



Product brief

TLS850B0-family

High-performance linear voltage regulator



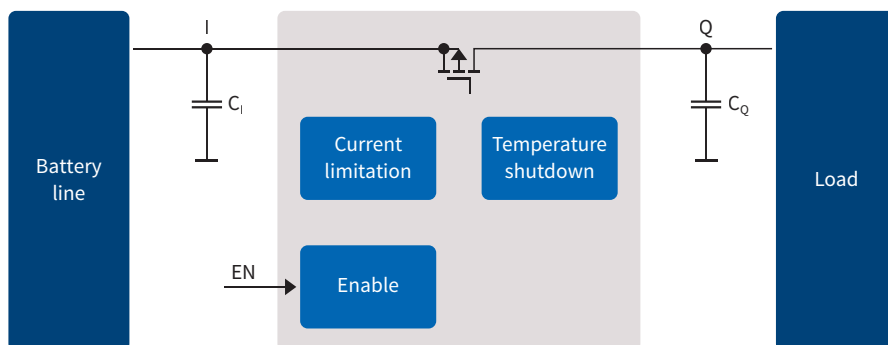
The TLS850B0 is a high-performance, very low dropout linear voltage regulator for 3.3 V and 5.0 V supply in a TO263-5 and TO252-5 package.

The input voltage range of 3.0 V to 40 V and a very low quiescent current of 20 μ A make it the perfect match for automotive or other supply systems connected to the battery permanently. The new loop concept combines fast regulation and very high stability while requiring only one small ceramic capacitor of 1 μ F at the output. Below an output current of 100 mA the typical dropout voltage of 100 mV is very low. The operating range starts at an input voltage of only 3 V (extended operating range). This makes the TLS850B0 suitable for automotive systems that need to operate during cranking condition.

The device can be switched on and off by the enable feature.

Internal protection features like output current limitation and overtemperature shutdown protect the device from immediate damage.

Application diagram for TLS850B0 for 12 V ECUs



Key features

- > Enable
- > Output voltage accuracy: ± 2 percent
- > Dropout voltage: 100 mV
- > Current consumption: 20 μ A
- > Available in TO252 and TO263 package
- > Wide operating temperature range: $-40^{\circ}\text{C} \leq T_j \leq 150^{\circ}\text{C}$

Benefits

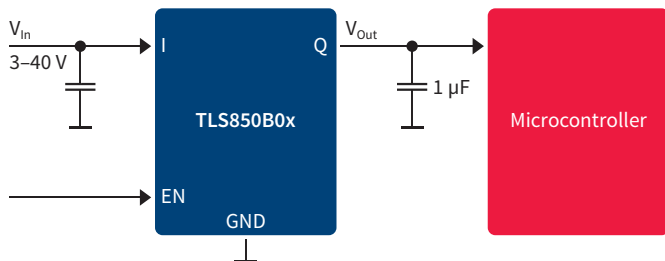
- > Wide input voltage range
- > Robust TO252 and TO263 package
- > Reduces energy consumption, suitable for stand-by operation
- > Minimized external BOM

Applications

- > General automotive MCU power supply
- > EPS, 2 wheeler dashboard, instrument cluster
- > Body electronics, HVAC panel, etc.

TLS850B0-family

High-performance linear voltage regulator



Key features

Low drop voltage
(~100 mV)

Low current
consumption (~20 µA)

Excellent regulation
loop

Key benefits

Suitable for cranking
(stop and start support
from $V_{in} = 3\text{ V}$)

Longer battery lifetime

BOM cost optimized
stable V_{out}

Products

| Product name | OPN | Output current I_{out} [mA] | Quiescent current I_q [µA] | Enable | R_{thJA} [K/W] | Output voltage [V] | Package |
|---------------|--------------------|-------------------------------------|------------------------------------|--------|---------------------|-----------------------|---------|
| TLS850B0TBV33 | TLS850B0TBV33ATMA1 | 500 | 20 | Yes | 26 | 3.3 | TO263 |
| TLS850B0TBV50 | TLS850B0TBV50ATMA1 | 500 | 20 | Yes | 26 | 5.0 | TO263 |
| TLS850B0TEV33 | TLS850B0TEV33ATMA1 | 500 | 20 | Yes | 26 | 3.3 | TO252 |
| TLS850B0TEV50 | TLS850B0TEV50ATMA1 | 500 | 20 | Yes | 26 | 5.0 | TO252 |

Demoboards

| Product name | OPN | Description |
|--------------------|------------------------|--|
| TLS850B0TB50 BOARD | TLS850B0TB50BOARDTOB01 | TLS850B0 Demoboard D ² PAK TO263-5, 5.0 V |
| TLS850B0TB33 BOARD | TLS850B0TB33BOARDTOB01 | TLS850B0 Demoboard D ² PAK TO263-5, 3.3 V |
| TLS850B0TE50 BOARD | TLS850B0TE50BOARDTOB01 | TLS850B0 Demoboard DPAK TO252-5, 5.0 V |
| TLS850B0TE33 BOARD | TLS850B0TE33BOARDTOB01 | TLS850B0 Demoboard DPAK TO252-5, 3.3 V |

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