

High reliability

2-phase half-wave motor pre-driver BA6409F

● Description

The BA6409F is a two-phase half-wave motor pre-driver for fan motors. The built-in protection diode eliminates an external diode and the concern of connecting in reverse when fan motors equipped. The device also has a lock-up detector and automatic restart function. There is a lock-up detector output pin on the IC.

● Features

- 1) Built-in discrete diode for reverse connection protection. (Maximum reverse connection protection voltage: 80V)
- 2) Lock-up detector function & lock-up detector output pin.
- 3) Compact SOP8-pin package. Fewer external components make mounting spaces smaller.
- 4) Automatic restart when lock-up is removed.
- 5) Hall element input hysteresis circuit is built-in.

● Applications

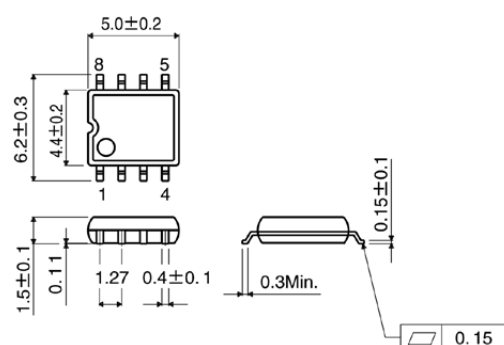
Two-phase half-wave motor pre-driver for fan motor

● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Applied voltage	V_{CC}	30	V
Power dissipation	P_d	550 *	mW
Operating temperature	T_{opr}	-30 ~ +75	°C
Storage temperature	T_{stg}	-55 ~ +125	°C
Output current	I_{OMAX}	70	mA
Junction temperature	T_{jmax}	125	°C

*Derating : 5.5mW/°C for operation above Ta=25°C
(Mounted on a 70.0mm 70.0mm 1.6mm glass epoxy PCB.)

● Dimension (Units : mm)



SOP8

● Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V _{CC}	5.2	—	28	V
Input voltage *	VBH	1.0	—	V _{CC} -1.7	V

*Input voltage includes signal amplitude.

● Electrical Characteristics (Unless otherwise noted, Ta=25°C, V_{CC}=12V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current	I _{CC}	—	3.2	5.0	mA	Output off
Hall amplifier input hysteresis (+)	V _{hya+}	+3	—	+15	mV	VB=6V (Voltage on Pin2 with respect to Pin4)
Hall amplifier input hysteresis (−)	V _{hya−}	−3	—	−15	mV	VB=6V (Voltage on Pin2 with respect to Pin4)
Pin3 "L" output voltage	V3L	—	—	0.5	V	I3L=5.0mA
Pin3 current capacity	I3	8.0	—	—	mA	V3L=2.0V
Pin6 charge current	I6C	2.0	3.45	5.25	μA	V6PIN=1.5V
Pin6 discharge current	I6d	0.35	0.80	1.45	μA	V6PIN=1.5V
Pin6 charge/discharge current ratio	rcd	3	4.5	8	—	I6c/I6d
Pin6 clamp voltage	V6cL	2.2	2.6	3.0	V	
Pin6 comparater voltage	V6cp	0.4	0.6	0.8	V	
Pin7 "H" output voltage	V7H	8.8	9.8	—	V	I _o =10mA
Pin8 "H" output voltage	V8H	8.8	9.8	—	V	I _o =10mA

The products described herein are not designed to be X ray proof.

● Application circuit

