

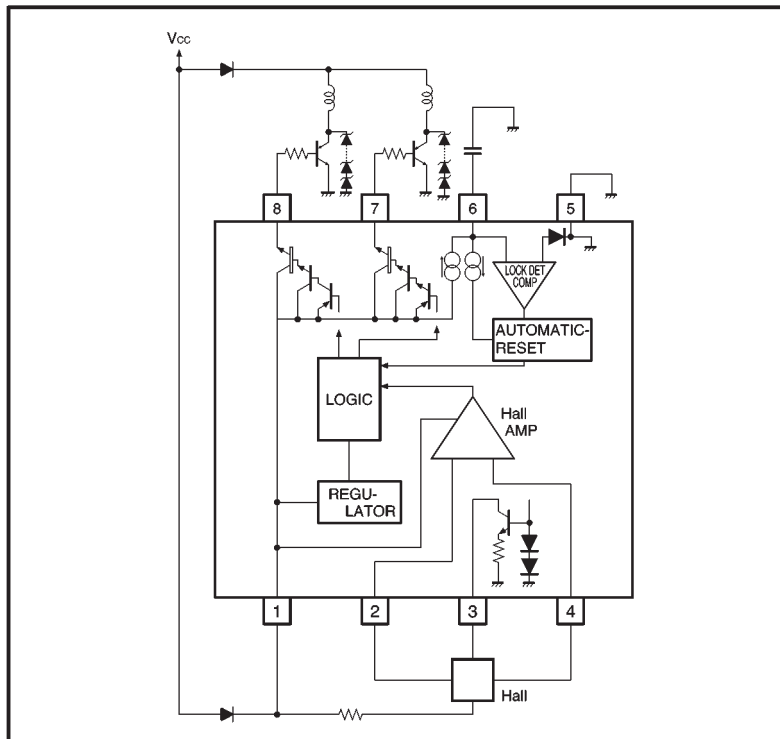
# 2-phase half-wave motor predriver BA6404F

The BA6404F is a 2-phase, half-wave motor predriver suited for fan motors.

●Features

- 1) Lock detection and rotational speed sensing mechanisms are built in.
- 2) Hall constant current source is built in.
- 3) Compact 8-pin SOP package reduces the number of external components required.
- 4) Automatic restart when the motor lock is undone.

●Block diagram and application example



● Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Applied voltage	V <sub>CC</sub>	30	V
Power dissipation	P <sub>d</sub>	450*	mW
Operating temperature	T <sub>opr</sub>	-20~+80	°C
Storage temperature	T <sub>stg</sub>	-55~+125	°C
Output current	I <sub>Omax</sub>	70	mA

\* Reduced by 4.5 mW for each increase in Ta of 1°C over 25 °C.

● Operating power supply voltage range (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Applied voltage	V <sub>CC</sub>	4	—	28	V	Operate within the allowable power dissipation for -20 °C < Ta < 80 °C
Input voltage *	V <sub>BH</sub>	0.8	—	V <sub>CC</sub> -0.2	V	—

\* Input voltage range includes the amplitude of signal.

● Electrical characteristics (unless otherwise noted, Ta = 25°C and V<sub>CC</sub> = 12V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Supply current	I <sub>CC</sub>	—	3.2	5.0	mA	When output is OFF
Hall amplifier input hysteresis (+)	V <sub>hys</sub> <sup>+</sup>	3	—	15	mV	Pin2 voltage with respect to pin4 voltage, V <sub>B</sub> = 6 V
Hall amplifier input hysteresis (-)	V <sub>hys</sub> <sup>-</sup>	-3	—	-15	mV	Pin2 voltage with respect to pin4 voltage, V <sub>B</sub> = 6 V
Pin3 constant current	I <sub>3</sub>	5	6.8	10	mA	V <sub>3pin</sub> =V <sub>CC</sub>
Pin6 charge current	I <sub>6c</sub>	4.0	7.7	12	μA	V <sub>6pin</sub> =1.5V
Pin6 discharge current	I <sub>6d</sub>	0.8	1.45	2.3	μA	V <sub>6pin</sub> =1.5V
Pin6 charge/discharge ratio	r <sub>cd</sub>	3	5.2	8	—	I <sub>6c</sub> / I <sub>6d</sub>
Pin6 clamp voltage	V <sub>6CL</sub>	2.2	2.6	3.0	V	—
Pin6 comparator voltage	V <sub>6CP</sub>	0.4	0.6	0.8	V	—
Pin7 Output high level voltage	V <sub>7H</sub>	10	10.5	—	V	I <sub>o</sub> =10mA
Pin8 Output high level voltage	V <sub>8H</sub>	10	10.5	—	V	I <sub>o</sub> =10mA

●External dimensions (Units: mm)

