

# Thermal Sensing IC

Rohm Electronics has introduced the BU9817-FV four-channel thermal sensing IC that, in combination with external thermistors, provides an ideal solution for thermal management and over-voltage monitoring functions for portable systems. Connection to external thermistors produces an effective thermal sensing circuit in which a host system is able to set function parameters and obtain data via the I<sup>2</sup>C bus. Up to four devices can be monitored and comparison voltages can be set separately for each device by taking advantage of programmable detection level and operating mode settings.

The BU9817FV incorporates wide temperature range, low power A/D converter with on-board reference and two-wire I<sup>2</sup>C bus interface, simplifying thermal sensing circuitry by minimizing the need for external components normally required to manage multiple temperature sensors. It can be used to turn on a secondary fan or shut down components such as the CPU, digital signal processor, graphics processor, and motor driver for a hard or floppy drive when they exceed a temperature threshold. A self-monitoring mode provides automatic alerts when temperatures exceed a pre-programmed threshold, while on-board over-voltage protection eliminates the possibility of component and circuit damage from power surges and voltage spikes. The host system can set its functional parameters and retrieve collected temperature and voltage information through the I<sup>2</sup>C bus interface.

The BU9817FV integrates a 4-channel, 8-bit A-to-D converter, I<sup>2</sup>C serial bus interface and overvoltage detector into a single, miniature SMT device that operates at temperatures from -15°C to 75°C. The BU9817FV incorporates two special power saving modes, making it ideally suited for low-power and battery driven applications. The device operates from 3 V to 5.5 V supplies with a current consumption of 0.75 mA or 1 uA when in shutdown mode. Supplied in a miniature SSOP 14-pin plastic package, the BU9817FV has dimensions of 5.0 × 4.4 × 1.2 mm.

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