



**LB1641**

**Bidirectional Motor Driver**

The LB1641 is a bidirectional motor driver IC. Since it has a 2-input logic circuit and performs the functions of bidirectional driving and braking, it is capable of direct driving 6V, 9V, 12V motors. The output voltage can be varied by using an external zener diode.

**Features**

- . 2-input logic can be used to exercise control of bidirectional driving and braking.
- . On-chip elements to absorb dash current of motor
- . Input interfaceable to MOS LSI
- . Output voltage variable by use of external zener diode

**Absolute Maximum Ratings at Ta=25°C**

			unit
Maximum Supply Voltage	$V_{CCmax}$	18	V
Input Voltage	$V_{IN}$	-0.3 to $V_{CC}$	V
Output Current	$I_{OUT}$	$\pm 1.6$	A
Allowable Power Dissipation	$P_{dmax}$	1.2	W
Operating Temperature	$T_{opr}$	-25 to +75	°C
Storage Temperature	$T_{stg}$	-55 to +125	°C

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

			unit
Supply Voltage	$V_{CC1}$	7 to 18	V
	$V_{CC2}$	5 to 18	V

**Electrical Characteristics at Ta=25°C,  $V_{CC}=12V$**

		min	typ	max	unit
Input Threshold Voltage	$V_{th}$ $R_L=\infty$	1.1	1.3	1.5	V
Minimum Input ON-State Current	$I_{IN}$ $R_L=\infty$		10	15	$\mu A$
Output Voltage	$V_O$ $R_L=60ohms, V_Z=7.4V$	6.6	7.2	7.4	V
Output Leakage Current	$I_{OL}$ Pins5,6 GND, $R_L=\infty$		0.01	1.0	mA
Current Dissipation	$I_{CC}$ Pins5,6 GND, $R_L=\infty$	3	6	10	mA
Saturation Voltage (Upper)	$V_{sat1}$ $V_{CC}=12V, I_{OUT}=300mA$		1.9	2.2	V
	$V_{sat1}$ $V_{CC}=12V, I_{OUT}=500mA$		1.9	2.3	V
Saturation Voltage (Lower)	$V_{sat2}$ $V_{CC}=12V, I_{OUT}=300mA$		0.25	0.5	V
	$V_{sat2}$ $V_{CC}=12V, I_{OUT}=500mA$		0.4	0.65	V

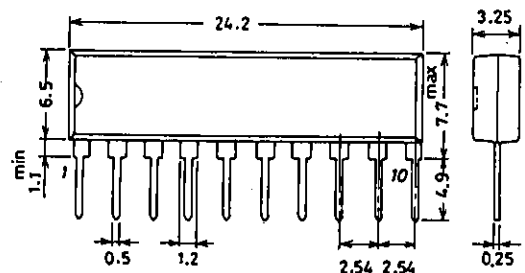
**Truth Table**

Input		Output		Operation
IN1	IN2	OUT1	OUT2	
0	0	0	0	Braking
1	0	1	0	Forward (reverse) drive
0	1	0	1	Reverse (forward) drive
1	1	0	0	Braking

Input level      1: 2.0V or greater  
                      0: 0.7V or less

**Package Dimensions 3043A**

(unit: mm)



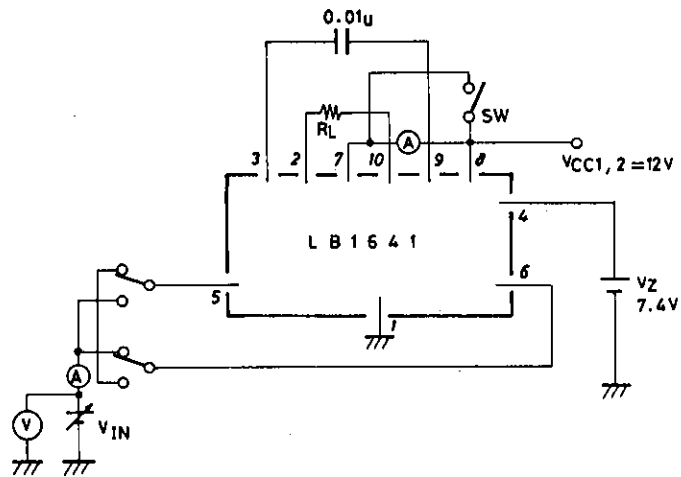
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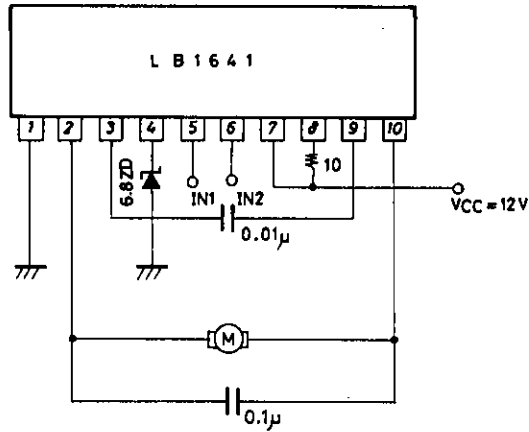
## Test Circuit



