

Reversible motor driver

BA6109

The BA6109 is a monolithic IC used for driving reversible motors. Two control logic inputs allow three output modes : forward, reverse, and stop.

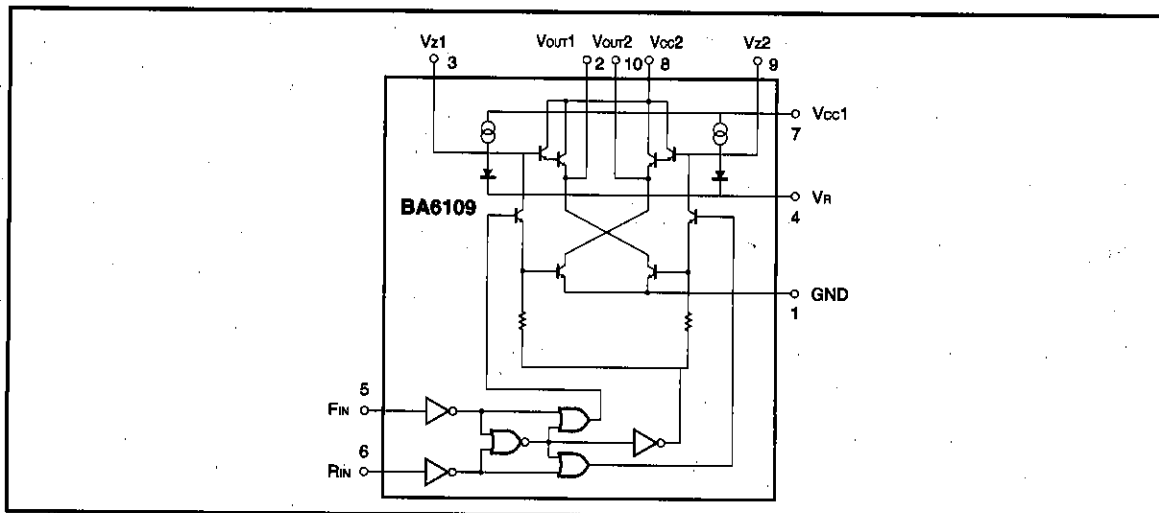
When switching from the forward or reverse mode to the stop mode, a brake is applied by absorbing the counter-electromotive force of the motor. The IC has a built-in function to absorb motor rush currents that occur when switching the output mode.

Output voltage is determined by the external constant voltage diode connected between pin 4 and GND. The motor drive transistor can tolerate a rush current of up to 800mA. The IC can drive motors with various operating voltages. Because the IC operates with a current less than 50 μ A, you can directly connect the IC with CMOSs or other control logic outputs.

●Features

- | | |
|---|--|
| 1) Motor driving power transistors are built in; a rush current up to 800mA is allowable. | 4) Interfaces with MOS LSI devices. |
| 2) Brake is applied when stopping the motor. | 5) Small number of external parts. |
| 3) Built-in function to absorb motor rush currents. | 6) Wide range of operating supply voltage (6 ~ 18V). |
| | 7) Available in a 10-pin SIP package. |

●Block diagram



● Measurement circuit

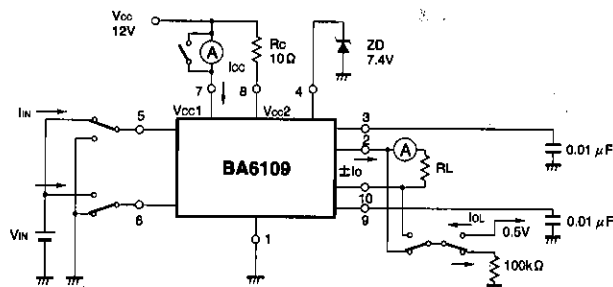
● Absolute maximum ratings ($T_a=25^\circ\text{C}$)

Fig.1

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{CC}	18	V
Power dissipation	P_d	2200*1	mW
Operating temperature	T_{opr}	$-25\sim 75$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55\sim 125$	$^\circ\text{C}$
Output current	I_{OUT}	800*2	mA
Input voltage	V_{IN}	$-0.3\sim V_{CC}$	V

*1 Refer to the power damping characteristics for details.

*2 500 μs pulse with a duty ratio of 1%.

Input level 1 is 2.0 V or more

Input level 2 is 0.7 V or less

FIN	RIN	Vout1	Vout2
1	1	L	L
0	1	L	H
1	0	H	L
0	0	L	L

● Electrical characteristics (unless otherwise noted, $T_a=25^\circ\text{C}$ and $V_{CC1}=12\text{V}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measurement Circuit
Operating supply voltage 1	V_{CC1}	6.0	—	18.0	V	—	Fig.1
Operating supply voltage 2	V_{CC2}	—	—	18.0	V	—	Fig.1
Quiescent current	I_Q	—	15.0	30.0	mA	5, 6pin : GND, $R_L=\infty$	Fig.1
Minimum input ON current	I_{IN}	—	10.0	50.0	μA	$R_L=\infty$	Fig.1
Input threshold voltage	V_{INT}	0.7	—	2.0	V	$R_L=\infty$	Fig.1
Output leakage current	I_{OL}	—	—	1.0	mA	5, 6pin : GND, $R_L=\infty$	Fig.1
Output voltage	V_O	5.2	5.8	6.9	V	$R_L=60\Omega$, $ZD=7.4\text{V}$	Fig.1

● External dimensions (Units: mm)

