R&E International

RE46C102
CMOS Dual H-Bridge Driver
Product Specification

General Description

The RE46C102 is a dual H-bridge driver with 35mA drive current and 16V V_{BB} maximum driver supply voltage. A separate low-side driver ground connection, Vss, is provided for current monitoring of each H-bridge driver. Each driver has two control inputs:

ENABLE which enables the high-side drivers and therefore connects the driver supply to the motor output. This input can be used for pulse-width modulation.

PHASE which is used to reverse the motor polarity.

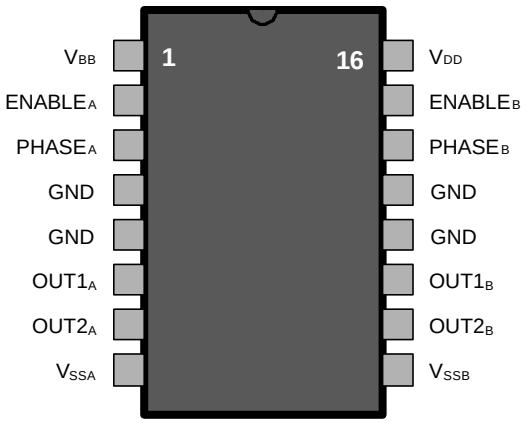
All control inputs are CMOS and TTL compatible and the logic section operates at Vdd=5V.

Features

- Typical Quiescent Current < 1uA
- Output Current of 35mA
- Output Voltage to 16V
- Internal Clamp Diodes

Pin Configurations

16 Lead Plastic DIP



Absolute maximum ratings

Supply Voltage V_{dd} .....-.5V to +17V
Output Supply Voltage Vbb..... V_{DD} to +17V
Input voltage Range V_{in} ..... -.3V to V_{DD}+.3V
Input Current I_{in} 10mA
Operating Temperature ..... -40°C to 85°C
Storage Temperature..... -55°C to 150°C
Continuous Output Current 80mA

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only and operation at these conditions for extended periods may affect device reliability.

This product utilizes CMOS technology with static protection; however proper ESD prevention procedures should be used when handling this product. Damage can occur when exposed to extremely high static electrical charges

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Electrical Characteristics at T_A = -40°C to +85°C, V_{BB} = 8V, V_{DD} = 5V, V_{SS} = 0V (unless otherwise noted).

Characteristic	Symbol	Conditions	min	typ	max	unit
Logic Supply	V_{DD}		4.75	5	15	V
Logic Quiescent Current	I_{DDS}	Vin=Vdd or Vss		0.01	10	µA
Driver Supply	V_{BB}		V_{DD}		16	V
Driver Quiescent Current	I_{BBS}	No Load		0.1	20	µA
Output Leakage Current	I_{OUTS}	ENABLE =Lo PHASE = Lo V_{OUT1} = V_{BB} or V_{SS}			± 10	µA
		ENABLE =Lo PHASE = Hi V_{OUT2} = V_{BB} or V_{SS}			± 10	µA
Output High Voltage	V_{OH}	ENABLE = Hi I_{OUT} = -35mA	7.1	7.45		V
Output Low Voltage	V_{OL}	ENABLE = Hi I_{OUT} = +35mA		0.55	0.9	V
Source Driver Rise Time	t_r	I_{OUT} = -35mA		15		ns
Source Driver Fall Time	t_f	I_{OUT} = -35mA		30		ns
Clamp Diode Forward V	V_F	I_F = 35mA		0.8	1.8	V
Input Logic Levels	V_{in}	Hi	2.4	1.5		V
		Low		1.5	0.8	V
Logic Input Current	$I_{ENABLE/PHASE}$				100	nA
Delay Time	t_{DHi}	ENABLE to Source Drivers		80		ns
	t_{DLO}	ENABLE to Source Drivers		120		ns
Deadtime	t_D	Delay from Source Turn-On to Sink Turn-On	75	300		ns

Truth Table

The following truth table applies for either H-Bridge driver.

ENABLE	PHASE	OUT1	OUT2
Lo	Lo	High-Z	Vss
Lo	Hi	Vss	High-Z
Hi	Lo	Vbb	Vss
Hi	Hi	Vss	Vbb

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Functional Diagram of one H-Bridge Driver