

AN6663S, AN6663SP

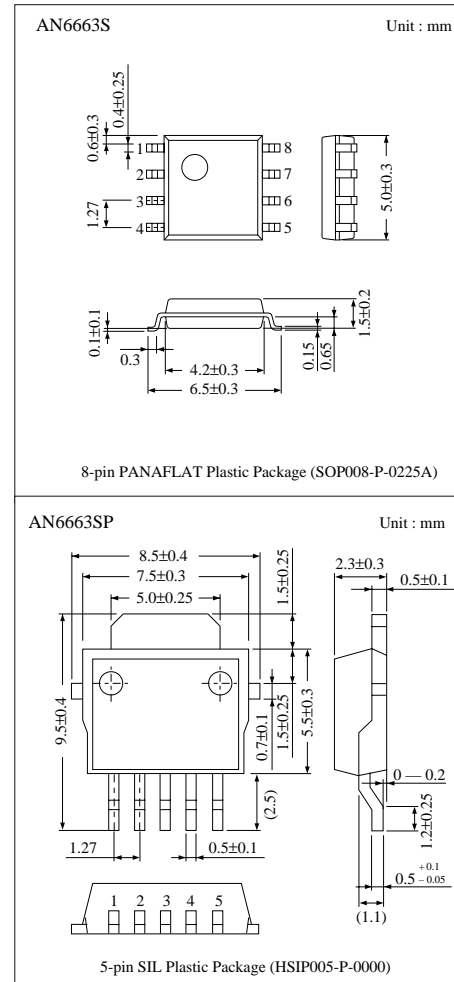
Bridge Drivers

■ Overview

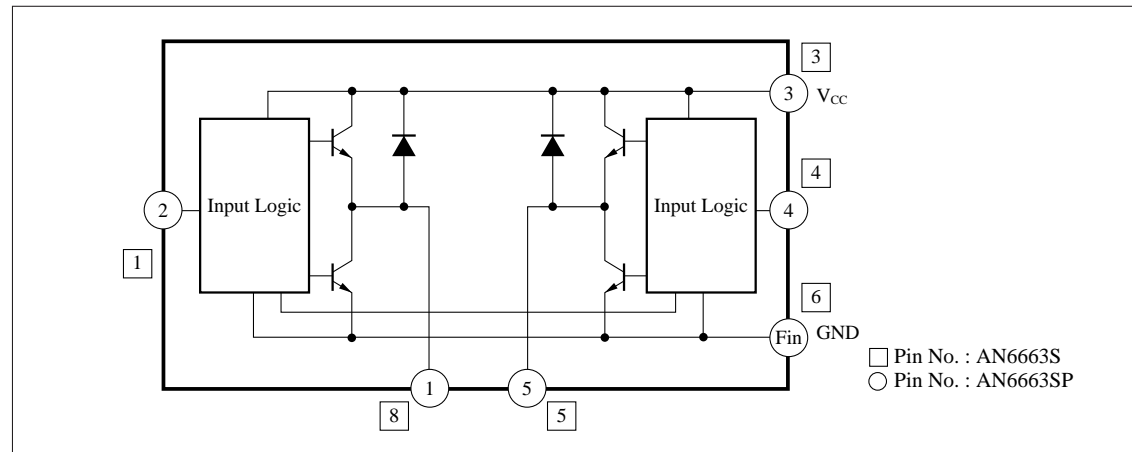
The AN6663S and AN6663SP are the forward/reverse drive ICs for small DC motors. They provide 4 kinds of outputs such as forward rotation, reverse rotation, brake, and stop by the 2bit input and are optimum as the drivers for the small motors of 100 to 150mA.

■ 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 ± 50 mA
	AN6663SP	I_O	0mA to ± 100 mA
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)

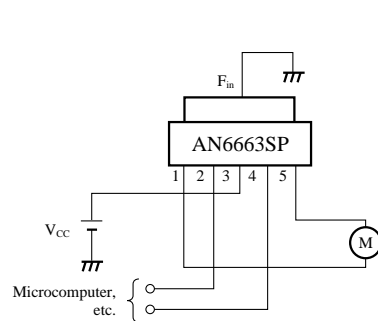
Parameter	Symbol	Condition	min	typ	max	Unit
Standby supply current	I_{CCsb}	$V_{I1}=V_{I2}=0.8V$	0.3	0.8	1.3	mA
Supply current	I_{CC}	$V_{I1}=V_{I2}=0.8V$	4	8	12	mA
H output voltage	V_{OH}	$I_{OH}=-100mA$ (Note)	10	10.8	—	V
L output voltage	V_{OL}	$I_{OL}=100mA$ (Note)	—	0.3	0.5	V
Input impedance	Z_{in}	$V_I=2V \rightarrow 3V$	7	10	13	k Ω

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

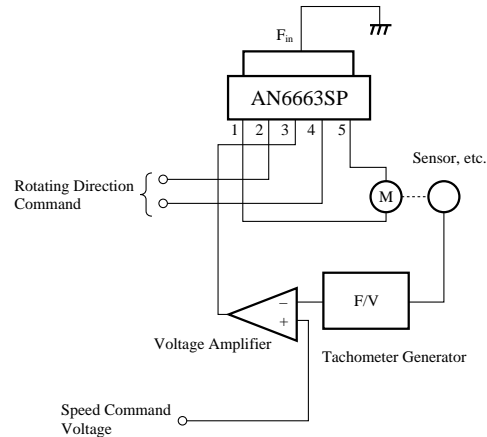
■ Application Circuit

- AN6663SP

1. Basic Circuit



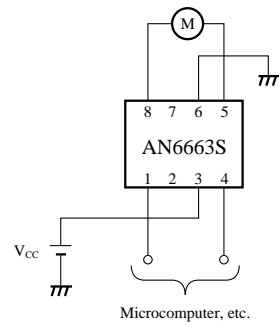
2. When Controlling Speed



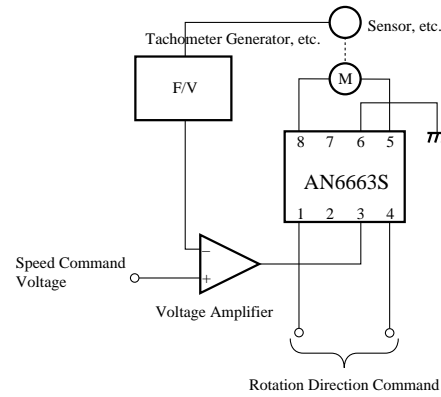
■ Application Circuit(Cont.)

• 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).