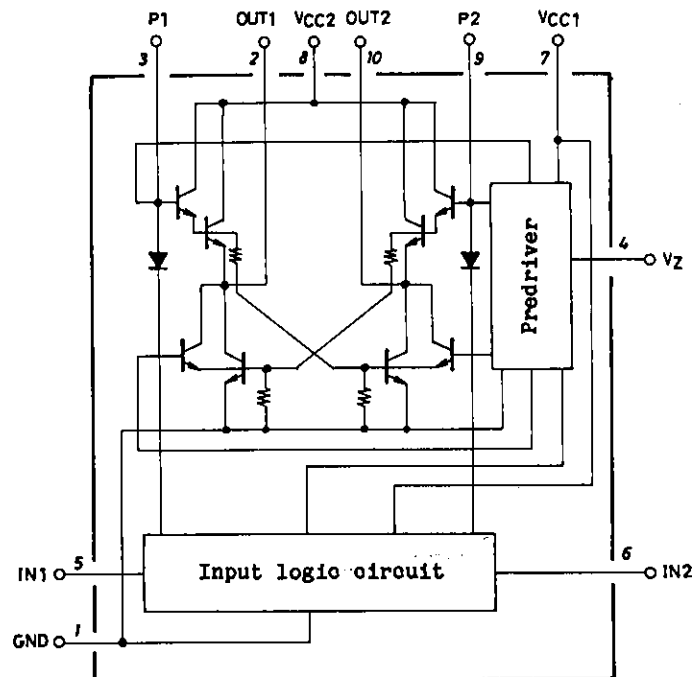
Unit (capacitance: F)

