



LB1642

Bidirectional Motor Driver with Braking Function

Overview

The LB1642 is a bidirectional motor driver IC. It is especially suited for use in motor drive applications where the arm control function of players and the auto reverse function of cassette decks are performed.

Features

- On-chip braking function.
- On-chip diode to absorb dash current.
- Wide operating voltage range (4 to 16V).
- Direct drivable with TTL.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		18	V
Input voltage	V_{IN}		-0.3 to V_{CC}	V
Output current	I_O max	$t=5\text{ms}$, Cycle=0.2Hz or less	0.7	A
Allowable power dissipation	P_d max		1.0	W
Operating temperature	T_{opr}		-25 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +125	$^\circ\text{C}$

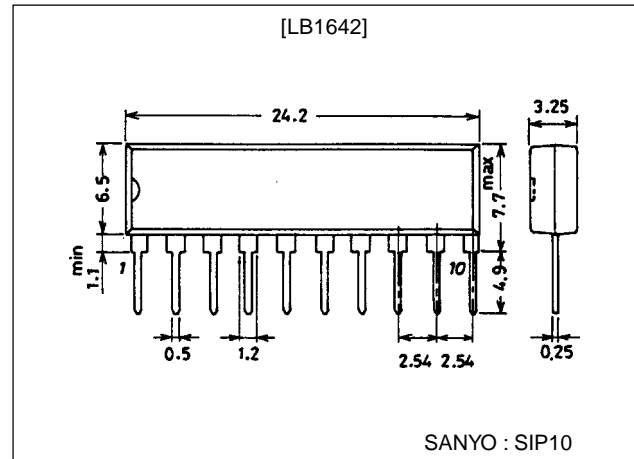
Allowable Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		4 to 16	V
High-level input voltage	V_{IH}		2 to V_{CC}	V
Low-level input voltage	V_{IL}		-0.3 to +0.4	V
Output current	I_O		-100 to +100	mA
Forward reverse inhibit time	t_{OFF}		10 or more	μs

Package Dimensions

unit:mm

3043A-SIP10



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73098HA (KT)/N3093TS/9087KI/D163/N173KI, TS No.1358-1/3

LB1642

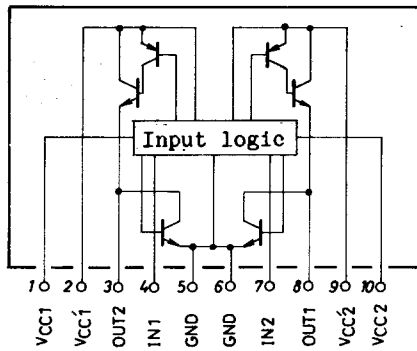
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}=V_{CC'}=12\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
High-level output voltage 1	V_{OH1}	V_{I1} or $V_{I2}=2\text{V}$, $I_O=-50\text{mA}$	11.0			V
High-level output voltage 2	V_{OH2}	V_{I1} or $V_{I2}=2\text{V}$, $I_O=-100\text{mA}$	10.9			V
Low-level output voltage 1	V_{OL1}	V_{I1} or $V_{I2}=2\text{V}$, $I_O=50\text{mA}$			0.3	V
Low-level output voltage 2	V_{OL2}	V_{I1} or $V_{I2}=2\text{V}$, $I_O=100\text{mA}$			0.35	V
Interoutput voltage	$V_{O1}-V_{O2}$	V_{I1} or $V_{I2}=2\text{V}$, $I_O=\pm 100\text{mA}$	10.6			V
Input current	I_I	$V_I=2\text{V}$	70		200	μA
Output leakage current	$I_{O\text{ leak}}$	$V_{CC}=V_{CC'}=18\text{V}$, $V_O=0\text{V}$, $V_{IN1}=V_{IN2}=0\text{V}$, $V_O=18\text{V}$			± 100	μA
Current drain	I_{CC}	$V_{IN1}=2\text{V}$ or $V_{IN2}=2\text{V}$, $V_{CC}=V_{CC'}=16\text{V}$			30	mA
		$V_{IN1}=V_{IN2}=2\text{V}$, $V_{CC}=V_{CC'}=16\text{V}$			60	mA

