SANYO

PRODUCT INFORMATION

Vol. 53

New Stepping Motor Driver Developed

Achieves 15 Current Level Settings at a Fixed Voltage

LB1847 Series

Overview

To compete in the contemporary printer market, printers now must achieve photographic quality printing. In particular, in the ink jet printer area, both high image quality and low cost are seen as critical. To provide this quality, motor drivers capable of high-precision drive control are required for the stepping motors used for paper drive and ink carriage drive in ink jet printers.

Microstep drive is now the mainstream in the stepping motors used in business printers. W1-2 phase excitation drive control is generally used as the driver control technique when driving stepping motors. In this technique, the reference voltage (Vref) is held fixed, and the current is set to one of four levels. Since low vibration and high precision are required for high image quality in printers, there is now a trend towards using either 2W1-2 phase excitation drive technique, which doubles the number of current level settings or the 4W1-2 phase excitation drive technique, which quadruples the number of current level settings. However, to achieve 2W1-2 or 4W1-2 phase excitation drive using existing drivers, it is necessary to add the ability to change the reference voltage (Vref) to control the switching of the current setting over multiple levels.

The newly-developed LB1847 is a PWM current control bipolar drive stepping motor driver, and is able to provide 15 current level settings with a fixed reference voltage. This means that the stepping motor control can be selected digitally to be any type from 1-2 phase excitation drive to 4W1-2 phase excitation drive, and can be used in a wide range of printers, from popularly priced models to high-image-quality models. The LB1847 also provides a current attenuation switching function (slow decay, fast decay, and mixed decay) that allows regenerative currents to be attenuated quickly when the drive is turned off, and provides improved following of the current setting.

Features and Functions

- Supports 1-2, W1-2, 2W1-2, and 4W1-2 phase excitation drive.
- PWM current control (Uses a fixed-length off period technique)
- Digital load current selection function
- Current attenuation switching function (slow decay, fast decay, and mixed decay)
- Simultaneous on state output prevention function (through current prevention)

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- Noise canceller function
- Thermal shutdown function
- Package: DIP-28H

Sample Availability

Samples of the LB1847 Series is available in January 1998; production quantities are anticipated in the spring of 1998.

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