

Product brief

TLS1 series

High performance sensor supply IC

The TLS105B0 and TLS102B0 are monolithic integrated low-dropout voltage tracking regulators with high accuracy in a small SCT595-5 package. The TLS10xB0 is designed to supply off-board systems, for example, sensors in powertrain management systems under the severe conditions of automotive applications. Therefore, the TLS10xB0 is equipped with additional protection functions against reverse polarity and short circuit to GND and battery. With supply voltages up to 40 V, the output voltage follows the reference voltage applied at the EN/ADJ input with 0.01 percent accuracy. The reference voltage applied to the adjust input can be down to 2.0 V. TLS105B0MB is able to drive loads up to 50 mA while the device follows the reference voltage (e.g. the 5 V output of a main voltage regulator) with very high precision. TLS102M0BM is able to drive up to 20 mA loads.

Key features

- > Designed for automotive at 150°C
- > Short to GND and V_{Batt} protected
- > High accuracy tracking
- > Overvoltage and undervoltage monitor

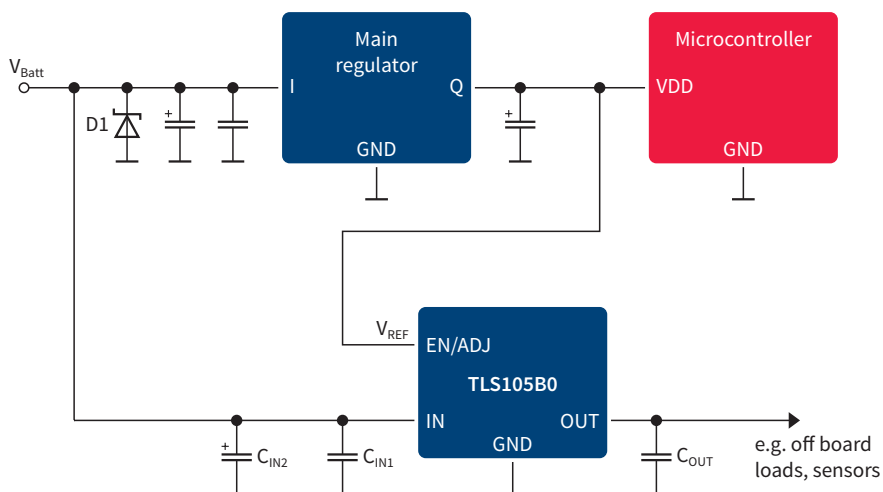
Benefits

- > Reliable protection for ECU/sensor
- > Easy and accurate voltage replication
- > High flexibility/scalability
- > Lower design effort → design cost saving

Applications

- > Automotive sensor supply
- > Protected sensor supply for off-board sensors
- > Secondary voltage supply in automotive ECU
- > High-precision voltage replication
- > Power switch for off-board load

Application schematic



Reliable and robust sensor supply IC

Family description



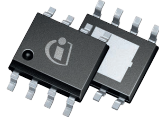

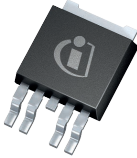
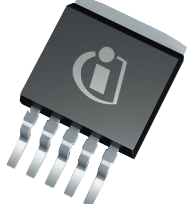
Infineon offers a wide portfolio of automotive sensor supply ICs, also called voltage trackers ICs. This family covers output currents from 50 mA to 400 mA and is implemented in a robust technology focused on Automotive harsh environment. Multiple protection

features are implemented to protect the ECU from wire harness malfunctioning. A wide package offer, from smallest SCT595 to power package TO263, enables flexible product selection according to the space available and thermal considerations.

Family overview

Product	Output current [mA]	Tracking accuracy [%]	Min. adjust voltage [V]	Independent EN pin	Status pin	FB pin	Package
TLS102B0 NEW	20	±0.1	2.0	–	–	–	SCT595
TLS105B0 NEW	50	±0.1	2.0	–	–	–	SCT595
TLE4250-2	50	±0.5	2.5	–	–	–	SCT595
TLE4254x	70	±0.1	2.0	–	Yes	–	DSO-8 DSO-8 EP
TLS115x	150	±0.1	2.0	Yes	Yes	–	DSO-8 EP TSON-10 EP
TLE4252x	250	±0.2	1.5	Yes	–	–	TO252
TLE4253x	250	±0.2	2.0	–	–	Yes	DSO-8 DSO-8 EP
TLE4251x	400	±0.2	2.5	Yes	–	–	TO252 TO263

Package overview

	SCT595	TSON-10 EP	DSO-8 EP	DSO-8	TO252	TO263
Outline						
Size	2.9 mm x 2.5 mm	3.3 mm x 3.3 mm	4.9 mm x 6 mm	4.9 mm x 6 mm	6.5 mm x 10 mm	10 mm x 15 mm
$R_{th} @ 2p2s^{1)}$	~81 K/W	~53 K/W	~45 K/W	~114 K/W	~25 K/W	~20 K/W

1) According to Jedes JESD51-2, -5, -7 at natural convection on FR4 2s2p board

Visit our sensor supply page for more information: <http://www.infineon.com/sensor-supply>

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