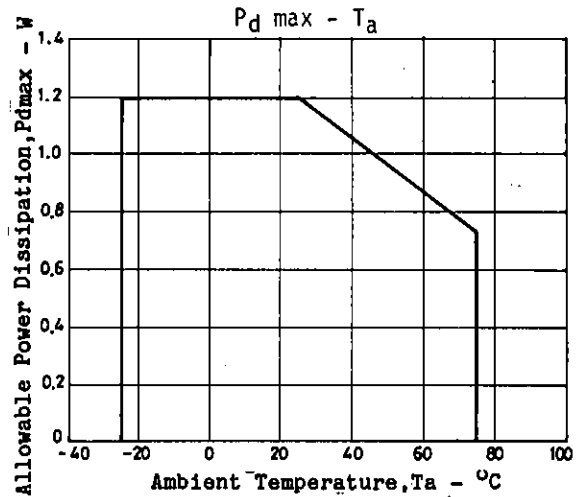
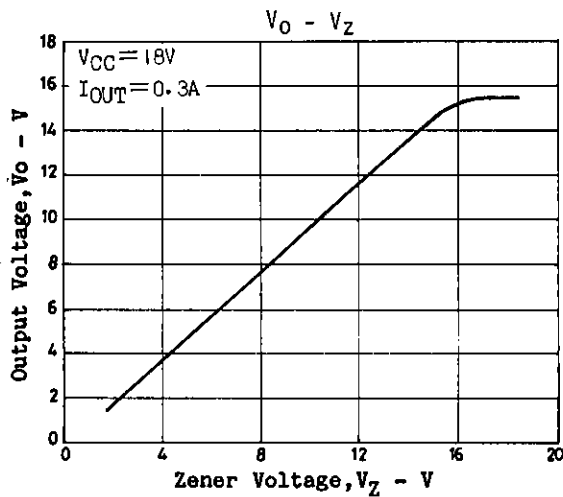
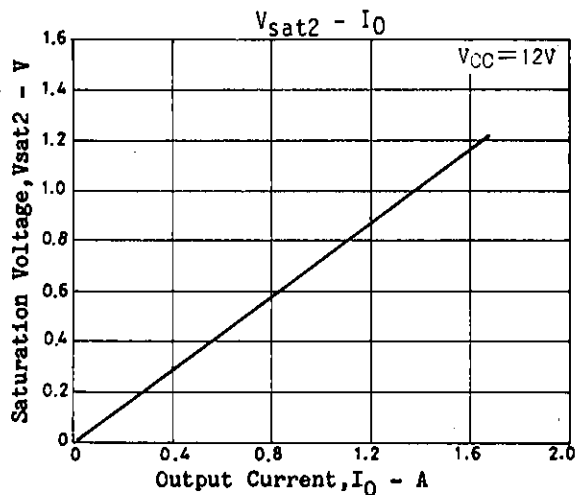
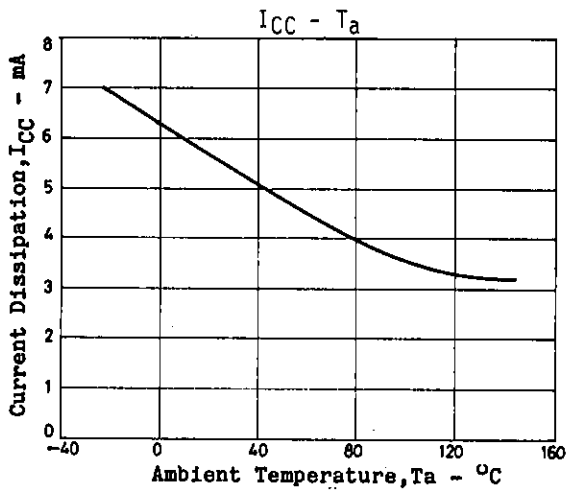
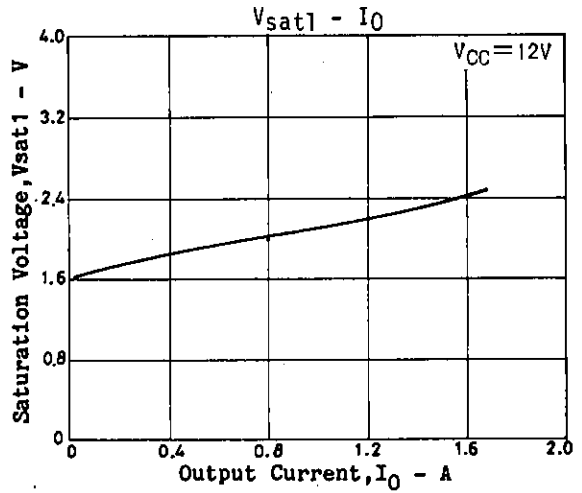
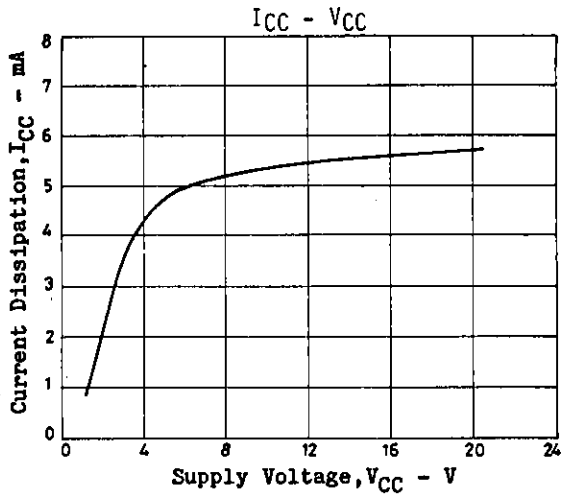
## Sample Application Circuit: 6V motor circuit

Unit (resistance: Ω, capacitance: F)



## Equivalent Circuit Block Diagram





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