A5947: Three-Phase Sensorless Fan Driver IC

The A5947 three phase motor driver IC incorporates sensorless sinusoidal drive to minimize vibration for a wide variety of fan applications. Sensorless control eliminates the requirement for Hall sensors. As automotive industry continues to improve efficiency, the market for BLDC fan drivers continue to grow. A5947, highly efficient sinusoidal algorithm is designed to meet the market demand while providing an easy to implement code free solution.

A5947 is an ideal solution to address a wide range of cooling fan systems including automotive seat ventilation, battery cooling, ADAS GPU/CPU and server/telecom cooling fans. A flexible closed-loop speed control system is integrated into the IC. EEPROM is used to tailor the common functions of the fan speed curve to a specific application.

The device has built in full sinusoidal sensorless BLDC control algorithm and programmable speed curve that eliminates the need of external micro controller and software development. It reduces PCB space by including multiple external components including MOSFETs. Allegro's proprietary algorithm includes Zero Torque Position Detection (ZTPD) and Automatic Phase Advance not only improve startup performance but also enhance motor efficiency at high speed.

The A5947 is available in two packages including a 28-contact 5 mm × 5 mm QFN with exposed thermal pad (suffix ET) and a 24-contact eTSSOP (suffix LP).

Featured Applications:

- Automotive Seat Ventilation Fans
- Automotive ADAS DPU/CPU Cooling Fans
- Automotive Battery Cooling Fans
- Telecom Server Data Center Cooling Fans
- IC&C GPU/CPU Cooling Fans

DATASHEETS

Contact Marketing for Datasheet

SAMPLE & BUY

Arrow Electronics *(Distributor, Allegro & Sanken Semiconductors)*
25 Hub Drive
Melville, NY 11747
Phone: 1-800-777-2776 for local distributor
Web: www.arrow.com
If this is not your local representative, find your local sales rep here.

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- AEC-Q100 qualified
- Speed curve configuration via EEPROM
- I2C serial port
- Sinusoidal modulation for reduced audible noise and low vibration
- Sensorless (no Hall sensors required)
- Low RDS(ON) power MOSFETs
- 3.3 V / 20 mA linear regulator
- PWM or analog speed input
- FG speed output
- Slew rate control
- Lock detection Soft start
- Low power standby mode
- Overcurrent protection
- Overvoltage protection

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Part Number Specifications and Availability

Part Number	Package Type	Temperature	RoHS Compliant	Part Composition / RoHS Data	Comments	Samples	Check Distributor Stock
A5947GETTR-T	28-lead QFN	-40°C to 105°C	Yes	View Data	New	Contact your local sales rep	Check Stock
A5947KLPTR-T	20-lead TSSOP	-40°C to 125°C	Yes	View Data	New	Contact your local sales rep	Check Stock

Allegro's products are not to be used in any devices or systems, including but not limited to life support devices or systems, in which a failure of Allegro's product can reasonably be expected to cause bodily harm.