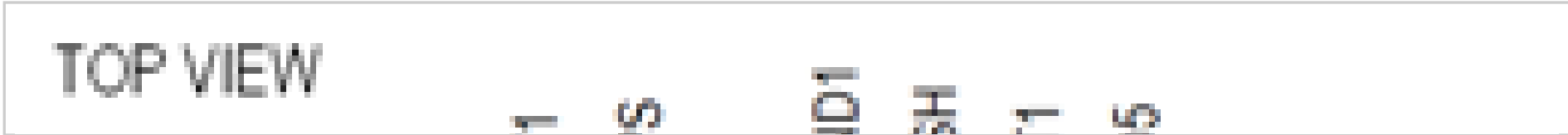
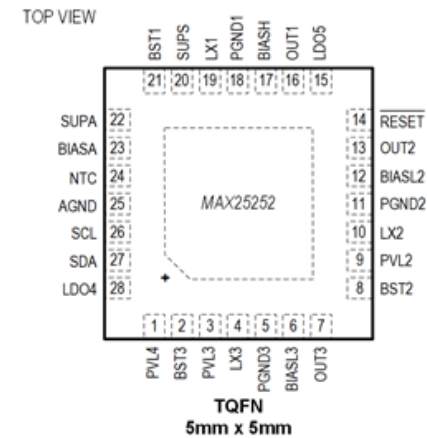
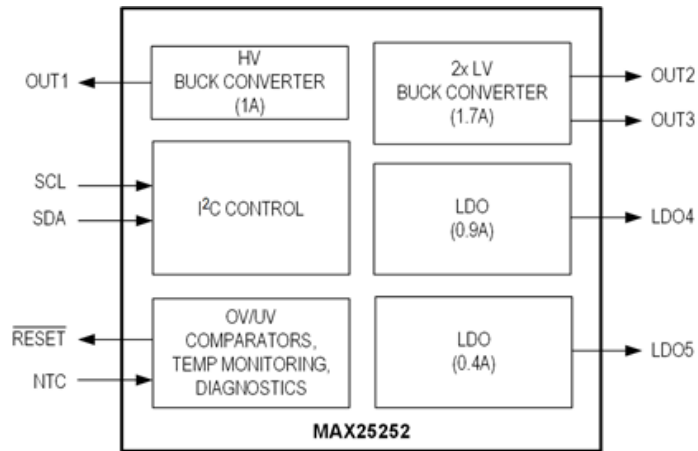


MAX25252

Five-Output ASIL B PMIC with Accurate Temperature Monitoring for Next-Generation Camera Sensors

BUY NOW

Recommended for New Designs



Overview

Features and Benefits Product Details

- Multiple Functions for Small Size
 - 1A Synchronous High-Voltage Buck Converter
 - Input Voltage Range 3.5V to 22V
 - 2.5V to 5V Output Voltage in 100mV Steps
 - Two Synchronous Low-Voltage Buck Converters
 - Delivers up to 1.7A Current
 - 0.75V to 3.9375V Output Voltage in 12.5mVSteps
 - High-PSRR, Low-Voltage LDO for Camera Sensor
 - Delivers up to 0.4A Current
 - 0.75V to 3.9375V Output Voltage in 12.5mVSteps
 - Low-Voltage LDO
 - Delivers up to 0.9A Current
 - 0.75V to 3.9375V Output Voltage in 12.5mVSteps
 - 2.1MHz Operation
 - $\overline{\text{RESET}}$ Output for OV/UV Detection and OtherDiagnostics
 - SUP Voltage OV/UV Indication
- High Precision for ASIL B Applications
 - $\pm 1.5\%$ Output Voltage Accuracy (OUT1-OUT5)
 - $\pm 1\%$ OV/UV Monitoring Accuracy
- High-Precision Temperature Monitoring
 - 12-Bit ADC for Accurate Board Temperature
 - $\pm 0.096\%$ Voltage Measurement Accuracy
- Robust for the Automotive Environment
 - ASIL B Compliant
 - Current-Mode, Forced-PWM Operation
 - Overtemperature and Short-Circuit Protection
 - 5mm x 5mm, 28-Pin Side-Wettable TQFN
 - -40°C to $+125^{\circ}\text{C}$ Automotive Temperature Range
 - AEC-Q100 Qualified

The MAX25252 is a high-efficiency, five-output ASIL B PMIC with three DC-DC converters, and two high-PSRR LDOs, with OV/UV monitoring on all outputs. OUT1 is a 1A high-voltage, synchronous step-down converter operating from power over coax. OUT2 and OUT3 are low voltage synchronous step-down converters and provide a 0.75V to 3.9375V output voltage range. OUT2 and OUT3 can deliver up to 1.7A current respectively for the high-megapixel cameras and high-speed serializers. LDO4 and LDO5 deliver up to 0.4A and 0.9A of current to power the secondary rails of the imager and a serializer. All outputs achieve $\pm 1.5\%$ output accuracy over load, line, and temperature range. Overvoltage and undervoltage for each output are monitored and their statuses are communicated through $\overline{\text{RESET}}$ and I²C.

The device features temperature monitoring with external NTC. The IC accurately measures PCB temperature and flags the temperature warning through $\overline{\text{RESET}}$.

The device features a 2.1MHz fixed-frequency PWM mode for better noise immunity and load transient response. The 2.1MHz frequency operation allows for the use of all ceramic capacitors and minimizes external components. The programmable spread-spectrum frequency modulation minimizes radiated electromagnetic emissions.

The I²C programmable output voltages and sequencing increases flexibility for different image sensors and configurations. Other features include soft-start, overcurrent, and overtemperature protections.

APPLICATIONS

- Surround-View Cameras
- Rear-View Cameras
- Side-View Cameras
- Forward-Looking Cameras

Product Categories

[Power Management](#)

| [Multitopology DC/DC](#)

Complete documentation is available upon completion of a Non-Disclosure Agreement (NDA). To request an NDA, [click here](#).

Product Lifecycle [Recommended for New Designs](#)

This product has been released to the market. The data sheet contains all final specifications and operating conditions. For new designs, ADI recommends utilization of these products.

Evaluation Kits (1)

MAX25252EVKIT

The MAX25252 evaluation kit (EV kit) provides a proven design to evaluate the MAX25252 five-output ASIL B PMIC. The EV kit can test each of the outputs to full load. I²C communication is used to configure the MAX25252 and monitor the IC status. A PC-to-I²C interface (such as the MAX32625PICO, which is mounted onto the EV kit) and software for reading and writing to I²C registers (such as the MAX25252EVKIT software) simplifies testing.

