

AN6664S

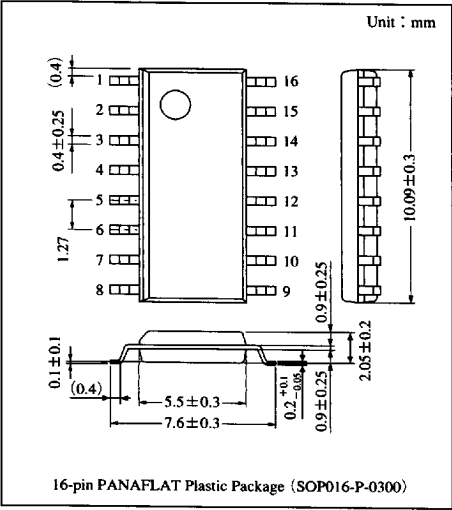
DC Motor Output Driver

Overview

The AN6664S is a forward/reverse drive IC for small DC motors. It provides 4 kinds of outputs such as forward rotation, reverse rotation, brake, and stop by the 2-bit input and is suitable as a driver for the small motors of 100 to 150mA.

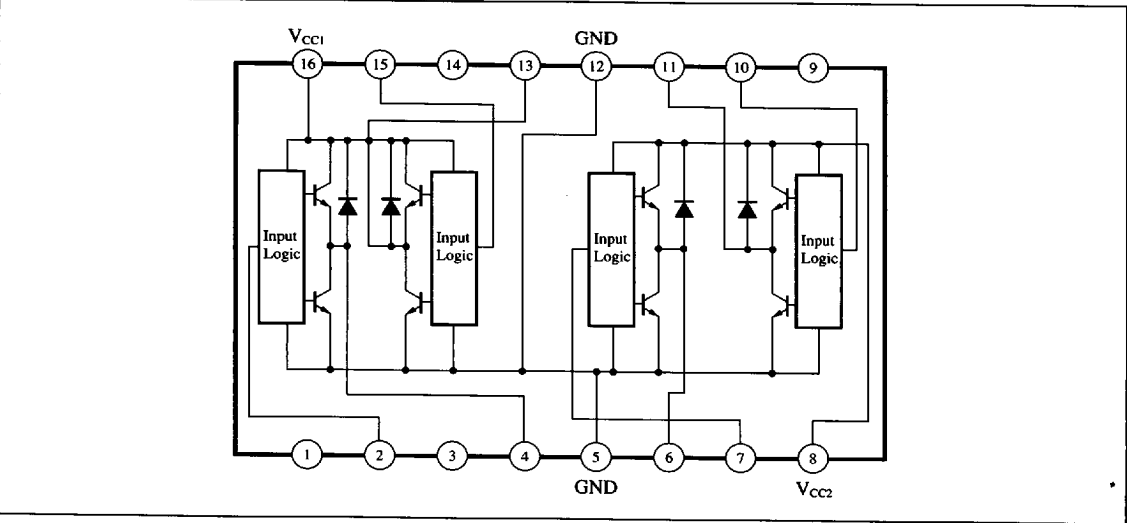
Features

- Wide range of operating supply voltage
: $V_{CC(opr)} = 3$ to 16V
- Large power dissipation
(AN6663SP : $P_D = 450mW$ when mounted)
- Built-in low saturation voltage type output transistor
- Built-in counter electromotive voltage suction diode
- Input voltage at the TTL level : $V_{IL} = 0.8V$ or less,
 $V_{IH} = 2V$ or more



ICs for
Motor

Block Diagram



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■ Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Supply voltage	V _{CC}	18	V
Supply current	I _{CC}	200	mA
Power dissipation	P _D	450	mW
Output peak current	I _{OP}	±200	mA
Operating ambient temperature	T _{opr}	−20 to +75	℃
Storage temperature	T _{stg}	−55 to +125	℃

■ Recommended Operating Range (Ta=25℃)

Parameter	Symbol	Range
Operating supply voltage range	V _{CC}	3V to 16V
Output current	I _O	0mA to ±100mA
L input voltage	V _{IL}	0V to 0.8V
H input voltage	V _{IH}	2V to V _{CC}

■ Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	min	typ	max	Unit
Standby supply current	I _{CCsb}	V _{CC1} =V _{CC2} =12V 0.8V for all input pins	0.6	—	2.6	mA
Supply current	I _{CC}	V _{CC1} =V _{CC2} =12V, V _{I1a} =V _{I2a} =12V V _{I1b} =V _{I2b} =0.8V	8	—	24	mA
H output voltage	V _{OH}	V _{CC1} =V _{CC2} =12V I _{OH} =−150mA	10.4	—	—	V
L output voltage	V _{OL}	V _{CC1} =V _{CC2} =12V I _{OL} =150mA	—	—	0.5	V
Input impedance	Z _{in}	V _{CC1} =V _{CC2} =12V V _I =2V→3V	7	—	13	kΩ

