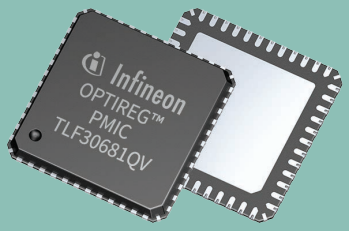


Product brief

TLF30681QVS01

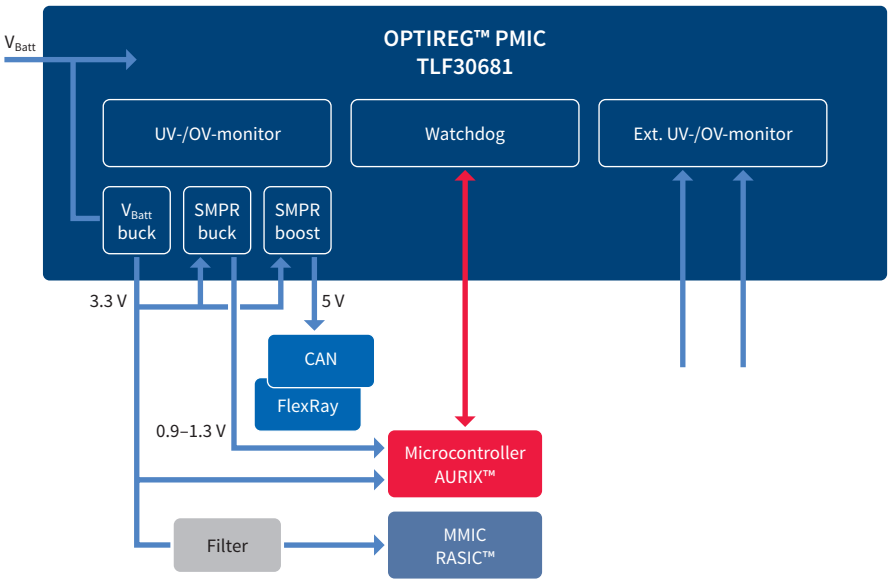
OPTIREG™ PMIC

The TLF30681QVS01, member of the OPTIREG™ PMIC-family, is a multi-rail supply for ADAS-applications like 77 GHz Short Range Radar (SRR), 24 GHz radar, and 60 GHz radar (e.g. In-cabin sensing).

It's using an efficient and flexible pre-/post-regulator concept over a wide input voltage range. The high switching frequency range of the battery connected, synchronous buck (3.3 V/2.3 A) with integrated switches allows optimization in usage of small filter components. An integrated synchronous SMPR-buck (Switch-Mode Post-Regulator) with high switching frequency enables supply for core or for memory (0.9 V-1.3 V/1.0 A). Additionally, an asynchronous SMPR-boost (5.0 V/0.25 A), running as well with high switching frequency, provides the 5 V-domain for transceivers. Integrated switches, compensation and the high switching frequency is both minimizing the number and the value of external components required.

Additional features are under-/over-voltage monitoring (via independent reference) of all integrated and up to two external rails as well as a flexible watchdog concept to supervise the µC offers high flexibility for multiple applications. The automotive qualified TLF30681QVS01 is coming in small, thermally enhanced VQFN-48 capable for automated optical inspection.

TLF30681 block diagram



www.infineon.com/optireg-pmic

Key features

- Pre-/post-regulator concept: Buck/SMPR-buck & SMPR-boost
  - µC or MMIC or DSP
  - Core or memory
  - Transceivers
- UV/OV-monitoring for integrated rails
- UV/OV-monitoring for external rails
- Flexible watchdog

Key benefits

- High efficiency and flexibility
- Wide temperature range
- Reduced number of external components for minimized PCB-area
- Minimized values of external components for cost optimization

Applications

- 77 GHz SRR (Short Range Radar)
- 24 GHz radar
- 60 GHz radar (In-cabin sensing)

TLF30681QVS01

OPTIREG™ PMIC

The device is optimized for 77 GHz radar applications within Infineon's radar chipset consisting of RXS8156PLA RASIC™ MMIC, TC33xDA AURIX™ µC, and CAN-transceiver TLE9250VLE.

