

Low-Cost, 2.7V to 5.5V Temperature Switches in a SOT23

General Description

The MAX6514/MAX6515 low-cost, fully integrated temperature switches assert a logic signal when their die temperature crosses a factory-programmed threshold. Operating from a 2.7V to 5.5V supply, these devices feature a fixed voltage reference, an analog temperature sensor, and a comparator. They are available with factory-trimmed temperature trip thresholds from -45°C to +15°C and +35°C to +115°C in 10°C increments, and are accurate to $\pm 1^\circ\text{C}$ (typ). These devices require no external components and typically consume 22 μA of supply current. Hysteresis is pin selectable at 2°C or 10°C.

The MAX6514/MAX6515 are offered with hot-temperature thresholds (+35°C to +115°C), asserting when the temperature is above the threshold or with cold-temperature thresholds (-45°C to +15°C), asserting when the temperature is below the threshold. The MAX6514/MAX6515 can be used over a -35°C to +125°C range with a supply voltage of 2.7V to 5.5V. For applications sensing temperature down to -45°C, a supply voltage above 4.5V is required.

The MAX6514 has an active-high, push-pull output. The MAX6515 has an active-low, open-drain output. These devices are available in a space-saving 5-pin SOT23 package and operate over the -55°C to +125°C temperature range.

Applications

- Over/Undertemperature Protection
- Fan Control
- Test Equipment
- Temperature Control
- Temperature Alarms
- Notebook, Desktop PCs
- RAID
- Servers

Pin Configurations and Functional Diagram appear at end of data sheet.

Features

- ◆ High-Accuracy $\pm 1.5^\circ\text{C}$ (max) over -15°C to +65°C Temperature Range
- ◆ Low-Power Consumption: 22 μA Typical Current
- ◆ Factory-Programmed Thresholds from -45°C to +115°C in 10°C Increments
- ◆ Open-Drain or Push-Pull Outputs
- ◆ Pin-Selectable 2°C or 10°C Hysteresis

Ordering Information

PART	TEMP RANGE	PIN-PACKAGE
MAX6514UK_ _ _ +T	-55°C to +125°C	5 SOT23
MAX6515UK_ _ _ +T	-55°C to +125°C	5 SOT23

Note: These parts are offered in 16 standard temperature versions with a minimum order of 2500 pieces. To complete the suffix information, add P or N for positive or negative trip temperature, and select an available trip point in degrees centigrade. For example, the MAX6514UKP065+T describes a MAX6514 in a 5-pin SOT23 package with a +65°C threshold in tape and reel (2.5k minimum order). Contact the factory for pricing and availability.

+Denotes a lead(Pb)-free/RoHS-compliant package.
T = Tape and reel.

Typical Operating Circuit

