

Product Brief

TLS850F0TAV50/33

High performance linear voltage regulator



TLS850F0TAVxx is a high performance voltage regulator in PG-TO263-7. With wide input voltage range (3 V to 40 V) and very low quiescent of only 40 μ A, this regulator is perfectly suitable for automotive systems connected permanently to battery. TLS850F0TAVxx is available in 5.0 V and 3.3 V output voltage with 2% accuracy and maximum output current up to 500 mA.

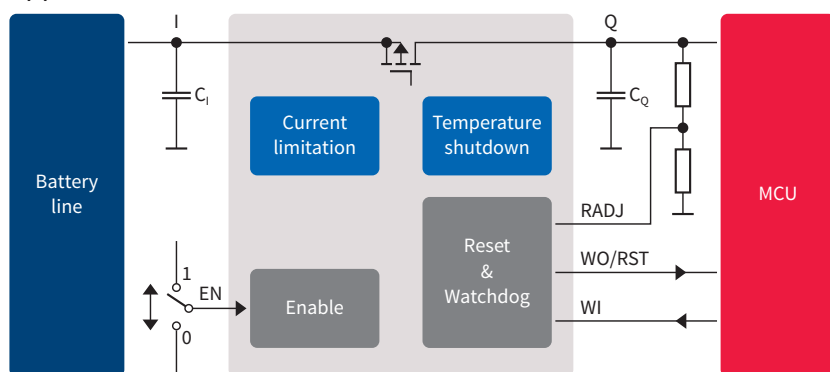
Its new loop concept combines fast regulation and very good stability requiring only one small ceramic output capacitor of 1 μ F. TLS850F0TAV50 has a very low dropout voltage of only 70 mV and an extended input operating range down to 3 V making it suitable to supply automotive systems during cranking condition and especially for stop and start system.

The device can be switched on and off by the enable feature leading to a current consumption of typ. 1.3 μ A. The output voltage is supervised by the reset feature, including under-voltage reset, delayed reset at power-on and an adjustable lower reset threshold. In addition, a watchdog circuit is integrated to monitor the microcontroller's operation. Its internal protection features prevent the device against failures like output short circuit to GND, overload and overtemperatures.

Applications

- > Automotive application with stop & start/cranking requirements
- > Safety applications requiring excellent line transient robustness
- > ADAS, dashboard, clusters, gateway & HVAC, powertrain
- > 16 and 32 bits microcontroller supply

Application schematic



www.infineon.com/voltage-regulators

Key Features

- > Enable, reset & watchdog
- > Output voltage: 5.0 V and 3.3 V
- > Input current: 500 mA
- > Low current consumption: 40 μ A
- > Drop voltage: 70 mV @ 100 mA

Key Benefits

- > Excellent transient robustness – lower input filtering cost
- > Cost optimized ceramic output capacitance – 1 μ F
- > Very low cranking – 3 V input & very low dropout
- > Suitable for stop & start system



High performance linear voltage regulator



Family overview

| Key Features | Key Benefits |
|--|---|
| <p>Low drop voltage</p> | <p>Suitable for very low cranking (stop and start)</p> |
| <p>Low quiescent current</p> | <p>Energy efficiency: Save battery resources for ECUs in stand-by mode</p> |
| <p>Excellent line transient</p> | <p>Design for harsh automotive environment</p> |

| Output current | Quiescent current | No feature | Enable | Reset | Watchdog |
|----------------|-------------------|------------|------------------|--------------|----------|
| 50 mA | < 10 µA | | TLS805B1 V & V50 | | |
| 100 mA | | | TLS805B1 V50 | | |
| | | | TLS810D1 V50 | | |
| | | | | TLS810C1 V33 | |
| 200 mA | < 40 µA | | TLS820F0 V33/50 | | |
| | | | TLS820D0 V50/33 | | |
| 400 mA | | | TLF80511 V33 | | |
| | | | TLF80511 V50 | | |
| 500 mA | | | TLS850F0 V33/50 | | |
| | | | TLS850D0 V50 | | |

V = Adjustable Output Voltage
 V33 = 3.3V Output
 V50 = 5.0V Output

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