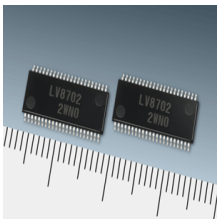
Product Overview

LV8702V: PWM Current Control High-Efficiency Stepper Motor Driver



For complete documentation, see the data sheet.

The LV8702V is a 2-channel Full-bridge driver IC that can drive a stepper motor driver, which is capable of micro-step drive and supports quarter step. Current is controlled according to motor load and rotational speed at half step, half step full-torque and quarter step excitation, thereby highly efficient drive is realized. Consequently, the reduction of power consumption, heat generation, vibration and noise is achieved.

Features

- Built-in 1ch PWM current control stepper motor driver (bipolar type)
- Ron (High-side Ron: 0.3Ω, Low-side Ron: 0.25Ω, total: 0.55Ω, Ta = 25°C, IO = 2.5A)
- Micro-step mode is configurable as follows: full step/half step full-torque/half step/quarter step
- Excitation step moves forward only with step signal input
- Built-in output short protection circuit (latch method)
- Control power supply is unnecessary
- Built-in high-efficient drive function (supports half step full-torque/half step/quarter step excitation mode)
- Built-in step-out detection function (Step-out detection may not be accurate during high speed rotation)
- IO max=2.5A
- Built-in thermal shut down circuit

  For more features, see the data sheet

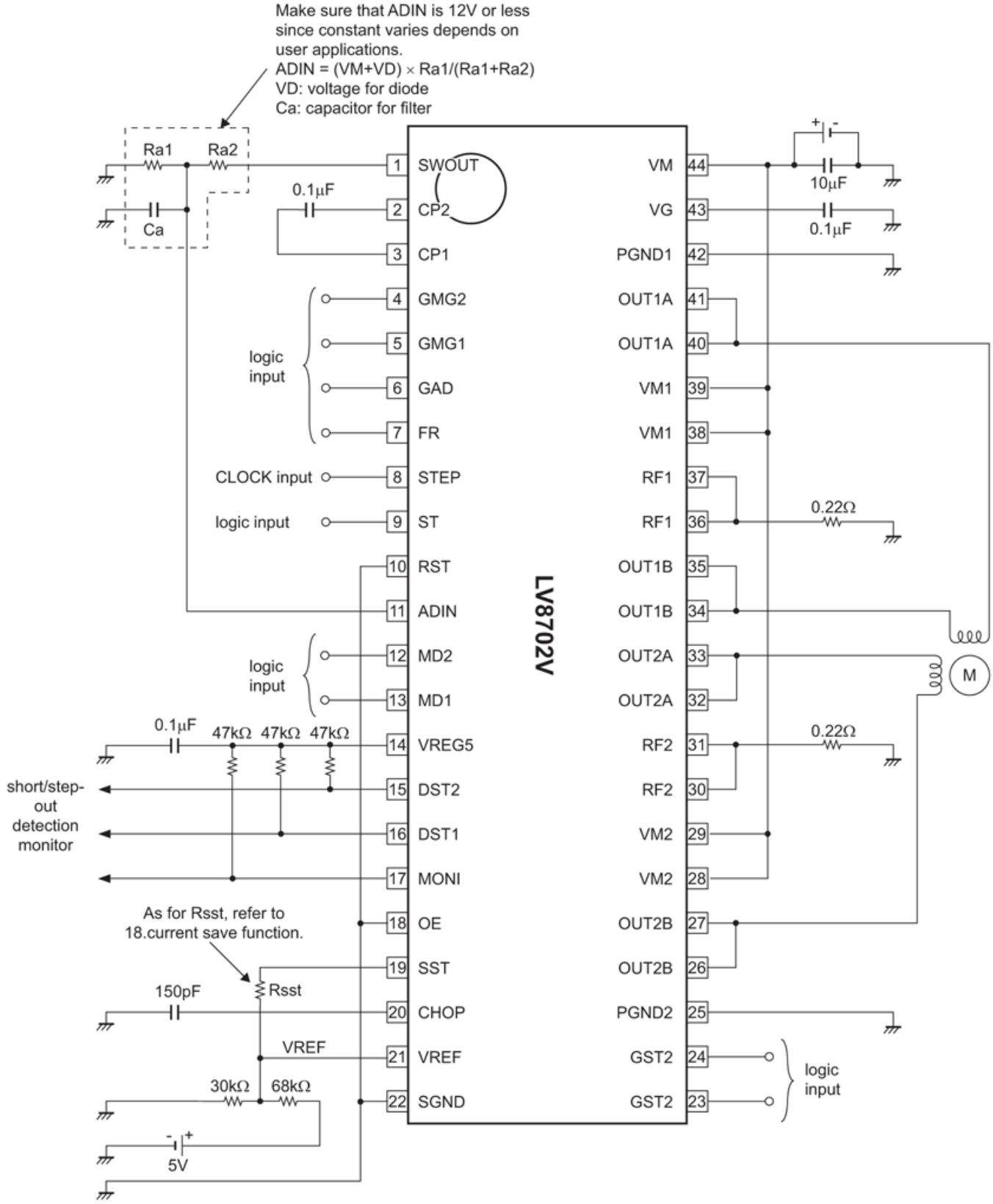
Applications

- Stepper
- Computing & Peripherals
- Industrial

End Products

- Printer
- Scanner
- Surveillance camera(CCTV)
- Textile machine

Application Diagram



Calculation for each constant setting according to the above circuit diagram is as follows.

1) Constant current (100%) setting

VREF = 5V×30kΩ/(68kΩ + 30kΩ) ≈ 1.53V

When VREF = 1.53V :

I_{OUT} = VREF/5/0.22Ω ≈ 1.39A

2) Chopping frequency setting

Fchop = Ichop/(Cchop×Vtchop×2)

=10μA/(150pF×0.5V×2)

≈ 66.7kHz

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