

1.2MHz, 2A Synchronous Step-Down Converter

❖ GENERAL DESCRIPTION

The AX3504/A is a 1.2MHz constant frequency current mode PWM step-down converter. It is ideal for portable equipment requiring very high current up to 2A from single-cell Lithium-ion batteries while still achieving over 90% efficiency during peak load conditions. The AX3504/A also can run at 100% duty cycle for low dropout operation, extending battery life in portable systems while light load operation provides very low output ripple for noise sensitive applications. The AX3504/A can supply up to 2A output load current from a 2.5V to 5.5V input voltage and the output voltage can be regulated as low as 0.6V. The high switching frequency minimizes the size of external components while keeping switching losses low. The internal slope compensation setting allows the device to operate with smaller inductor values to optimize size and provide efficient operation. The AX3504/A is available in adjustable (0.6V to VIN) output voltage. The device is available in SOP8 Pb-free and TDFN-10L packages.

❖ FEATURES

- 2.5V to 5.5V Input Voltage Range
- Output Voltages from 0.6V to VIN
- High Efficiency: Up to 95%
- 1.2MHz Constant Frequency Operation
- 2A Output Current
- No Schottky Diode Required
- Low $R_{DS(ON)}$ Internal Switches: 0.15Ω
- Current Mode Operation for Excellent Line and Load Transient Response
- Current limit, Enable function
- Short Circuit Protect (SCP)
- Build-in Soft Start function
- $\leq 1\mu A$ Shutdown Current
- SOP8 Pb-Free and TDFN-10L packages