

Dual Channel, 1.5MHz, 1A, Synchronous **Step-Down Converter**

❖ GENERAL DESCRIPTION

The AX3505 is a dual channel, high efficiency monolithic synchronous buck regulator using a 1.5MHz constant frequency, current mode architecture. The two converters are available in an adjustable version. Supply current with no load is 500 μ A and drops to <1 μ A in shutdown. The 2.5V to 5.5V input voltage range makes the AX3505 ideally suited for single Li-Ion battery-powered applications. 100% duty cycle provides low dropout operation; switching frequency is internally set at 1.5MHz, allowing the use of small surface mount inductors and capacitors. The internal synchronous switch increases efficiency and eliminates the need for an external Schottky diode. Low output voltages are easily supported with the 0.6V feedback reference voltage. The AX3505 can supply 800mA of load current at $V_{IN}=3V$ by each channel. The AX3505 is available in SOP8-EP package which features small size as SOP-8 with an Exposed Pad to reduce the junction-to-case resistance.

❖ FEATURES

- Dual adjustable outputs
- 2.5V to 5.5V Input Voltage Range
- Low Quiescent Current: 600 μ A
- $\leq 1\mu$ A Shutdown Current
- High Efficiency: Up to 95% by each channel
- 1.5MHz Constant Frequency Operation by each channel
- 1A Output Current at $V_{IN}=3V$ by each channel
- No Schottky Diode Required
- Low Dropout Operation: 100% Duty Cycle
- 0.6V Reference Allows Low Output Voltages
- Current Mode Operation for Excellent Line and Load Transient Response
- Current limit, Enable function and Short Circuit Protect (SCP)
- SOP8-EP Pb-Free package