

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 $\pm 0.8\%$ 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 I²C interface, and an external clock/fault monitor along with two configurable $\overline{\text{RESET}}$ 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 $+125^{\circ}\text{C}$.

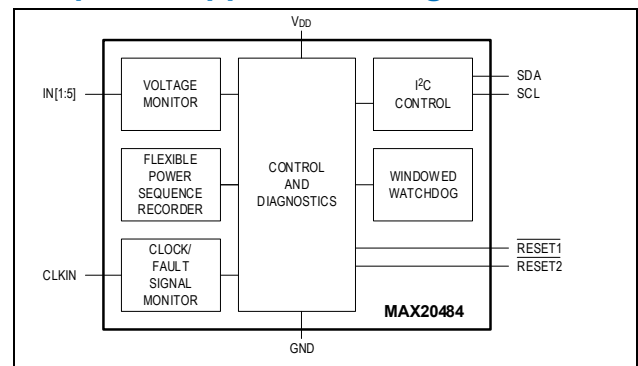
Applications

- 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
 - 150 μA Operating Current
 - 8 μA Power-Down Mode
 - Universal Channel Configurations
- High Precision
 - Selectable 102.5% to 110% OV Monitors
 - Selectable 97.5% to 90% UV Monitors
 - $\pm 0.8\%$ 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 I²C Interface
 - Programmable I²C Address
 - OTP Configuration with Error-Correcting Code and Reload Functionality
 - Two Independently Programmable $\overline{\text{RESET}}$ Pins
- 3mm x 3mm, 16-Pin, Side-Wettable TQFN-EP
- AEC-Q100 Qualified
- -40°C to $+125^{\circ}\text{C}$ Operating Temperature

Simplified Application Diagram



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