

MPC17531A

Dual H-Bridge Motor Driver

DUAL H-Bridge

DESCRIPTION

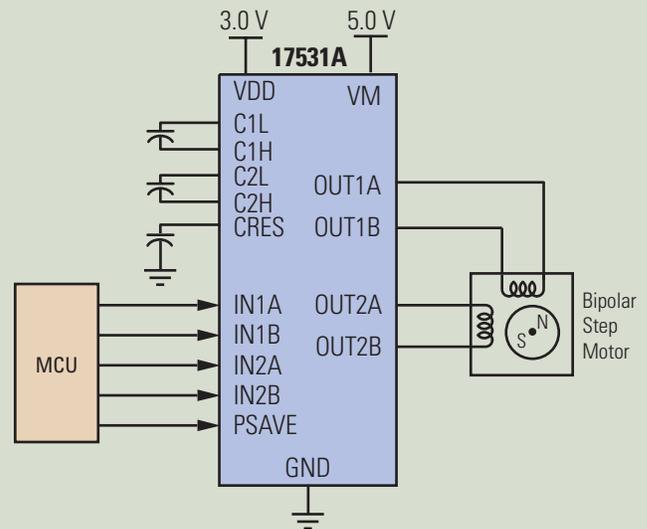
The 17531A is a monolithic dual H-Bridge power IC ideal for portable electronic applications containing bipolar step motors and/or brush DC-motors (e.g., cameras and disk drive head positioners).

The 17531A operates from 2.0 V to 8.6 V using the internal charge pump, with independent control of each H-Bridge via parallel MCU interface. The device features built-in shoot-through current protection and an undervoltage shutdown function.

The 17531A has four operating modes: Forward, Reverse, Brake, and Tri-Stated (High Impedance). The 17531A has a low total RDS(ON) of 1.2 Ω (max @ 25°C).

The 17531A efficiently drives many types of micromotors with low power dissipation owing to its low output resistance and high output slew rates. The H-Bridge outputs can be independently pulse width modulated (PWM'ed) at up to 200 kHz for speed/torque and current control.

17531A SIMPLIFIED APPLICATION DIAGRAM



APPLICATIONS

- Portable Electronics
- SLR Lens Shutter Control
- Optical Disc Drive (MO, DVD, and CD)
- DSC, DVC

PERFORMANCE

TYPICAL VALUES

Outputs	2 ch
Output Voltage, VDD	0.7 V
Peak Current	1.4 A
Motor Operating Voltage	2.0 V – 8.6 V
Logic Operating Voltage	2.7 V – 3.3 V
Input PWM max	200 kHz
Operating Temperature	-20°C ≤ T _A ≤ 65°C

FEATURES

- Low total RDS(ON) 8.0 W (typ), 1.2 W (max) @ 25°C
- Shoot-through current protection circuit
- Built-in charge pump circuit
- Low power consumption
- Undervoltage detection and shutdown circuit
- Power save mode with current draw \leq 2.0 mA
- Pb-free packaging designated by suffix codes EV and EP
- Additional devices available for comparison in Analog Product Selector Guide, SG1002 and Automotive Product Selector Guide, SG187.

PROTECTION	DETECT	SHUT DOWN
Undervoltage	●	●

CUSTOMER BENEFITS

- Easy MCU interfacing and control
- Undervoltage protection to prevent erratic operation
- High PWM rate for enhanced motor control
- Low profile package for portable designs
- Integral charge pump for simpler system
- Low quiescent current
- Two H-Bridges integrated in one package
- Reduced design time

QUESTIONS

- Are you working on portable electronic powered applications?
- Do you need to control a bipolar stepper or brush DC-motor in a 3.3 V logic system?
- Are you designing a motion control system using motors up to 1.4 A (peak) and 8.6 V DC?

ORDERING INFORMATION

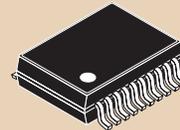
Device	Temperature Range (T _A)	Package
**17531AEV/EL	-20°C to 65°C	20 VMFP
**17531AEP/R2		24 QFN

Data Sheet Order Number MPC17531AF

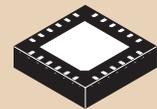
**Prefix Index:

PC = Engineering Samples; MC = Production

Contact Sales for Evaluation Kit Availability



20 VMFP
0.65 mm Pitch
7.25 mm x 5.35 mm Body



24 QFN
0.5 mm Pitch
3.25 mm x 3.25 mm Body
2.75 mm x 2.75 mm Exposed Pad