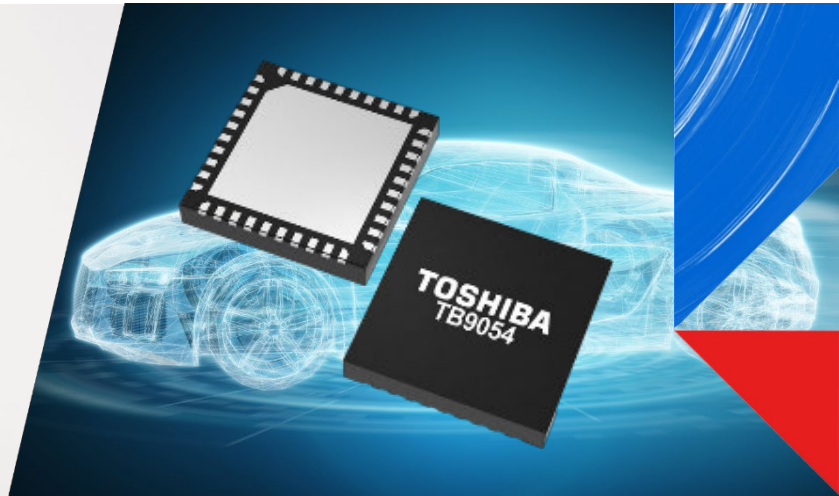


10A H-Bridge Drivers

TB9054FTG TB9053FTG



Configurable in 2 x 5A Dual-Channel Mode

Qualified according to AEC-Q100 Grade 1, TB9054/53 integrate two separated 5A H-bridge channels to directly drive DC brushed motors. 10A 1-channel motor drive is possible when both channels are configured to operate in parallel. Motors can be controlled in real-time either by conventional PWM signals or by SPI, daisy-chain mode is also supported. The SPI interface is also used for advanced diagnosis as well as device parametrization. Various failure detection mechanisms ensure a safe system operation.

Applications

- ETC (Engine Throttle Control)
- EGR (Exhaust Gas Recirculation)
- Power mirror folding
- Lid actuator for rear-view camera or OBC socket
- Grill shutter control
- Seat adjustment
- Power door opening & closing
- Shift-by-wire actuators
- Small fans

Features

- Integrated 2-channel 5A H-Bridge
- Supports 10A 1-channel parallel mode
- 280mΩ path-resistance @ Tj=150°C
- VBAT = 4.5V to 28V
- Smart charge-pump (CP)
- H-Bridge control by PWM or SPI
- SPI communication supporting:
 - Real-time-control for (counter)-clockwise operation, speed, short break and standby
 - Daisy-chain mode
 - Initialisation and diagnosis
- Various failure detection modes:
 - Over-current, over/under-voltage, over-temp, open-load, short circuit to VBAT or GND
- Enhanced thermal package version available with Rth=0.67°C/W (TB9053)

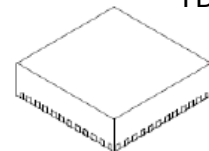
Advantages

- No external MOSFET drivers required
- Small power dissipation
- No external charge-pump capacitor required
- SPI daisy-chain and SPI real-time control allows selection of a small pin-count MCU
- Simplified system cooling design possible due to thermal enhanced package version

Benefits

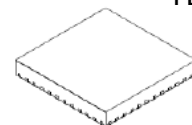
- Less components
- Less PCB space
- Lower bill of material cost
- Less qualification efforts

TB9053FTG



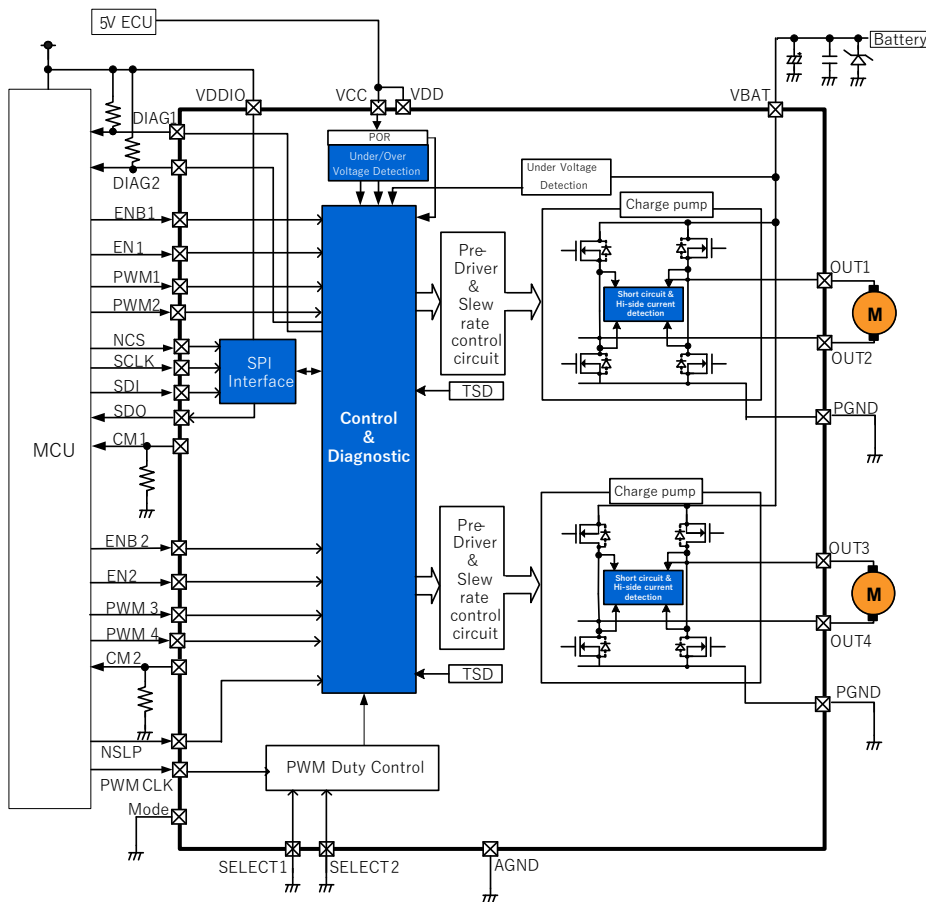
P-QFN40-0606-0.50 | 40 Pins

TB9054FTG



P-VQFN40-0606-0.50 | 40 Pins

TB9054FTG/TB9053FTG block diagram



Low cost evaluation board

The MIKROE Click board™ allows quick and easy device evaluation and prototyping

TB9054FTG: <https://www.mikroe.com/dc-motor-12-click>

TB9053FTG: <https://www.mikroe.com/dc-motor-26-click>



TB9054FTG & TB9053FTG technical data

Automotive Brushed DC Motor Driver ICs

<https://toshiba.semicon-storage.com/eu/semiconductor/product/automotive-devices/automotive-brushed-dc-motor-driver-ics.html>

