



New Product Announcement

AH2984

AH2984 Smart fan driver with internal Hall effect sensor for two phase BLDC fans and motors

Description

The AH2984 is a single-chip solution for driving two-coil brushless direct current (BLDC) fans and motors.

The device includes a Hall-effect sensor, dynamic offset correction and two complementary open-drain output drivers with internal Zener diode protection.

To help protect the motor coils, the AH2984 provides Rotor Lock Protection which shuts down output drives if rotor lock is detected. The device automatically re-starts when the rotor lock is removed. Over temperature shutdown provides thermal protection for the device.

The AH2984 is also available in SOT89-5L in addition to SIP4 packages.



The Diodes advantage

The AH2984 provides highly integrated yet simple low cost effective solution for cooling fans and motor drive applications

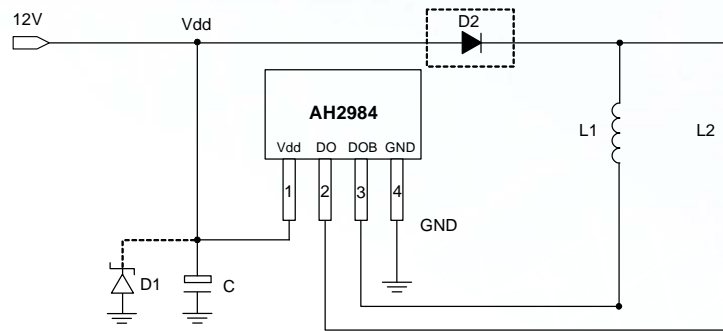
- Built-in Hall sensor and amplifier**
 All-in-one integrated solution significantly reduces external components
- Integrated complementary open-drain output drivers**
 Supports two-phase motor drive up to 500mA average load current.
 No external switch required – reduced components count and PCB area
- Lock detection and automatic self-start, without external capacitor**
 Protects coil from over-heating or burn-out during motor/fan rotor lockout
 Automatic restart when rotor lock is released
 Reduces number of external components
- Internal Zener diode protection on output drivers**
 No external clamp diodes – reduced components count and PCB area
- Wide operating temperature range -40°C to 105°C**
 Suitable for thermally demanding applications

Applications

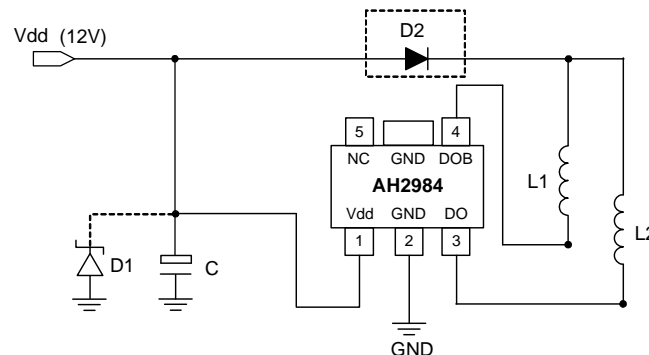
- 3.3V / 5V / 12V BLDC cooling fans and motors
- PC and Server cooling fans
- Netbook/ Notebook cooling fans
- Low Voltage / Low Power BLDC Motors

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12V BLDC motor drive: SIP4 package



12V BLDC motor drive: SOT89-5L package



Electrical characteristics

| Part Number | Operating Voltage (V) | IC supply current (mA) | Average Output drive current (mA) | Operating Point Bop at 25°C (Gauss) | Release Point Brp at 25°C (Gauss) | Operating Temperature (°C) | Package |
|--------------|-----------------------|------------------------|-----------------------------------|-------------------------------------|-----------------------------------|----------------------------|----------|
| AH2984-PG-B | 2.5 to 15 | 3.5 | 500 | 5/50 | -50/-5 | -40 to 105 | SIP4-L |
| AH2984-YG-13 | 2.5 to 15 | 3.5 | 500 | 5/50 | -50/-5 | -40 to 105 | SOT89-5L |

To find out more information:

Product page: <http://www.diodes.com/products/catalog/detail.php?item-id=4936>

Datasheet: <http://www.diodes.com/datasheets/AH2984.pdf>



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Product portfolio

| Part Number | Operating Voltage (V) | Average Output current (mA) | Operating Point Bop (Gauss) | Release Point Brp (Gauss) | Operating Temperature (°C) | Package |
|---------------|-----------------------|-----------------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| AH284 | 3.8 to 20 | 500 | 5/60 | -60/-5 | -40 to 100 | SOT89-5L |
| AH285 | 3.8 to 20 | 500 | 5/60 | -60/-5 | -40 to 100 | SOT89-5L |
| AH286 | 3.8 to 20 | 500 | 5/60 | -60/-5 | -40 to 100 | SOT89-5L |
| AH287 | 3.8 to 28 | 400 | 5/60 | -60/-5 | -40 to 100 | SIP4-L SOT89-5L |
| AH288 | 3.8 to 28 | 400 | 5/60 | -60/-5 | -40 to 100 | SOT89-5L |
| AH289 | 3.8 to 28 | 400 | 5/60 | -60/-5 | -40 to 100 | SOT89-5L |
| AH291 | 1.8 to 5.75 | 400 | 5/60 | -60/-5 | -20 to 100 | SIP4-L |
| AH292 | 1.8 to 5.75 | 400 | 5/60 | -60/-5 | -20 to 100 | SOT89-5L |
| AH293 | 1.8 to 5.75 | 400 | 5/60 | -60/-5 | -20 to 100 | SOT89-5L |
| AH5771 | 2.5 to 15 | 400 | 10/50 | -50/-10 | -40 to 100 | SIP4-L |
| AH5792 | 1.8 to 5 | 200 300 | 5/60 | -60/-5 | -40 to 100 | SOT553 SOT89-5L |
| AH5798 | 1.8 to 5.5 | 300 | 10/50 | -50/-10 | -40 to 105 | SOT89-5L |
| | | 250 | | | | TSOT25 |
| AH2984 | 2.5 to 15 | 400 | 5/60 | -60/-5 | -40 to 105 | SIP4-L SOT89-5L |

Ordering information

| Device | Packaging (Note 2) | Part mark | Reel size or Bulk | Tape width | Quantity |
|--------------|--------------------|----------------|-------------------|------------|----------|
| AH2984-PG-B | SIP-4L | 2984 Y WW X | Bulk | -- | 1000 |
| AH2984-YG-13 | SOT89-5L | K1 Y W X | 13" | 12mm | 2500 |

All variants are in packages that are "Green" Molding Compound (No Br, Sb) with Lead Free Finish/RoHS Compliant (Note 1)

- Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. see *EU Directive 2002/95/EC Annex Notes*. Please visit our website at http://www.diodes.com/products/lead_free.html
 2. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>

Date coding on part marks: **Y** Year 0~9; **W** week A~Z:1~26, a~z: 27~52; **WW** week 01~52; **X** A~Z:Green