

## A4988: DMOS Microstepping Driver with Translator and Overcurrent Protection

The A4988 is a complete microstepping motor driver with built-in translator for easy operation. It is designed to operate bipolar stepper motors in full-, half-, quarter-, eighth-, and sixteenth-step modes, with an output drive capacity of up to 35 V and  $\pm 2$  A. The A4988 includes a fixed off-time current regulator which has the ability to operate in slow or mixed decay modes.

The translator is the key to the easy implementation of the A4988. Simply inputting one pulse on the STEP input drives the motor one microstep. There are no phase sequence tables, high frequency control lines, or complex interfaces to program. The A4988 interface is an ideal fit for applications where a complex microprocessor is unavailable or is overburdened.

During stepping operation, the chopping control in the A4988 automatically selects the current decay mode, Slow or Mixed. In Mixed decay mode, the device is set initially to a fast decay for a proportion of the fixed off-time, then to a slow decay for the remainder of the off-time. Mixed decay current control results in reduced audible motor noise, increased step accuracy, and reduced power dissipation.

Internal synchronous rectification control circuitry is provided to improve power dissipation during PWM operation. Internal circuit protection includes: thermal shutdown with hysteresis, undervoltage lockout (UVLO), and crossover-current protection. Special power-on sequencing is not required.

The A4988 is supplied in a surface mount QFN package (ET), 5 mm  $\times$  5 mm, with a nominal overall package height of 0.90 mm and an exposed pad for enhanced thermal dissipation. It is lead (Pb) free (suffix -T), with 100% matte tin plated leadframes.

### DATASHEETS

[A4988 Datasheet](#)

### SAMPLE & BUY

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### FEATURES & BENEFITS

### PACKAGING

### TECHNICAL DOCS

### NEWS

- Low RDS(ON) outputs
- Automatic current decay mode detection/selection
- Mixed and Slow current decay modes
- Synchronous rectification for low power dissipation
- Internal UVLO
- Crossover-current protection
- 3.3 and 5 V compatible logic supply
- Thermal shutdown circuitry
- Short-to-ground protection
- Shorted load protection
- Five selectable step modes: full, 1/2, 1/4, 1/8, and 1/16

### Product Image



Click the image to view larger

1 2 3

### Part Number Specifications and Availability

Part Number	Package Type	Temperature	RoHS Compliant	Part Composition / RoHS Data	Comments	Samples	Check Distributor Stock
A4988SETTR-T	28-lead QFN	-20°C to 85°C	Yes	<a href="#">View Data</a>		<a href="#">Contact your local sales rep</a>	<a href="#">Check Stock</a>
APEK4988SET-01-T	DEMO BOARD	-20°C to 85°C	No	--		<a href="#">Contact your local sales rep</a>	<a href="#">Check Stock</a>

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