



TLI4970-D050T4 miniature magnetic digital current sensor $\pm 50A$, $\pm 1\%$, 80kSPS, digital output

The TLI4970 is a high precision current sensor based on Infineon's well established Hall technology. The coreless concept allows significant miniaturization compared to existing solutions. It is a fully digital solution, easy to use. There is no need for any external calibration and additional parts (such as A/D converters, OP Amps, Reference Voltage) reducing the overall implementation effort, PCB space and cost significantly.

Product highlights:

- Fully calibrated digital output
- On-chip temperature and stress compensation
- Programmable low-pass filter for current measurement (0-10kHz)
- Fast and configurable over-current detector (>150kHz)
- Inherent magnetic stray field rejection
- Small package size and weight allows SMD mounting

The TLI4970 provides superior accuracy compared to existing open or closed loop systems with magnetic cores. It has additional functionality such as over-current detection and programmable filters, but offers a significantly smaller footprint and power consumption.

Applications

The TLI4970 is suitable for AC and DC current measurement applications like photovoltaic inverters, PFC power supplies, chargers, lighting and drives. With its implemented stray field suppression, it is extremely robust against external magnetic fields. It is also suitable for fast over-current detection at configurable level. This allows the control unit to switch off and protect the affected power consumers from damage, independently of the main measurement path.

Sensor features

- Galvanic isolated, low resistance measurement principle
- Coreless solution, hysteresis free
- Inherent suppression of stray magnetic field
- 16bit internal resolution
- Update rate: 80kSPS
- Adjustable LP filter (0-10kHz)
- Configurable over-current comparator (allows $3\mu\text{s}$ quick system shut-off)
- Suitable for industrial and consumer applications
- Plug and play solution – no external calibration needed
- Long-term stability of output signal

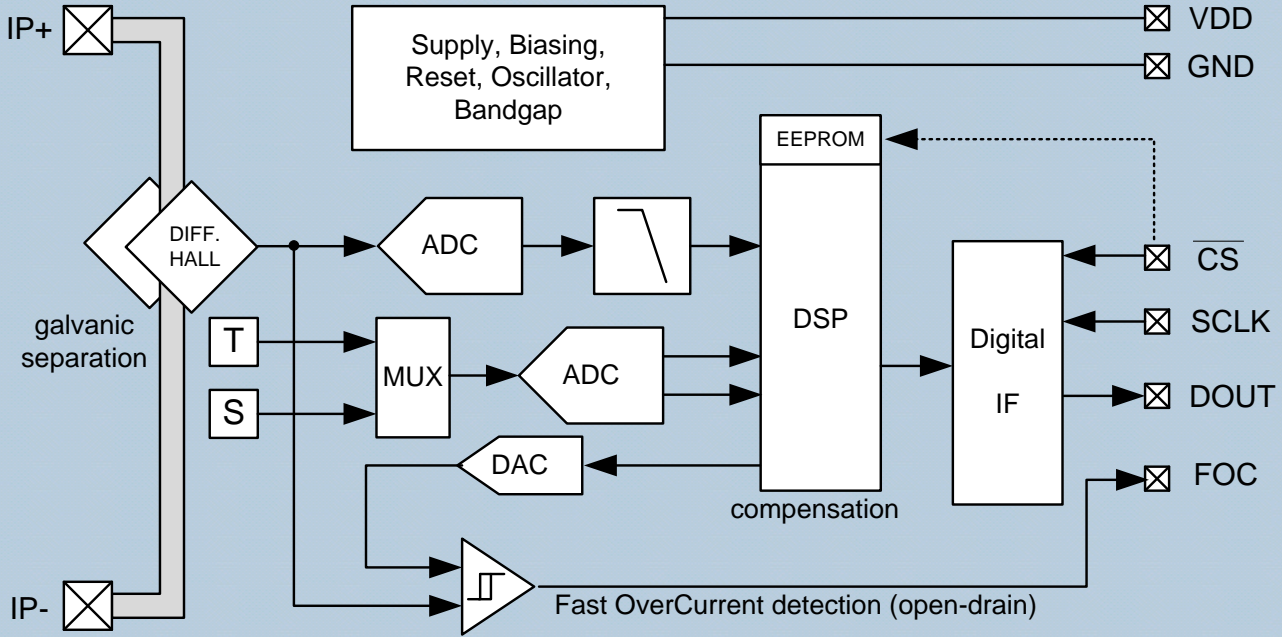
Digital interface

- SPI-3 wire
- SICI-1 wire (serial inspection and configuration interface)

Package

- Leadless package (QFN-like) PG-TISON-8
- Size in mm: (L,W,H) 7.0x7.0x1.0
- Weight: 0,2g
- Galvanic isolation
- SMD mounting

TLI4970 Block Diagram



Product Name	Description	Order Code
TLI4970-D050T4	Qualified according to industrial standards: For use in industrial and consumer applications	SP000917088

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Published by
Infineon Technologies AG
81726 Munich, Germany

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