

Product Brief

TLF35584

System-Supply for Safety-Relevant Applications



The TLF35584 is a multiple output system-supply for safety-relevant applications supplying 5 V or 3.3 V μ C, transceivers, and sensors by an efficient and flexible pre-/post-regulator concept over a wide input voltage range. The wide switching frequency range allows optimization in respect of efficiency and usage of small filter components. A dedicated reference-regulator supplies the ADC independent from μ C-load steps and acts as tracking-source for the 2 independent sensor-supplies. The flexible state machine, wake-up concept including timer, and the stand-by-regulator favors the usage in numerous applications.

Multiple safety features enable easy realization of ASIL-D together with various μ Cs. The TLF35584 is coming in small VQFN-48 (QV-version) capable for automated optical inspection and additionally in LQFP-64 (QK-version), both packages thermally enhanced.

Key Features

- Pre-/post-regulator concept:
 - boost & buck / LDOs & trackers for
 - μ C (main, ADC/reference, StBy)
 - Transceivers
 - Sensors
- Integration of functional safety (features supporting ASIL-D)
 - UV/OV-monitoring
 - Flexible watchdogs
 - Error-monitoring
 - Safe state controller with 2 outputs
 - BIST

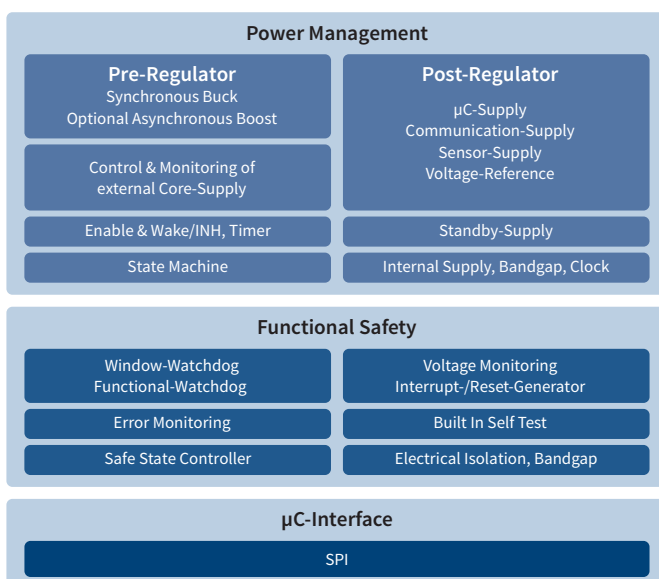
Key Benefits

- Efficiency and flexibility
- Enables ASIL-D on system level
- Wide temperature range

Applications

- Safety: EPS, braking, suspension, chassis-controller, ADAS-fusion-box
- Powertrain: EMS, transmission
- EDT: inverter, BMS, DC/DC, charger

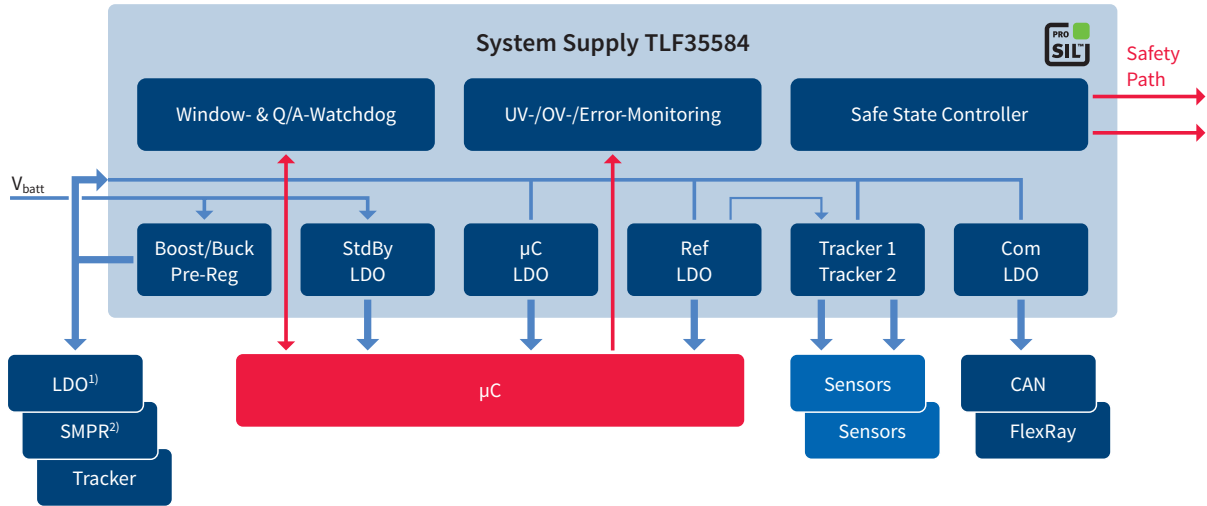
Functional Block Diagram



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Application Diagram



- 1) LDO: Low-Dropout Linear Regulator
- 2) SMPR: Switch-Mode Post-Regulator

Functional Safety

The device is developed acc. ISO 26262. The applied processes, safety assessment, and provided documentation (Safety Manual, Safety Analysis Summary Report) are reducing efforts and time for the safety assessment on ECU-level.

Required safety integrity functions for ASIL-D are already implemented: UV/OV-monitoring of all rails with independent reference, detecting dependent failures by flexible watchdog-concept, monitoring of µC's safety management unit, and a safe state controller

providing secondary safety paths. A built-in-self-test is ensuring the proper function of the relevant safety features. All features are perfectly aligned to the Infineon's AURIX™-requirements, but are extended to support other µCs as well.

All safety-relevant configurations are protected and can only be changed by special, successfully performed unlock/lock-sequence.

Product Summary

| Type | Description | Ordering Code |
|--------------------|-------------------------------------|-------------------------|
| TLF35584QV VS1/VS2 | PG-VQFN-48; 5 V/3.3 V for µC-supply | SP001096170/SP001096172 |
| TLF35584QK VS1/VS2 | PG-LQFP-64; 5 V/3.3 V for µC-supply | SP001273504/SP001273506 |

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