



# 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	$^\circ\text{C}$

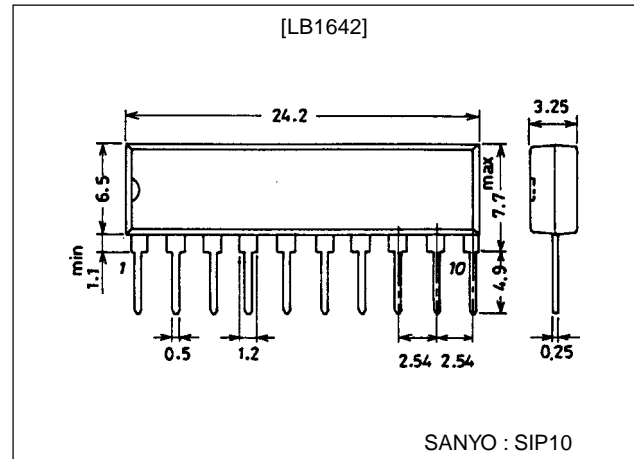
#### Allowable Operating Conditions at $T_a = 25^\circ\text{C}$

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	$\mu\text{s}$

### Package Dimensions

unit:mm

#### 3043A-SIP10



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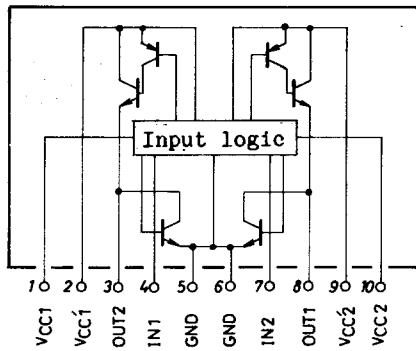
## Electrical Characteristics at $T_a = 25^\circ\text{C}$ , $V_{CC}=V_{CC'}=12\text{V}$

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	$\mu\text{A}$
Output leakage current	$I_{O\text{ leak}}$	$V_{CC}=V_{CC'}=18\text{V}$ , $V_O=0\text{V}$ , $V_{IN1}=V_{IN2}=0\text{V}$ , $V_O=18\text{V}$			$\pm 100$	$\mu\text{A}$
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

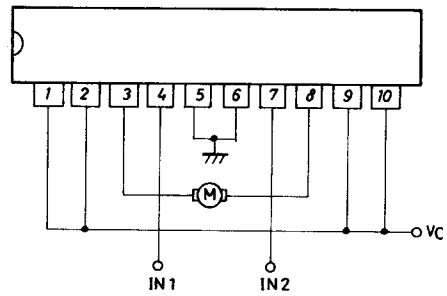
## Control Mode

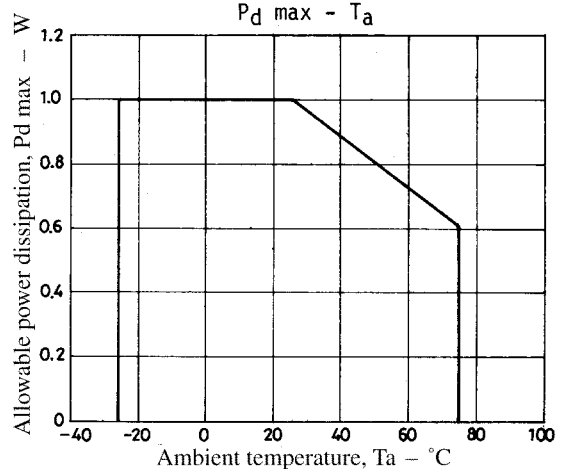
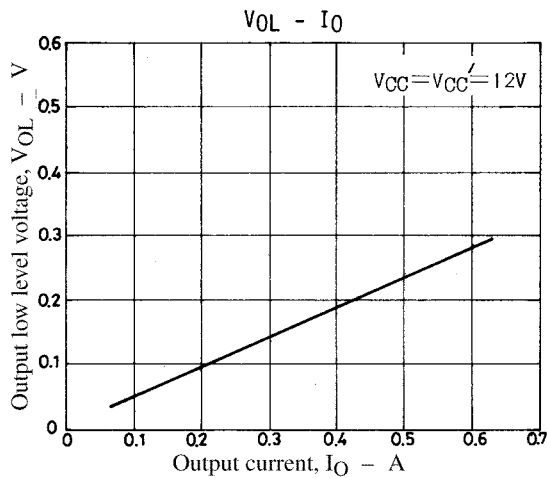
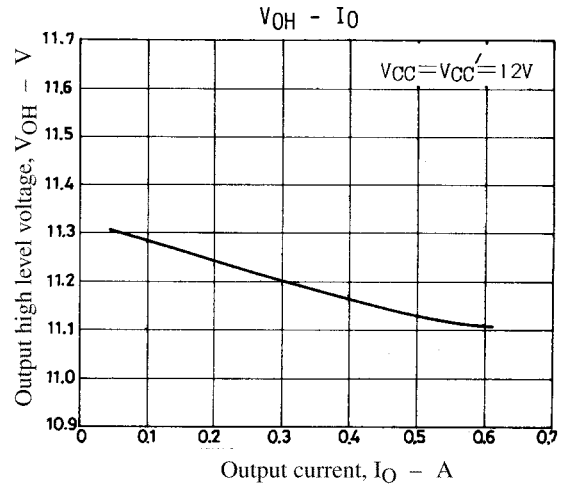
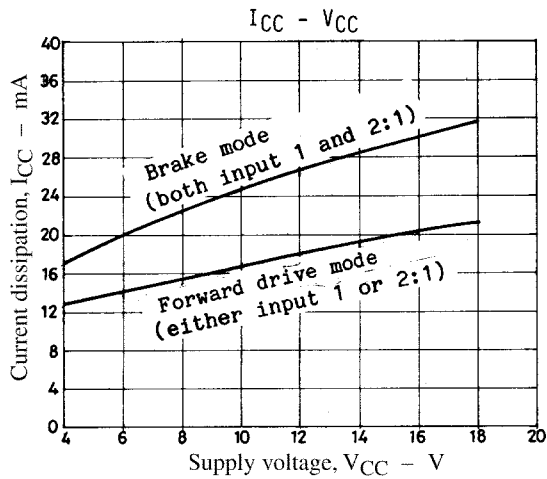
Input		Output		Remarks
1	2	1	2	
0	0	-	-	Open
1	0	1	0	Forward drive
0	1	0	1	Reverse drive
1	1	0	0	Braking

## Equivalent Circuit Block Diagram



## Sample Application Circuit





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