

AN6663S, AN6663SP

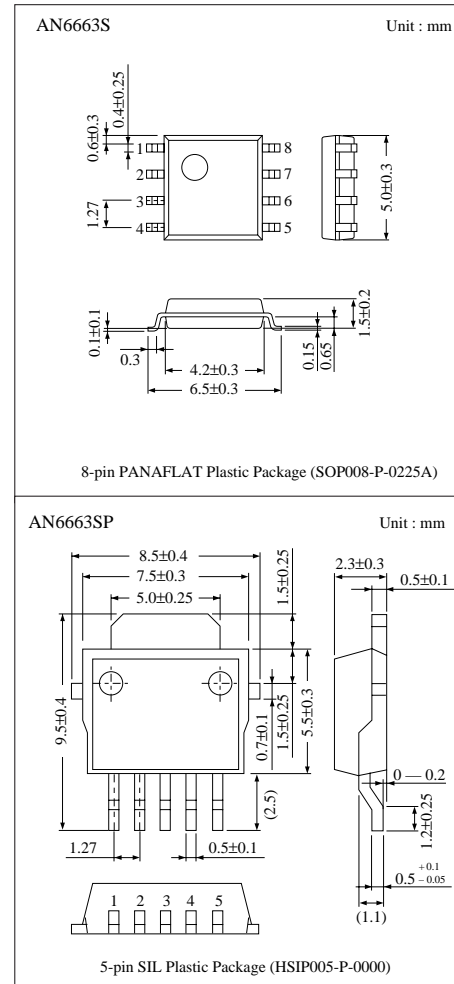
Bridge Drivers

Overview

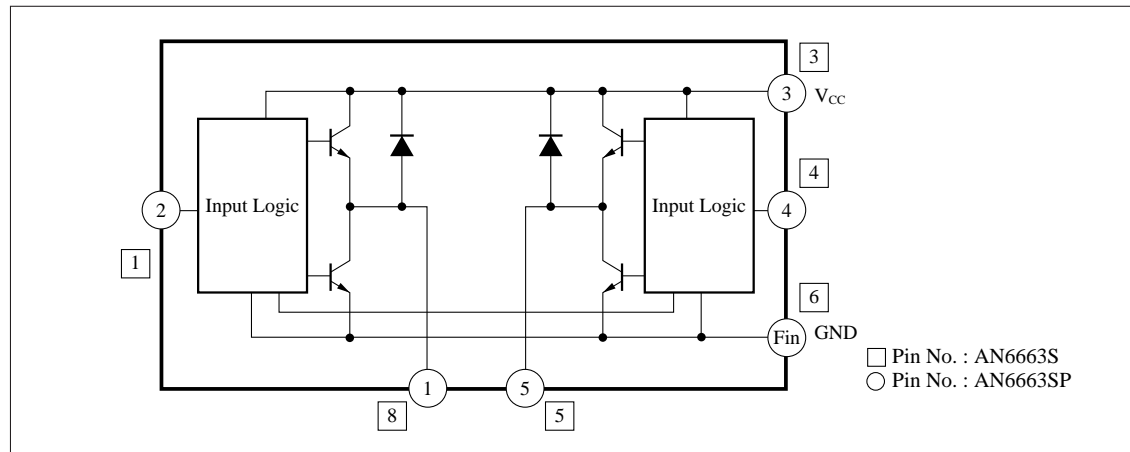
The AN6663S and AN6663SP are the forward/reverse drive ICs for small DC motors. They provide 4 kinds of outputs such as forward rotation, reverse rotation, brake, and stop by the 2bit input and are optimum as the drivers for the small motors of 100 to 150mA.

Features

- Wide range of operating supply voltage
: $V_{CC(opr)} = 3$ to $16V$
- Large power dissipation
(AN6663SP : $P_D = 1.45W$ 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



Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Supply voltage		V _{CC}	18	V
Supply current		I _{CC}	200	mA
Power dissipation	AN6663S	P _D	361	mW
	AN6663SP		500	
Output peak current	AN6663S	I _{OP}	±150	mA
	AN6663SP		±200	
Operating ambient temperature		T _{opr}	-20 to +75	°C
Storage temperature		T _{stg}	-55 to +125	°C

■ Recommended Operating Range (Ta=25°C)

Parameter		Symbol	Range
Operating supply voltage range		V _{CC}	3V to 16V
Output current	AN6663S	I _O	0mA to ±50mA
	AN6663SP	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 (V_{CC}=12V, Ta=25°C)

