Monolithic Digital IC



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.

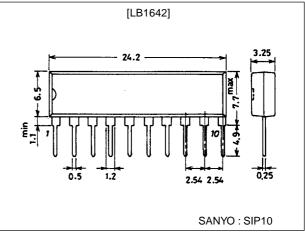
## Features

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

# **Package Dimensions**

unit:mm

### 3043A-SIP10



# Specifications

#### Absoluite Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max		18	V
Input voltage	VIN		-0.3 to V <sub>CC</sub>	V
Output current	I <sub>O</sub> max	t=5ms, Cycle=0.2Hz or less	0.7	A
Allowable power dissipation	Pd max		1.0	W
Operating temperature	Topr		-25 to +75	°C
Storage temperature	Tstg		-55 to +125	°C

#### Allowable Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	VCC		4 to 16	V
High-level input voltage	VIH		2 to V <sub>CC</sub>	V
Low-level input voltage	VIL		-0.3 to +0.4	V
Output current	IO		-100 to +100	mA
Forward reverse inhibit time	tOFF		10 or more	μs

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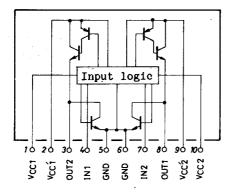
# Electrical Characteristics at Ta = 25 $^{\circ}C, V_{CC}$ = $V_{CC}$ '=12V

Parameter	Symbol	Conditions		Ratings		
Falameter	Symbol			typ	max	Unit
High-level output voltage 1	VOH1	V <sub>I1</sub> or V <sub>I2</sub> =2V, I <sub>O</sub> =-50mA				V
High-level output voltage 2	VOH2	V <sub>I1</sub> or V <sub>I2</sub> =2V, I <sub>O</sub> =-100mA				V
Low-level output voltage 1	V <sub>OL1</sub>	V <sub>I1</sub> or V <sub>I2</sub> =2V, I <sub>O</sub> =50mA			0.3	V
Low-level output voltage 2	V <sub>OL2</sub>	V <sub>11</sub> or V <sub>12</sub> =2V, I <sub>O</sub> =100mA			0.35	V
Interoutput voltage	V01-V02	V <sub>I1</sub> or V <sub>I2</sub> =2V, I <sub>O</sub> =±100mA				V
Input current	lj	V <sub>I</sub> =2V			200	μA
Output leakage current	I <sub>O</sub> leak	V <sub>CC</sub> =V <sub>CC</sub> '=18V, V <sub>O</sub> =0V, V <sub>IN</sub> 1=V <sub>IN</sub> 2=0V, V <sub>O</sub> =18V			±100	μA
Current drain	Icc	V <sub>IN1</sub> =2V or V <sub>IN2</sub> =2V, V <sub>CC</sub> =V <sub>CC</sub> '=16V			30	mA
		V <sub>IN1</sub> =V <sub>IN2</sub> =2V, V <sub>CC</sub> =V <sub>CC</sub> '=16V			60	mA

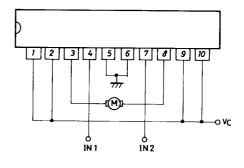
#### **Control Mode**

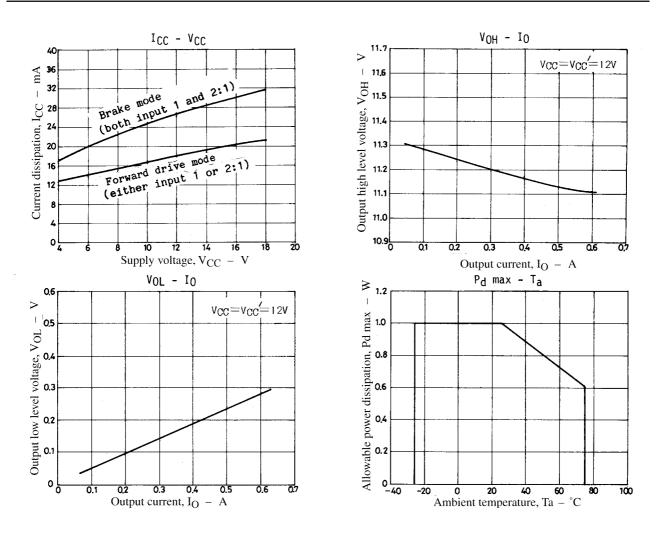
Input		Output		Remarks
1	2	1	2	Remarks
0	0	-	-	Open
1	0	1	0	Forward drive
0	1	0	1	Reverse drive
1	1	0	0	Braking

### Equivalent Circuit Block Diagram



### Sample Application Circuit





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