

**LB1640N****Forward/Reverse Motor Driver with Brake****Overview**

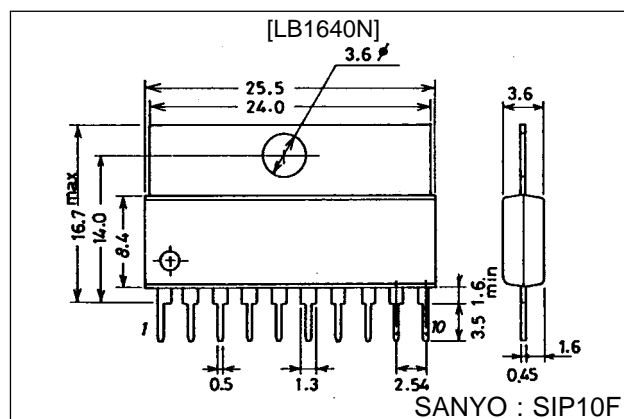
The LB1640N is a motor driver IC with a forward/reverse control feature. This IC is optimal for driving motors used in front-loading VCRs and auto-reverse cassette decks.

**Features**

- Brake function on chip
- Dash current absorption diode on chip
- Broad operating voltage range (4 to 18 V)
- Direct drive made possible by TTL

**Package Dimensions**

unit : mm

**3046B-SIP10F****Specifications****Absolute Maximum Ratings at Ta = 25 °C**

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub>		20	V
Input voltage	V <sub>IN</sub>		-0.3 to V <sub>CC</sub>	V
Output current	I <sub>Omax</sub>	t = 5 ms, with cycle time of 5 sec. or more	1.6	A
Allowable power dissipation	Pd max	No heat sink	2.5	W
		When using heat sink ( 100 x 100 x 1.5 mm <sup>3</sup> )	7.0	W
Operating temperature	Topr		-25 to +75	°C
Storage temperature	Tstg		-55 to +125	°C

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

Parameter	Symbol	Ratings	Unit
Supply voltage	V <sub>CC</sub>	4 to 18	V
High-level input voltage	V <sub>IH</sub>	3 to V <sub>CC</sub>	V
Low-level input voltage	V <sub>IL</sub>	-0.3 to +0.4	V
Output current	I <sub>O</sub>	-500 to +500	mA
Forward ↔ Reverse inhibit time	T <sub>OFF</sub>	10 or longer	μs

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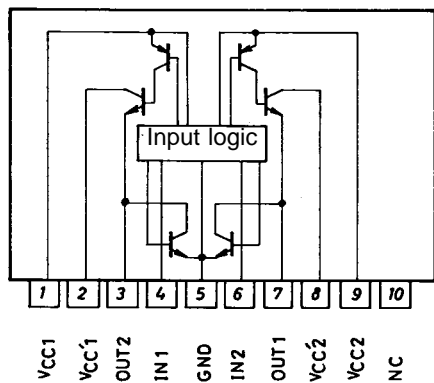
## Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$ , $V_{CC} = V_{CC'} = 12\text{ V}$

Parameter	Symbol	Output	min	typ	max	Unit
Supply Current	$I_{CC}$	$V_{I1}$ or $V_{I2} = 3\text{ V}$ , $R_L = \infty$ , $V_{CC} = V_{CC'} = 16\text{ V}$			40	mA
High-level output voltage	$V_{OH1}$	$V_{I1}$ or $V_{I2} = 3\text{ V}$ , $I_O = -300\text{ mA}$	10.8			V
	$V_{OH2}$	$V_{I1}$ or $V_{I2} = 3\text{ V}$ , $I_O = -500\text{ mA}$	10.7			V
Low-level output voltage	$V_{OL1}$	$V_{I1}$ or $V_{I2} = 3\text{ V}$ , $I_O = 300\text{ mA}$			0.5	V
	$V_{OL2}$	$V_{I1}$ or $V_{I2} = 3\text{ V}$ , $I_O = 500\text{ mA}$			0.65	V
Interoutput voltage	$V_{O1}-V_{O2}$	$V_{I1}$ or $V_{I2} = 3\text{ V}$ , $I_O = \pm 300\text{ mA}$	10.3			V
Input voltage	$V_I$	$I_I = 500\text{ }\mu\text{A}$	3			V
Output leakage current	$I_{O\text{ Leak}}$	$V_{CC} = V_{CC'} = 20\text{ V}$ $V_{IN1} = V_{IN2} = 0\text{ V}$ , $V_O = 20\text{ V}$ or $0\text{ V}$			$\pm 100$	$\mu\text{A}$

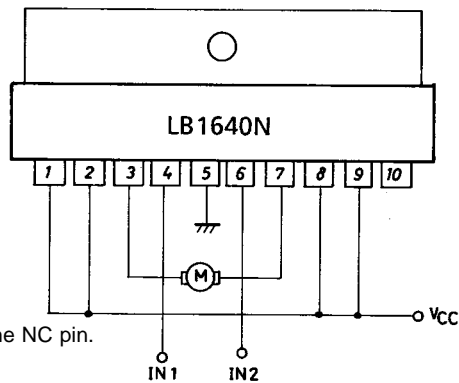
## Control Modes

Input		Output		Remarks
1	2	1	2	
0	0	—	—	Open
1	0	1	0	Forward
0	1	0	1	Reverse
1	1	0	0	Brake