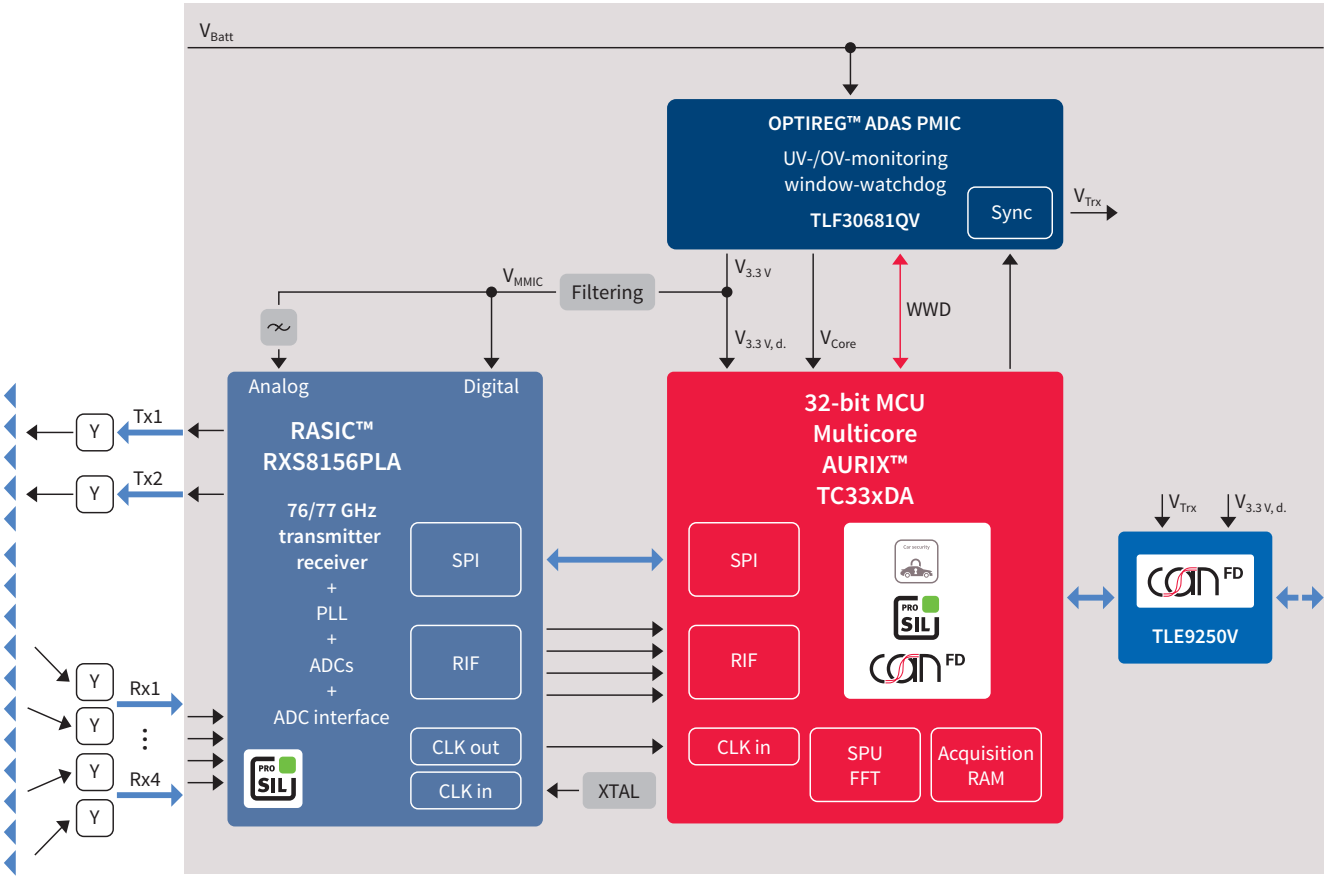
All features and functions are optimized to work together enabling easy, fast implementation. Functional safety documents are available on request for TLF30681QVS01.

The device is part of the OPTIREG™ PMIC family TLF3068x providing optimum solutions for short-range radar.

Additional family member is

› TLF30682, similar, pin-compatible device but with more current capability on the 2 buck rails optimized for mid/long-range radar with RXS8161PL and TC35xTA.

Application diagram 77 GHz Short Range Radar (SRR)



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