

General Description

The AOZ98252 is a high-performance digital, low quiescent current, multiphase buck controller which provides two output power rails in a M+N = 8 phase configuration and is designed to power AMD SVI3 processors, ASICs, SOCs, and FPGAs. Output VR1 can be configured up to 8 phases and output VR2 can be configured between 0 and 4 phases.

The AOZ98252 offers a novel AOS Advanced Transient Modulator (A²TM). It combines an advanced variable frequency hysteretic peak current mode control with a proprietary phase current sensing scheme for fast transient response and low system cost. The control loop enhances light-load efficiency by seamlessly entering the DCM mode of operation.

The AOZ98252 is compliant with the AMD SVI3 2.0 specification, and is equipped with an SMBus digital interface. This enables register programming, parameter tuning, and configuration to minimize external components for smaller PCB footprint and eliminate the need for manual solder rework on the system board.

The AOZ98252 features very low power consumption while still enabling digital interface control. This unique proprietary architecture enables low quiescent power consumption in all power states, as defined by AMD's SVI3 specification. It also supports Pulse Skipping for light load and programmable Dynamic Phase Management (DPM) to provide the best efficiency over all load conditions, without compromising load transient response.

The AOZ98252 assures fast and comprehensive protection against under/over output voltage, load overcurrent, and over temperature conditions. AOZ98252 also offers real time telemetry information reporting via SMBus and SVI3 for V_{IN}, V_{OUT}, temperature, output current, input system power P_{SYS} or input current I_{SYS}, and power state.

The AOZ98252 is available in a QFN-52 lead, 6x6mm package and can be purchased in Tape and Reel.

Device Summary

Order Code	Model ID	Package	Packing
AOZ98252QI	03h	QFN-52 6x6	Tape and Reel

Features

- SVI3 compliant High Speed Interface
- Two output rails: M+N = 8 phases
- Digital controller with SMBus programmability and world class low power consumption
- Output voltage range: 0.25V to 2.8V
- Differential remote sense; 0.5% V_{out} accuracy
- Low quiescent current in PSI6 mode
- PSI6_L pins to disable DrMOS in PSI6 mode
- Supports multi-sourced industry standard DrMOS or SPS power stages
- Proprietary high performance AOS Advanced Transient Modulator (A²TM) control scheme:
 - Variable frequency hysteretic peak current mode control gives fast transient response
 - Dynamic phase current balance
 - Excellent load-line control and phase current sensing
 - Seamless CCM to DCM control to maximize efficiency
- Programmable Output Voltage Positioning
- System Input Power Monitoring (P_{SYS} and I_{SYS})
- 200kHz to 1MHz programmable switching frequency
- Output Voltage Positioning
- Output Over Current, Over Temperature, Output Over Voltage and Under Voltage protection

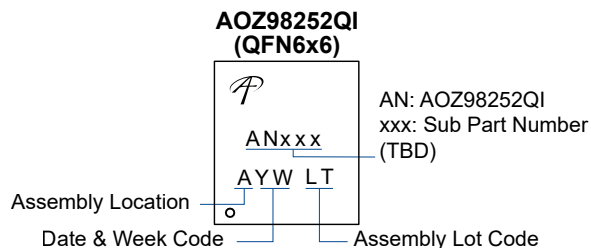
Applications

- Notebook and desktop computers
- Memory and graphics cards
- Video game console



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Part Marking



Sub PN Marking	SKU	Project Description	Full PN	Full Marking in Label
001	B3	Not Programmed	AOZ98252QI-001	AOZ98252QI-001

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- A critical component in any component of a life support,