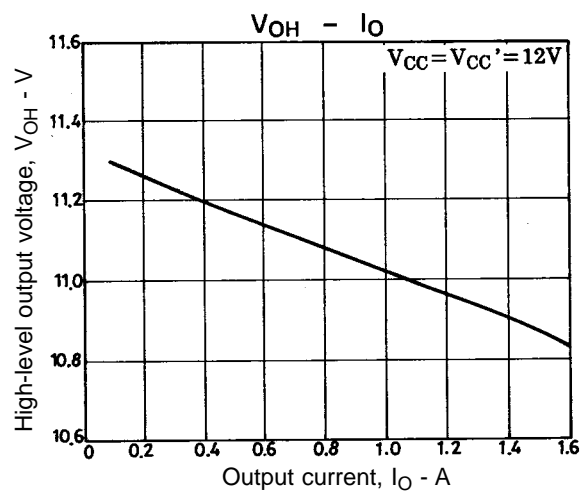
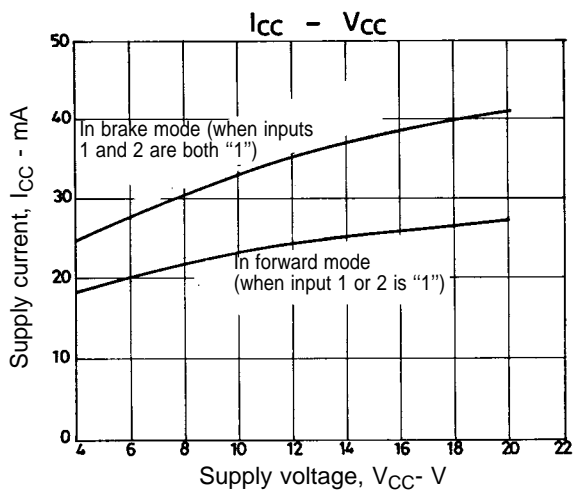
## Equivalent Circuit Block Diagram



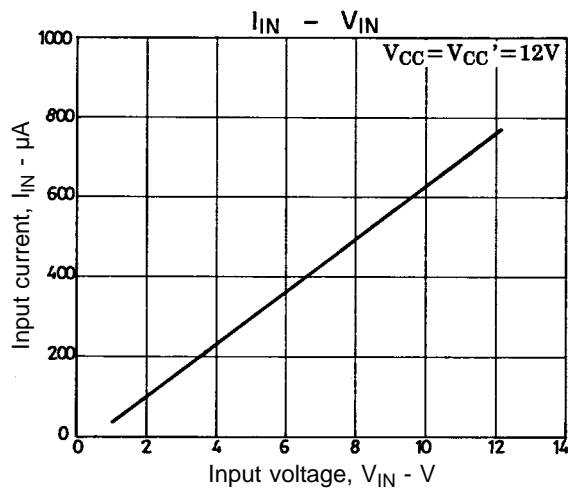
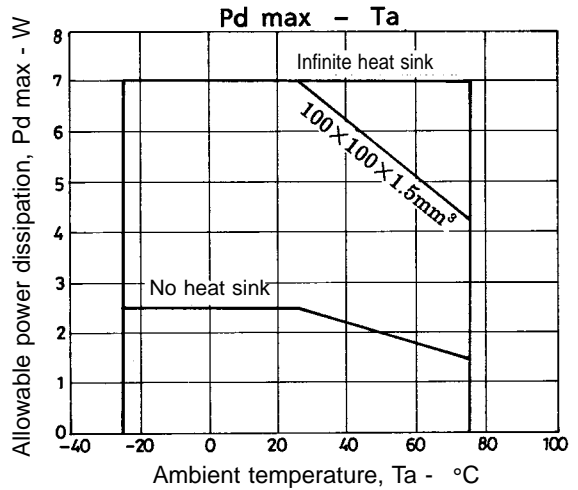
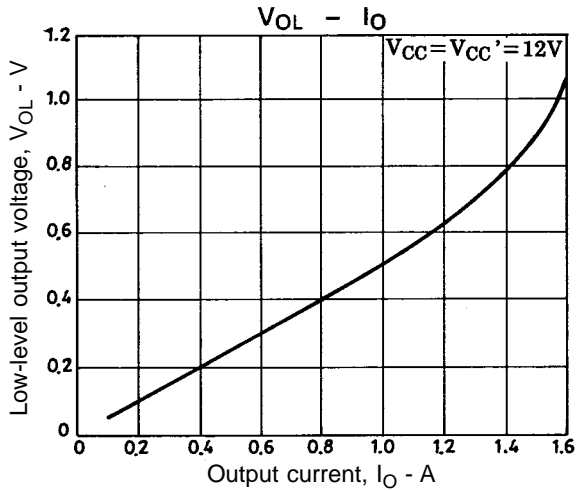
## Sample Application Circuit



Note: Do not use the NC pin.



# LB1640N



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