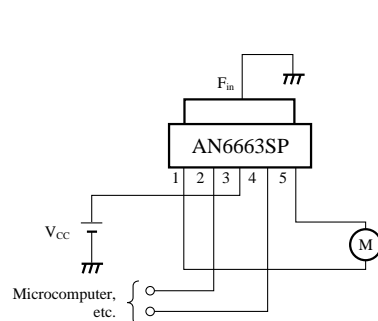
Parameter	Symbol	Condition	min	typ	max	Unit
Standby supply current	I _{CCsb}	V _{I1} =V _{I2} =0.8V	0.3	0.8	1.3	mA
Supply current	I _{CC}	V _{I1} =V _{I2} =0.8V	4	8	12	mA
H output voltage	V _{OH}	I _{OH} =-100mA ^{Note)}	10	10.8	—	V
L output voltage	V _{OL}	I _{OL} =100mA ^{Note)}	—	0.3	0.5	V
Input impedance	Z _{in}	V _I =2V→3V	7	10	13	kΩ

Note) AN6663SP is I_{OH}=-150mA, I_{OL}=150mA

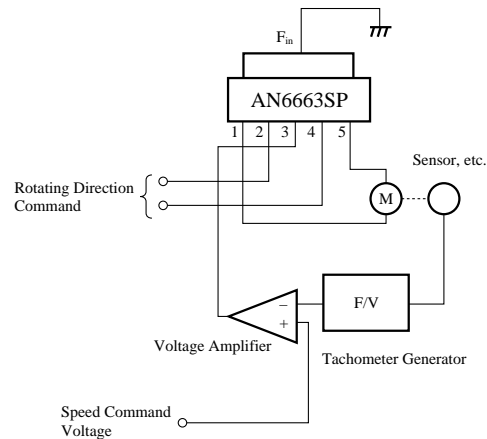
■ Application Circuit

- AN6663SP

1. Basic Circuit



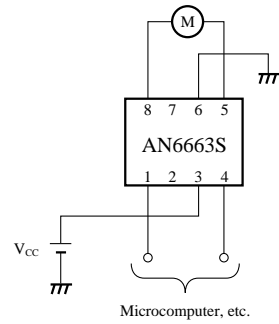
2. When Controlling Speed



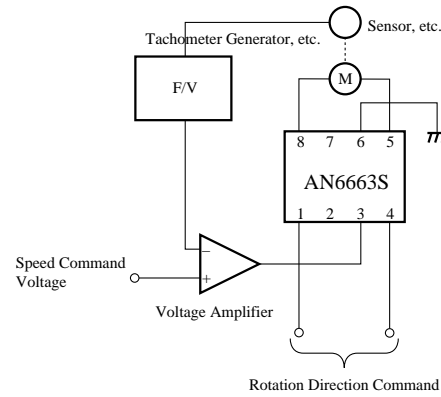
■ Application Circuit(Cont.)

• AN6663S

1. Basic Circuit



2. When Controlling Speed



■ Pin Descriptions

Pin No.		Pin name	Description	I/O impedance	Equivalent circuit
AN6663SP	AN6663S				
1	8	Output pin 1 V_{O1}	Pin to connect the motor coil	—	
2	1	Input pin 1 V_{I1}	Input pin to determine the motor rotating direction	Approx. 10k Ω	
3	3	Supply voltage V_{CC}	Pin to input the supply voltage	—	—
4	4	Input pin 2 V_{I2}	Input pin to determine the motor rotating direction	Approx. 10k Ω	
5	5	Output pin 2 V_{O2}	Pin to connect the motor coil	—	

The numbers marked with * are the AN6663S

■ Pin Descriptions (Cont.)

Pin No.		Pin name	Description	I/O impedance	Equivalent circuit
AN6663SP	AN6663S				
FIN	6	Ground pin GND	Ground pin	—	—————
—	2, 7	NC	NC for the AN6663S	—	—————

■ Supplementary Explanation

• Precautions on Use

1 Truth table

V_{I1}	V_{I2}	V_{O1}	V_{O2}	Motor operation
L	L	HiZ	HiZ	Motor stop
H	L	L	H	Forward rotation
L	H	H	L	Reverse rotation
H	H	L	L	Brake

2 The input voltage of the input pins V_{I1} and V_{I2} can be applied up to twice larger than V_{CC} (it should not exceed 18V).