AN6663S, AN6663SP

Bridge Drivers

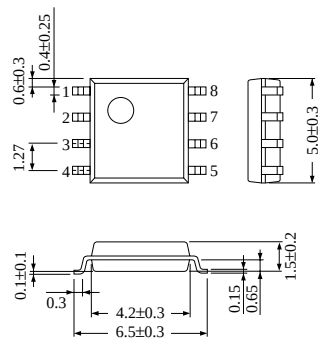
■ Overview

The AN6663S and AN6663SP are the forward/reverse drive ICs for small DC motors. They provide 4 Kinds of outputs such as foward 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

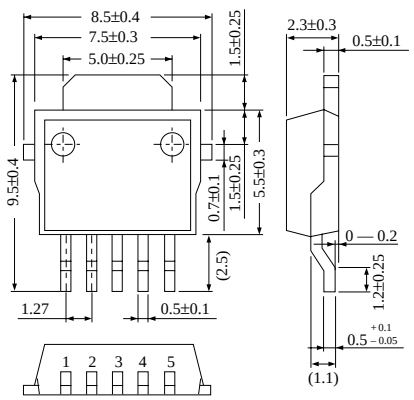
- Wide range of operating supply voltage
  : $V_{CC\ (opr)}$ = 3 to 16V
- Large power dissipation
  (AN6663SP : P_D = 1.45W when mounted)
- Built-in low saturation voltage type output transistor
- Built-in counter electromotive voltage suction diode
- Input voltage at the TTL level : V_{IL} = 0.8V or less,
  V_{IH} = 2V or more

AN6663S Unit : mm



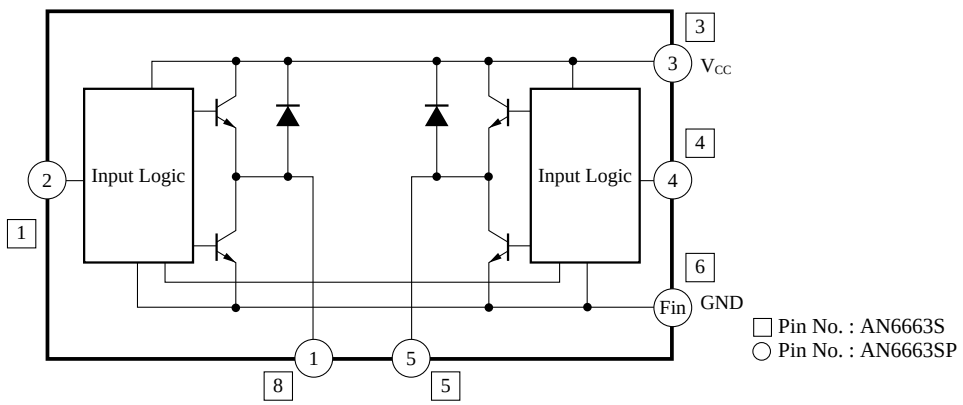
8-pin PANAFLAT Plastic Package (SOP008-P-0225A)

AN6663SP Unit : mm



5-pin SIL Plastic Package (HSIP005-P-0000)

■ 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)

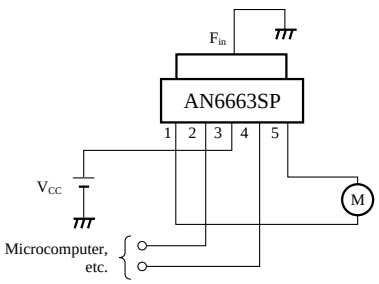
Parameter	Symbol	Condition	min	typ	max	Unit
Standby supply current	I_{CCSb}	V_{I1}=V_{I2}=0.8V	0.3	0.8	1.3	mA
Supply current	I_{CC}	V_{I1}=V_{I2}=0.8V	4	8	12	mA
H output voltage	V_{OH}	I_{OH}=–100mA Note)	10	10.8	—	V
L output voltage	V_{OL}	I_{OL}=100mA Note)	—	0.3	0.5	V
Input impedance	Z_{in}	V_I=2V→3V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

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

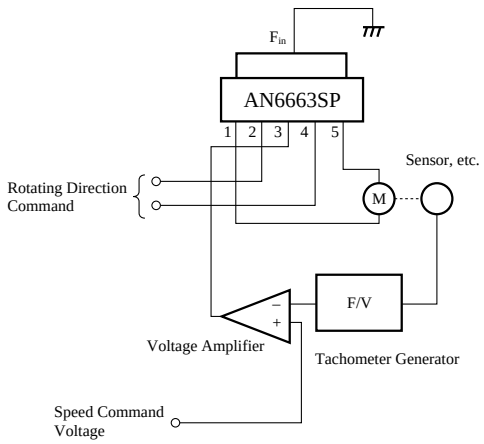
■ Application Circuit

• AN6663SP

1. Basic Circuit



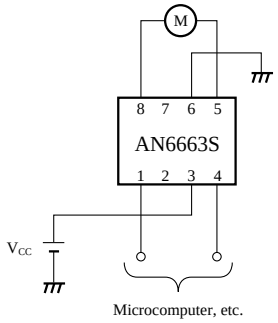
2. When Controlling Speed



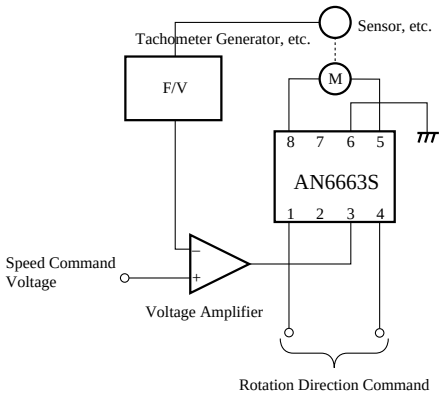
■ Application Circuit(Cont.)

• AN6663S

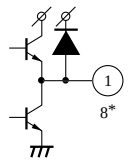
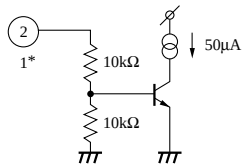
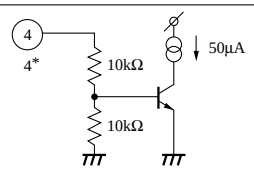
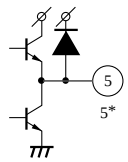
1. Basic Circuit



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. 10kΩ	
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. 10kΩ	
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).