

General Description

The AOZ2151PQI-05 is a high-efficiency, easy-to-use DC/DC synchronous buck regulator that operates up to 28V. The device is capable of supplying 4A of continuous output current with an output voltage adjustable down to 0.8V $\pm 1\%$.

The AOZ2151PQI-05 integrates an internal linear regulator to generate 5.3V V_{CC} from input. If input voltage is lower than 5.3V, the linear regulator operates at low drop output mode, which allows the V_{CC} voltage is equal to input voltage minus the drop-output voltage of the internal linear regulator.

A proprietary constant on-time PWM control with input feed-forward results in ultra-fast transient response while maintaining relatively constant switching frequency over the entire input voltage range.

The device features multiple protection functions such as V_{CC} under-voltage lockout, cycle-by-cycle current limit, output over-voltage protection, short-circuit protection, and thermal shutdown.

The AOZ2151PQI-05 is available in a 3mm x 3mm QFN-18L package and is rated over a -40°C to $+85^{\circ}\text{C}$ ambient temperature range.

Features

- Wide input voltage range
 - 14V to 28V
- 4A continuous output current
- Output voltage adjustable down to 0.8V ($\pm 1.0\%$)
- Low $R_{DS(ON)}$ internal NFETs
 - 28m Ω high-side
 - 28m Ω low-side
- Constant On-Time with input feed-forward
- Ceramic capacitor stable
- Adjustable soft start
- Selectable PFM light load operation
- Integrated bootstrap diode
- Cycle-by-cycle current limit
- Short-circuit protection
- Thermal shutdown
- Thermally enhanced 3mm x 3mm QFN-18L package

Applications

- Compact desktop PCs
- Graphics cards
- Set-top boxes
- LCD TVs
- Cable modems
- Point-of-load DC/DC converters
- Telecom/Networking/Datacom equipment



Typical Application