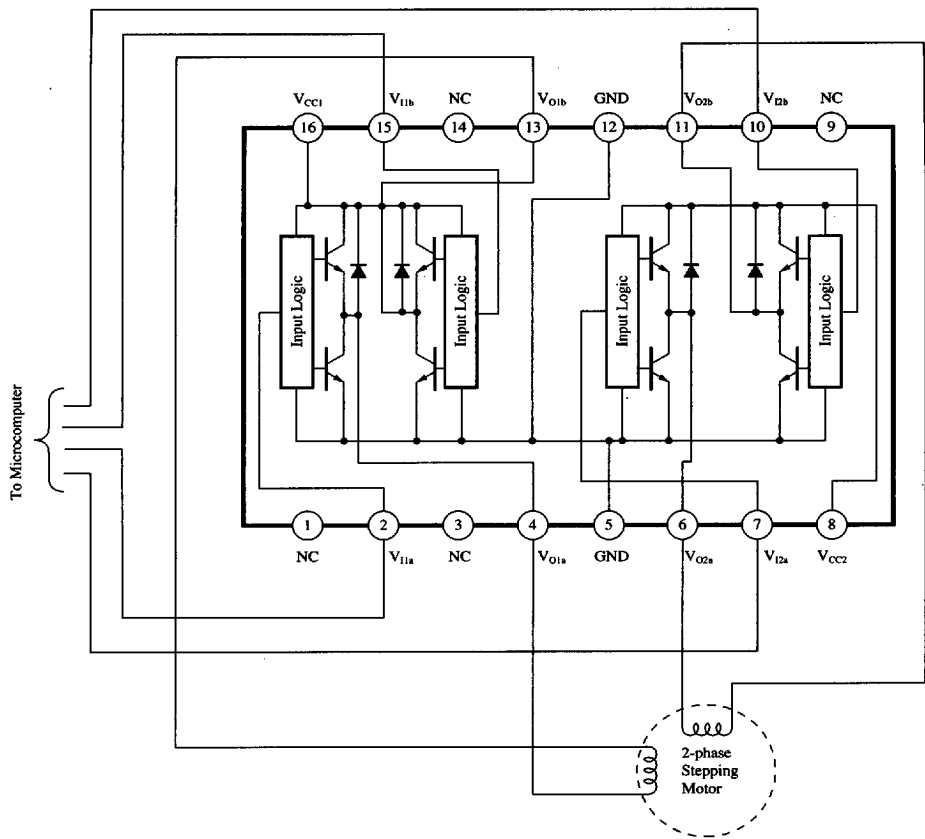
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Pin Descriptions

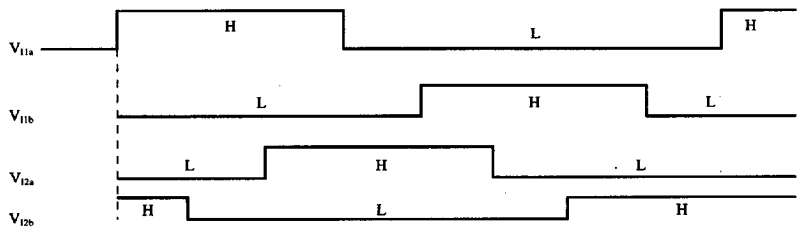
Pin No.	Pin name	Description	I/O impedance	Equivalent circuit
1, 3, 9, 14	NC	NC	—	—
2	Input pin 1a V_{11a}	Input pins to determine the motor rotating direction	Approx. 10k Ω	
7	Input pin 2a V_{12a}		Approx. 10k Ω	
10	Input pin 2b V_{12b}		Approx. 10k Ω	
15	Input pin 1b V_{11b}		Approx. 10k Ω	
4	Output pin 1a V_{O1a}	Pins to connect the motor coil	—	
6	Output pin 2a V_{O2a}		—	
11	Output pin 2b V_{O2b}		—	
13	Output pin 1b V_{O1b}		—	
5	GND	GND	—	—
12				
8	Supply voltage pin 2 V_{CC2}	Pins to input the supply voltage	—	—
16	Supply voltage pin 1 V_{CC1}			

■ Application Circuit

• When Driving the Stepping Motor (2-phase Bipolar Drive)



• Example of Input Signal (Pattern Depends on the Operating Method)



■ Supplementary Explanation

• Precautions on Use

① Truth table

Pin②	Pin⑮	Pin④	Pin⑬
L	L	HiZ	HiZ
H	L	L	H
L	H	H	L
H	H	L	L

Pin⑦	Pin⑩	Pin⑥	Pin⑪
L	L	HiZ	HiZ
H	L	L	H
L	H	H	L
H	H	L	L

② The input coltage of the input pins V11a, V11b, V12a and V12b canbe applied up to twice large than Vcc (It should no exceed 18V).

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