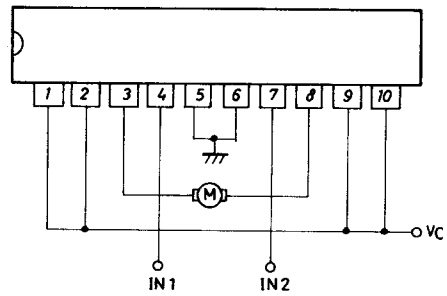
Control Mode

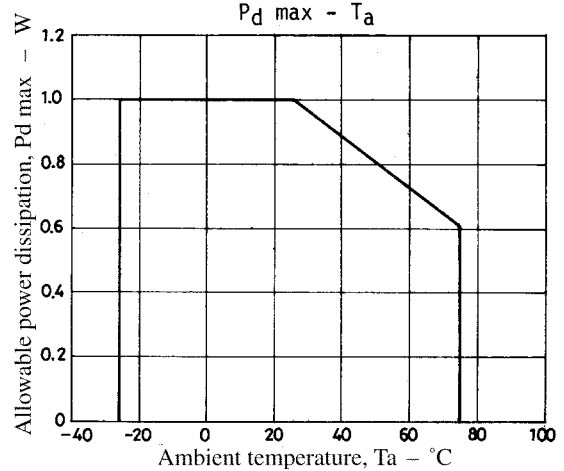
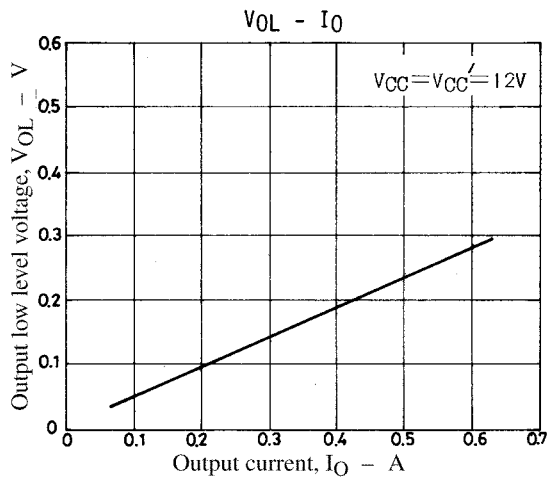
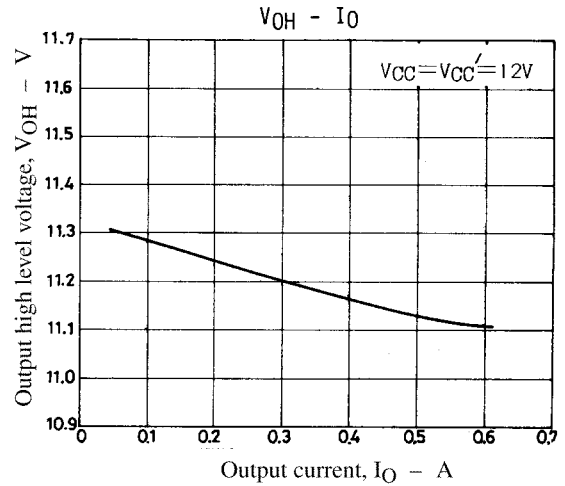
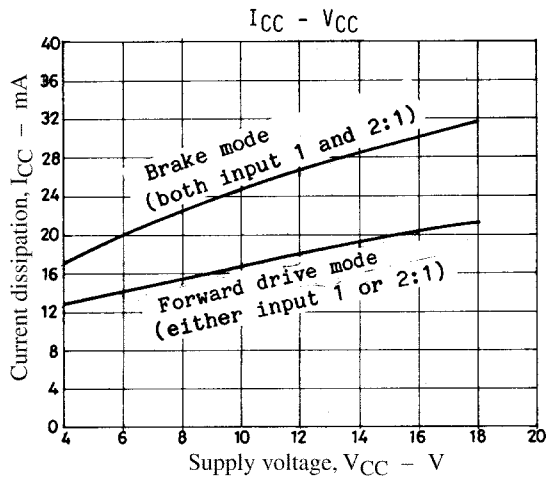
Input		Output		Remarks
1	2	1	2	
0	0	-	-	Open
1	0	1	0	Forward drive
0	1	0	1	Reverse drive
1	1	0	0	Braking

Equivalent Circuit Block Diagram



Sample Application Circuit





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