

Product Overview

LV8774Q: PWM Constant-Current Control Stepper Motor Driver

For complete documentation, see the data sheet.

The LV8774Q is a 2-channel H-bridge driver IC, and can drive a stepper motor or two brushed DC motors. A stepper motor driver supports micro-step drive with 1/16-step resolution, and two brushed motor drivers support forward, reverse, brake, and standby functions. It is ideally suited for driving brushed DC motors and stepper motors used in office equipment and amusement applications.

Features

- Low on resistance (upper side : 0.3Ω , lower side : 0.25Ω , total of upper and lower : 0.55Ω ; $T_a = 25^\circ\text{C}$, $I_O = 2A$)
- Micro-step mode can be set to Full-step, Half-step, Quarter-step, or 1/16-step
- Excitation step proceeds only by step signal input with stepper motor
- Motor current selectable in four steps
- Output short-circuit protection circuit (selectable from latch-type or auto-reset-type)
- Unusual condition warning output pins
- Single-channel PWM current control stepper motor driver (or two DC motor driver)
- BiCMOS process IC
- No control power supply required

Applications

- Stepper/Brush DC Motors
- Computing & Peripherals
- Industrial

Benefits

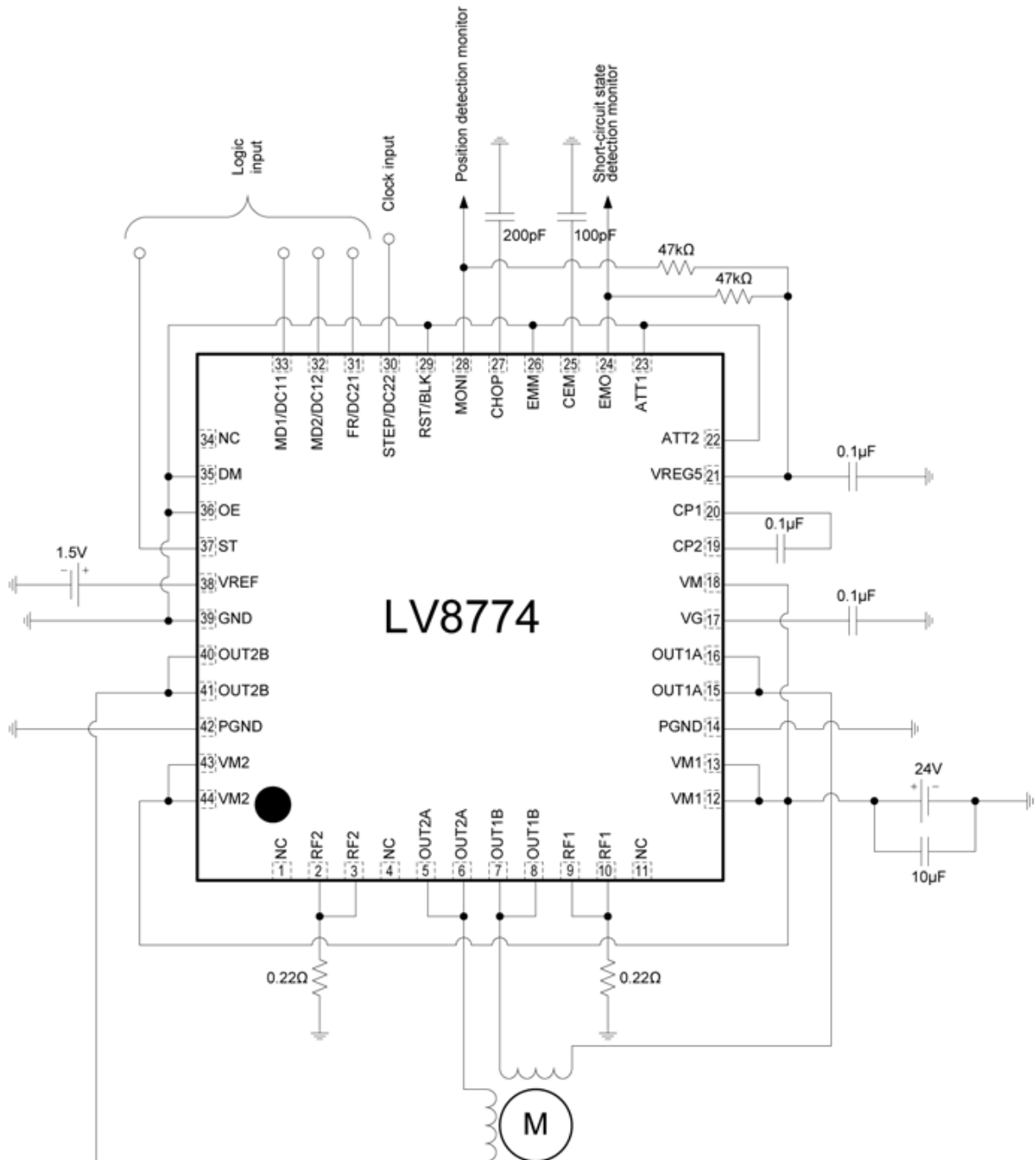
- High Efficiency
- Various Step Adjustment Available
- Easy Control for Micro-step Drive
- Low Consumption
- Safty Design
- Safty Design

End Products

- Printers
- Flatbed Scanner
- Inkjet Printer
- Multi-Function Printer
- Document Scanner

Application Diagram

Stepper Motor Driver Circuit (DM = Low)



The formulae for setting the constants in the example of the application circuit above are as follows :

Constant current (100%) setting

When $V_{REF} = 1.5V$

$$I_{OUT} = V_{REF}/5/RF \text{ resistance}$$

$$= 1.5V/5/0.22\Omega = 1.36A$$

Chopping frequency setting

$$F_{chop} = I_{chop}/(C_{chop} \times V_{tchop} \times 2)$$

$$= 10\mu A/(200pF \times 0.5V \times 2) = 50kHz$$

Timer latch time when the output is short-circuited

$$T_{cem} = C_{cem} \times V_{tcem}/I_{cem}$$

$$= 100pF \times 1V/10\mu A = 10\mu s$$

For more information please contact your local sales support at www.onsemi.com.

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