

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

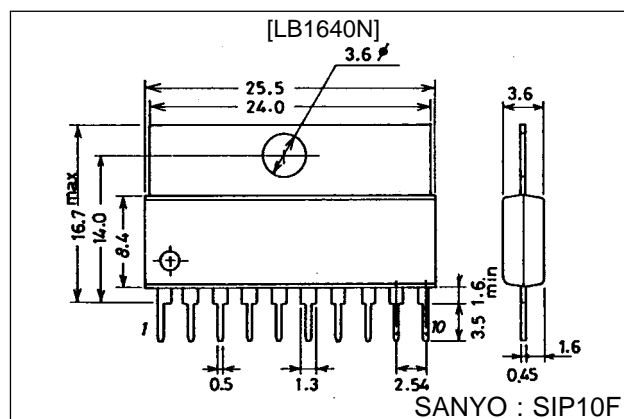
The LB1640N is a motor driver IC with a forward/reverse control feature. This IC is optimal for driving motors used in front-loading VCRs and auto-reverse cassette decks.

**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  $T_a = 25\text{ }^\circ\text{C}$** 

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC}$		20	V
Input voltage	$V_{IN}$		-0.3 to $V_{CC}$	V
Output current	$I_{Omax}$	$t = 5\text{ ms}$ , with cycle time of 5 sec. or more	1.6	A
Allowable power dissipation	$P_d\text{ max}$	No heat sink	2.5	W
		When using heat sink ( $100 \times 100 \times 1.5\text{ mm}^3$ )	7.0	W
Operating temperature	$T_{opr}$		-25 to +75	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-55 to +125	$^\circ\text{C}$

**Allowable Operating Ranges at  $T_a = 25\text{ }^\circ\text{C}$** 

Parameter	Symbol	Ratings	Unit
Supply voltage	$V_{CC}$	4 to 18	V
High-level input voltage	$V_{IH}$	3 to $V_{CC}$	V
Low-level input voltage	$V_{IL}$	-0.3 to +0.4	V
Output current	$I_O$	-500 to +500	mA
Forward $\leftrightarrow$ Reverse inhibit time	$T_{OFF}$	10 or longer	$\mu\text{s}$

# LB1640N

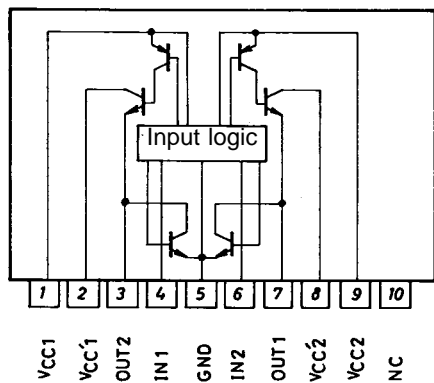
## Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$ , $V_{CC} = V_{CC'} = 12\text{ V}$

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 $0\text{ V}$			$\pm 100$	$\mu\text{A}$

