Three- to Five-Input Power-System Monitor with Clock Monitor and Watchdog

MAX20484

General Description

The MAX20484 is a complete ASIL D compliant SoC power system monitor with up to five voltage monitor inputs. Each input has programmable OV/UV thresholds of between 2.5% and 10% with ±0.8% accuracy.

The MAX20484 contains a programmable flexible power sequence recorder (FPSR). This recorder stores power-up and power-down timestamps separately, and supports on/ off and sleep/standby power sequences. The MAX20484 also contains a programmable challenge/response watchdog, which is accessible through the I^2C interface, and an external clock/fault monitor along with two configurable $\overline{RESET}$ outputs.

The MAX20484 significantly reduces system size and component count while improving reliability, as compared to separate ICs or discrete components. The MAX20484 meets ASIL D reliability when used with a supervisory controller. The device is designed to operate over the ambient temperature range of -40°C to +125°C.

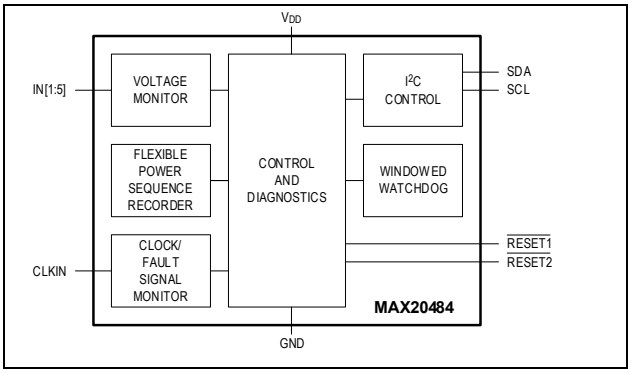
Applications

- ADAS
- Autonomous Driving Processing Systems
- Remote Sensor Modules
- Power System Supervision and MCU/SoC Monitoring

Benefits and Features

- Small Solution
  - 2.35V to 5.60V Operating Supply Voltage
  - Only One External Component Required
  - 150µA Operating Current
  - 8µA Power-Down Mode
  - Universal Channel Configurations
- High Precision
  - Selectable 102.5% to 110% OV Monitors
  - Selectable 97.5% to 90% UV Monitors
  - ±0.8% Accuracy with 0.5% Step Size
  - ASIL D Compliance
- Highly Integrated
  - Five Fixed-Voltage Monitoring Inputs
  - Clock/Fault Monitor Input (25kHz to 50MHz)
  - Power-Sequencing Recording
  - Simple or Challenge/Response Windowed Watchdog
  - Fault Recording
  - CRC on I^2C Interface
  - Programmable I^2C Address
  - OTP Configuration with Error-Correcting Code and Reload Functionality
  - Two Independently Programmable $\overline{RESET}$ Pins
- 3mm x 3mm, 16-Pin, Side-Wettable TQFN-EP
- AEC-Q100 Qualified
- -40°C to +125°C Operating Temperature

Simplified Application Diagram



Ordering Information ***appears at end of data sheet.***

Visit Web Support to complete the nondisclosure agreement (NDA) required to receive additional product information.

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