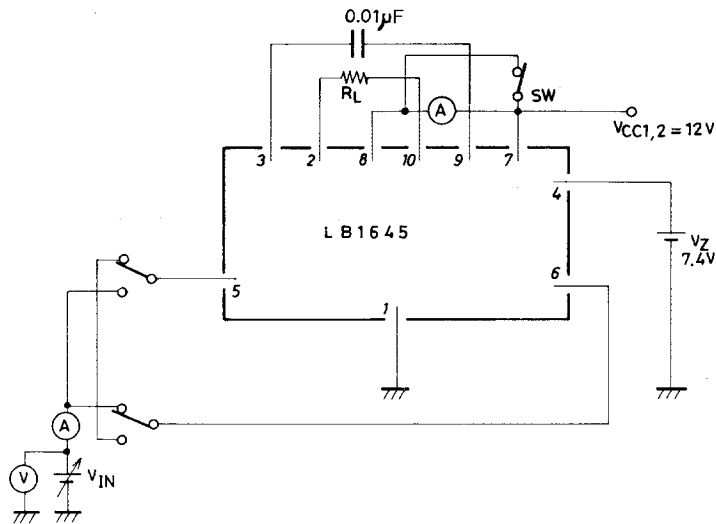
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input threshold voltage	V_{th}	$R_L = \infty$	1.1	1.3	1.5	V
Mimimum input on current	I_{IN}	$R_L = \infty$		10	15	μA
Output voltage	V_O	$R_L = 60\Omega$, $V_Z = 7.4\text{V}$	6.6	7.2	7.4	V
Output leakage current	I_{OL}	Pins5, 6 GND, $R_L = \infty$		0.01	1.0	mA
Current drain	I_{CC}	Pins5, 6 GND, $R_L = \infty$	3	6	10	mA
Saturation voltage (upper)	V_{sat1}	$V_{CC}=12\text{V}$, $I_{OUT}=300\text{mA}$		1.9	2.2	V
	$V_{sat1'}$	$V_{CC}=12\text{V}$, $I_{OUT}=500\text{mA}$		1.9	2.3	V
Saturation voltage (lower)	V_{sat2}	$V_{CC}=12\text{V}$, $I_{OUT}=300\text{mA}$		0.25	0.5	V
	$V_{sat2'}$	$V_{CC}=12\text{V}$, $I_{OUT}=500\text{mA}$		0.4	0.65	V

Truth Table

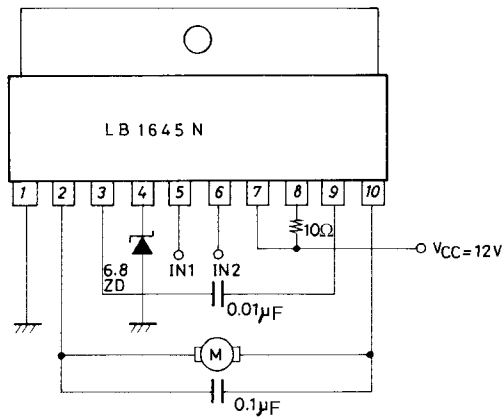
Input		Output		Function
IN1	IN2	OUT1	OUT2	
0	0	0	0	Braking
1	0	1	0	Forward (reverse) drive
0	1	0	1	Reverse (forward) drive
1	1	0	0	Braking

