

# ★ LB1630

The LB1630 is a low-saturation bidirectional motor driver IC for use in low-voltage applications. It is especially suited for use in small-sized low-voltage motors for printers, cassette tape recorders, and consumer equipment.

## Features

- Capable of operating from a low voltage (2.5V min). Low current dissipation at the standby mode ( $I_{CC} \leq 30\mu A$ )
- Low-saturation voltage (upper transistor + lower transistor residual voltage 1.2V max at 400mA)
- On-chip spark killer diodes

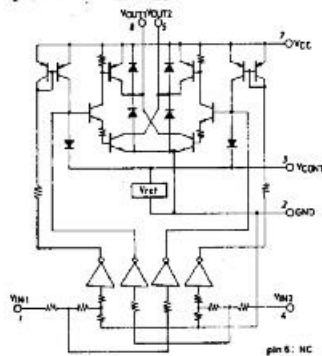
## Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Value	Unit
Maximum Supply Voltage	$V_{CCmax}$	-0.3 to +7.0	V
Output Supply Voltage	$V_{OUT}$	-0.3 to $V_{CC}+V_F$	V
Input Supply Voltage	$V_{IN}$	-0.3 to +7.0	V
Allowable Load Resistance	$R_{Lmin}$	Pulse width < 50ms Duty 10%	3 ohm
GND Pin Flow-out Current	$I_{GND}$	Pulse width < 50ms Duty 10%	2 A
Allowable Power Dissipation	$P_{dmax}$		785 mW
Operating Temperature	$T_{opr}$		-20 to +75 $^\circ C$
Storage Temperature	$T_{stg}$		-40 to +125 $^\circ C$

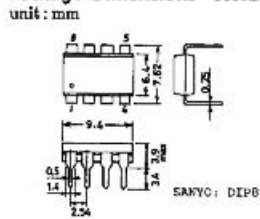
## Allowable Operating Conditions at $T_a=25^\circ C$

Parameter	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	2.5 to 6.0	V
Input "H"-Level Voltage	$V_{IH}$	2.0 to 6.0	V
Input "L"-Level Voltage	$V_{IL}$	-0.3 to +0.7	V

## Equivalent Circuit



## Package Dimensions 3001B



## Electrical Characteristics at $T_a=25^\circ C$

Parameter	Symbol	Conditions	min	typ	max	unit
Output Saturation Voltage (upper side + lower side)	$V_{OUT(1)}$	$V_{CC}=3V, V_{IN}=3V, I_{OUT}=200mA$		0.6		V
	$V_{OUT(2)}$	$V_{CC}=3.5V, V_{IN}=3V, I_{OUT}=400mA$		1.2		V
Output Sustain Voltage	$V_{O(sus)}$	$I_{OUT}=400mA$		9		V
Output Leakage Current	$I_{O(leak)}$	$V_{CC}=6V$			30	$\mu A$
Input Current	$I_{IN}$	$V_{IN}=6V$			1.0	mA
Spark Killer Diode Reverse Current	$I_S(leak)$	$V_{CC}=6V, V_{IN}=0V$			30	$\mu A$
Forward Voltage	$V_{SF}$	$I_{OUT}=500mA$			1.7	V
Current Dissipation	$I_{CC}$	$V_{CC}=3.5V, V_{IN}=3V, I_{OUT}=400mA$			430	mA

## Truth Table

IN1	IN2	OUT1	OUT2	MOTOR
H	L	H	L	Forward
L	H	L	H	Reverse
H	H	off	off	Standby
L	L	off	off	Standby

## Sample Application Circuit

