



No.1261E

LB1630

**Low-Saturation Bidirectional Motor Driver
for Low-Voltage Applications**

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

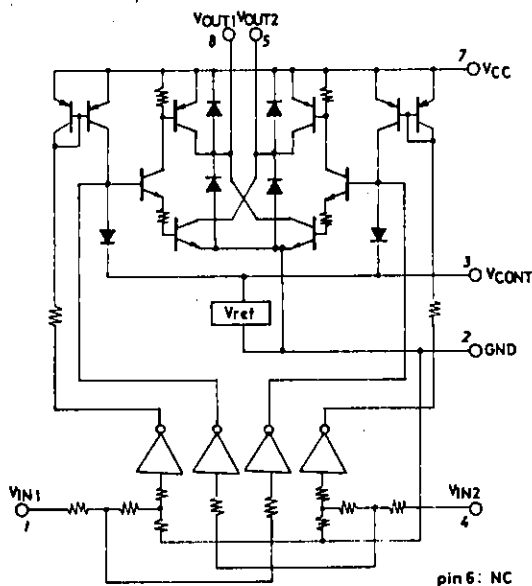
Absolute Maximum Ratings at Ta=25°C

			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_{Mmin}	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	°C
Storage Temperature	T_{stg}	-40 to +125	°C

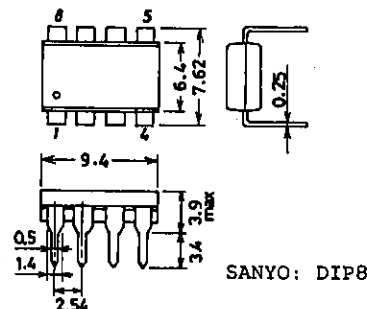
Allowable Operating Conditions at Ta=25°C

			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
unit: mm



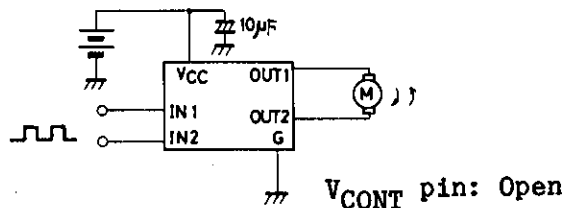
LB1630

Electrical Characteristics at Ta=25°C				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	µA
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	µA
Forward Voltage	V _{SF}	I _{OUT} =500mA				1.7	V
Current Dissipation	I _{CC}	I _{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



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