Input level
1 : 2.0V or more
0 : 0.7V or less

Test Circuit

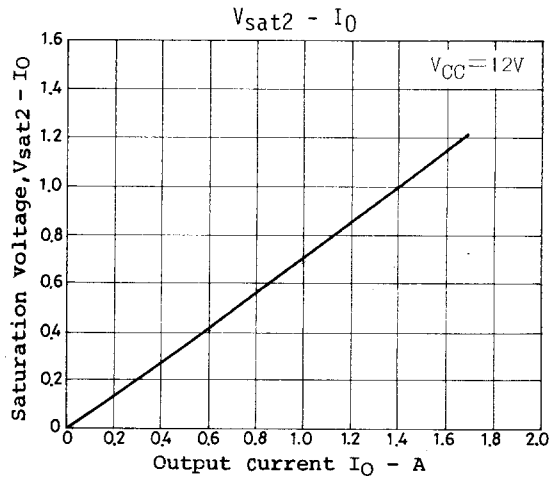
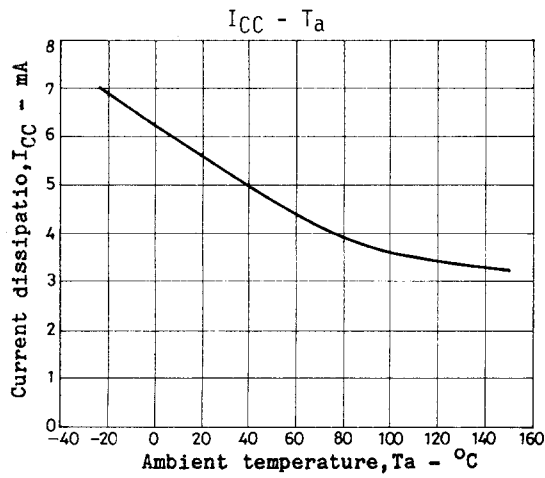
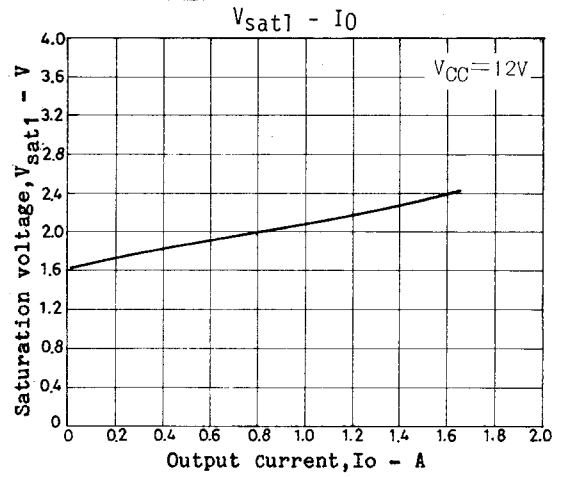
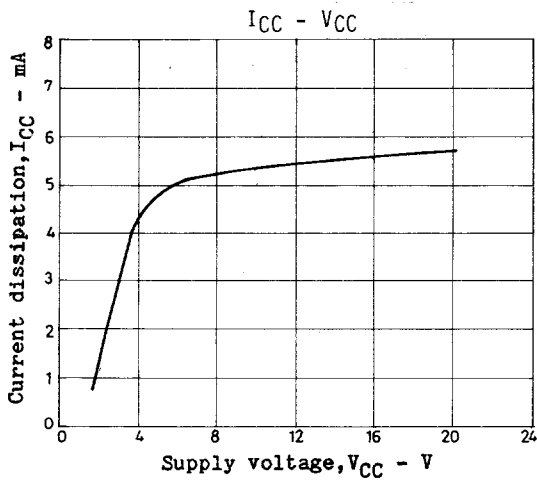
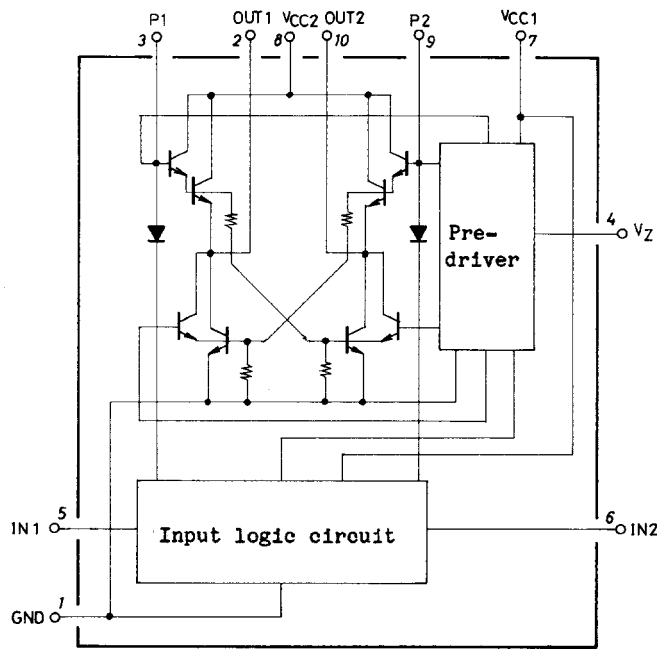


Sample Application Circuit : 6V motor

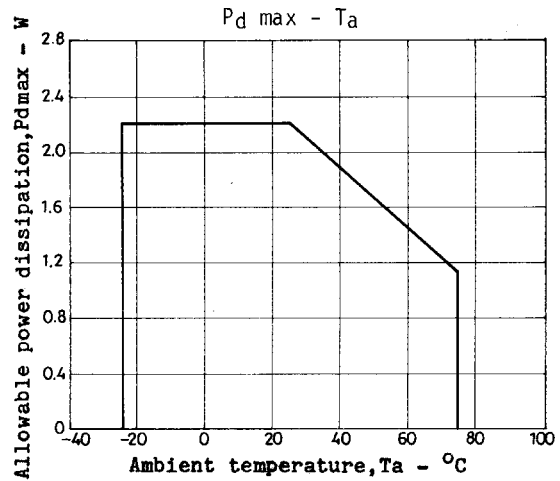
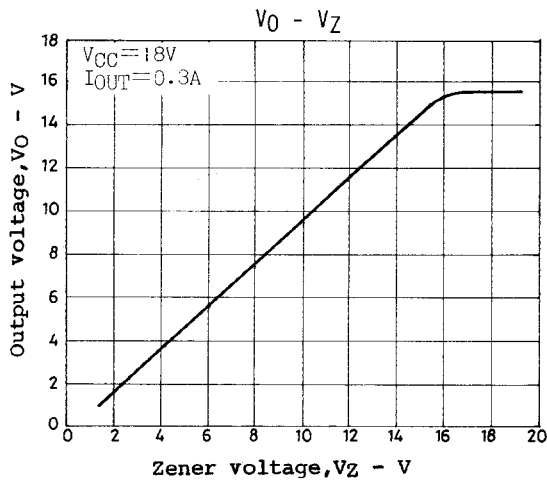


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Equivalent Circuit Block Diagram



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