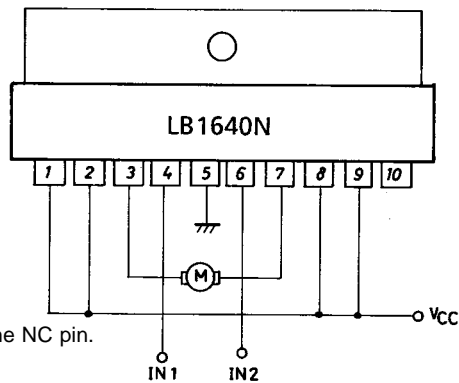
## Control Modes

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

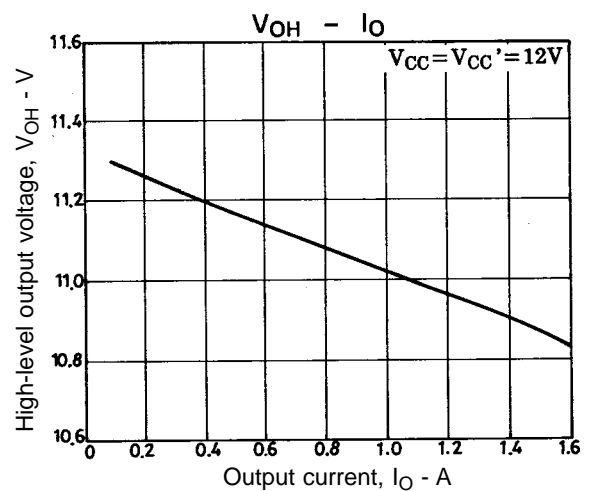
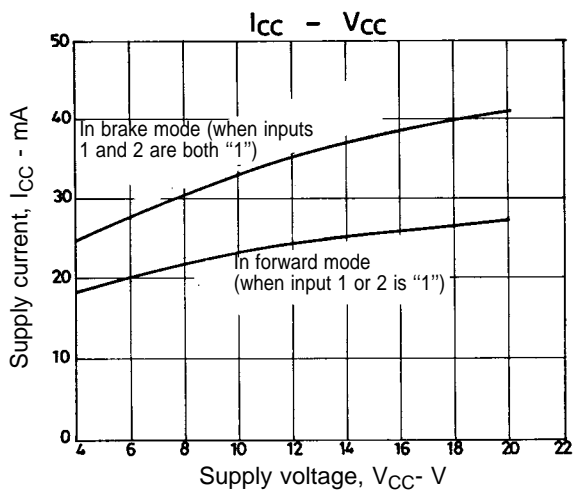
## Equivalent Circuit Block Diagram

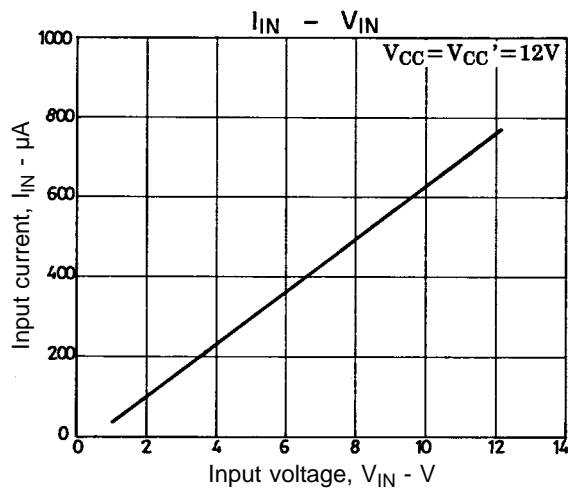
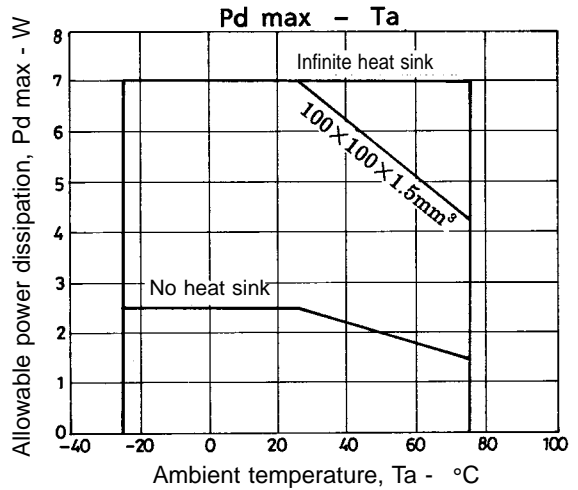
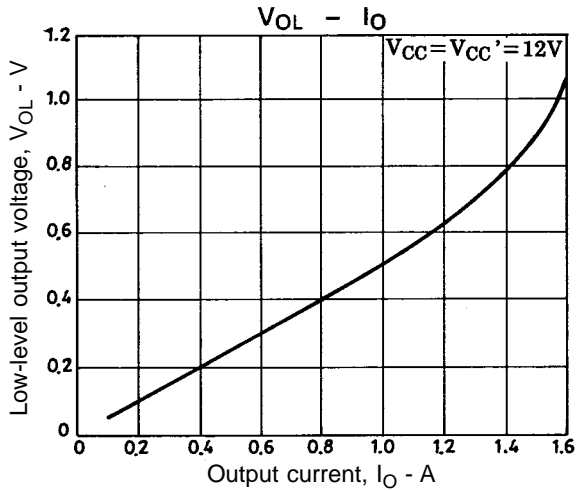


## Sample Application Circuit



Note: Do not use the NC pin.





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