

1°C Temperature Sensor with Beta Compensation and Selectable Address

PRODUCT FEATURES

Data Brief

General Description

The EMC1412 is a high accuracy, low cost, System Management Bus (SMBus) temperature sensor. Advanced features such as Resistance Error Correction (REC), Beta Compensation (to support CPU diodes requiring the BJT/transistor model including 45nm, 65nm and 90nm processors) and automatic diode type detection combine to provide a robust solution for complex environmental monitoring applications.

Each device provides $\pm 1^\circ$ accuracy for external diode temperatures and $\pm 2^\circ\text{C}$ accuracy for the internal diode temperature. The EMC1412 monitors two temperature channels (one external and one internal).

The EMC1412-A allows for multiple SMBus addresses using the pull-up resistor on the $\overline{\text{THERM}}$ pin.

Applications

- Notebook Computers
- Desktop Computers
- Industrial
- Embedded applications

Features

- Programmable SMBus Address
- Support for diodes requiring the BJT/transistor model
 - Supports 45nm, 65nm, and 90nm CPU thermal diodes
- Pin compatible with ADM1032, MAX6649, and LM99
- Automatically determines external diode type and optimal settings
- Resistance Error Correction
- External Temperature Monitors
 - $\pm 0.25^\circ\text{C}$ Typ Accuracy ($60^\circ\text{C} < T_{\text{DIODE}} < 100^\circ\text{C}$)
 - 0.125°C Resolution
 - Supports discrete diodes
- Internal Temperature Monitor
 - $\pm 0.25^\circ\text{C}$ Typ Accuracy
- 3.3V Supply Voltage
- Programmable temperature limits for $\overline{\text{ALERT}}$ and $\overline{\text{THERM}}$
- Available in Small 8-pin MSOP Lead-free RoHS Compliant Package

ORDER NUMBER(S):**EMC1412-1-ACZL-TR FOR 8 PIN, MSOP LEAD-FREE ROHS COMPLIANT PACKAGE****EMC1412-2-ACZL-TR FOR 8 PIN, MSOP LEAD-FREE ROHS COMPLIANT PACKAGE****EMC1412-A-ACZL-TR FOR 8 PIN, MSOP LEAD-FREE ROHS COMPLIANT PACKAGE****REEL SIZE IS 4,000 PIECES**

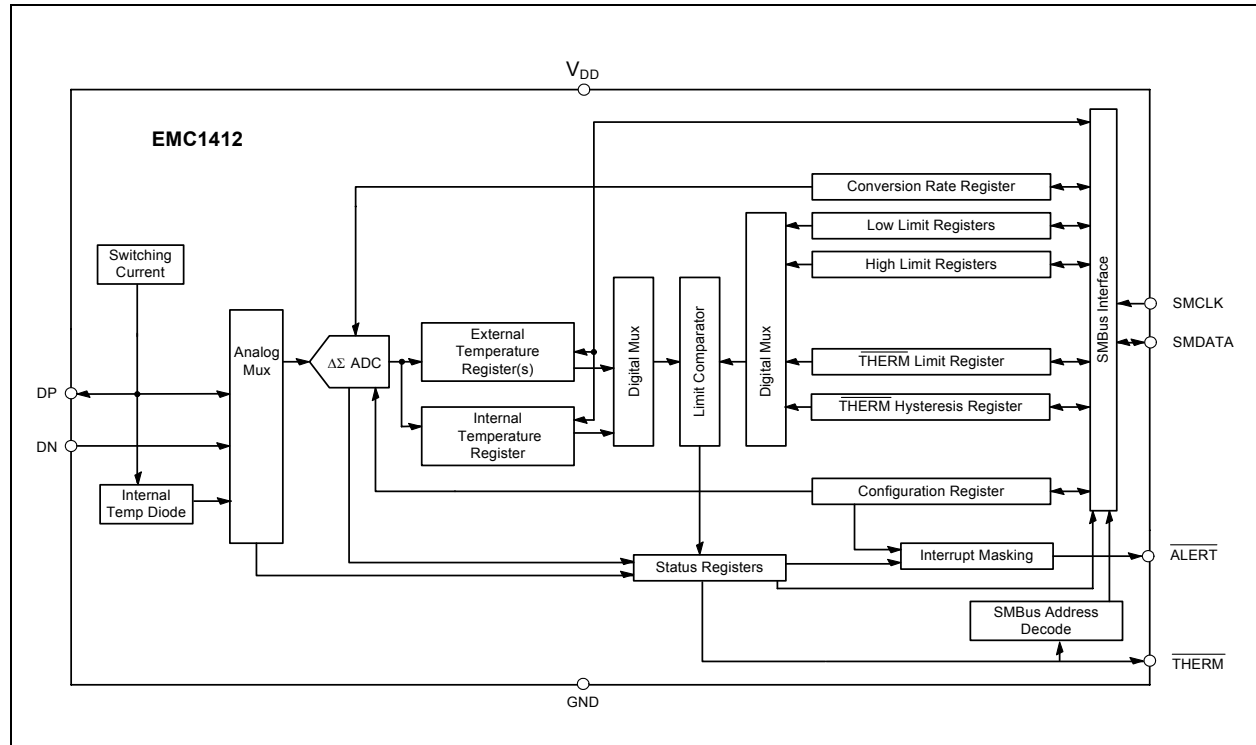
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Block Diagram



Package Outline

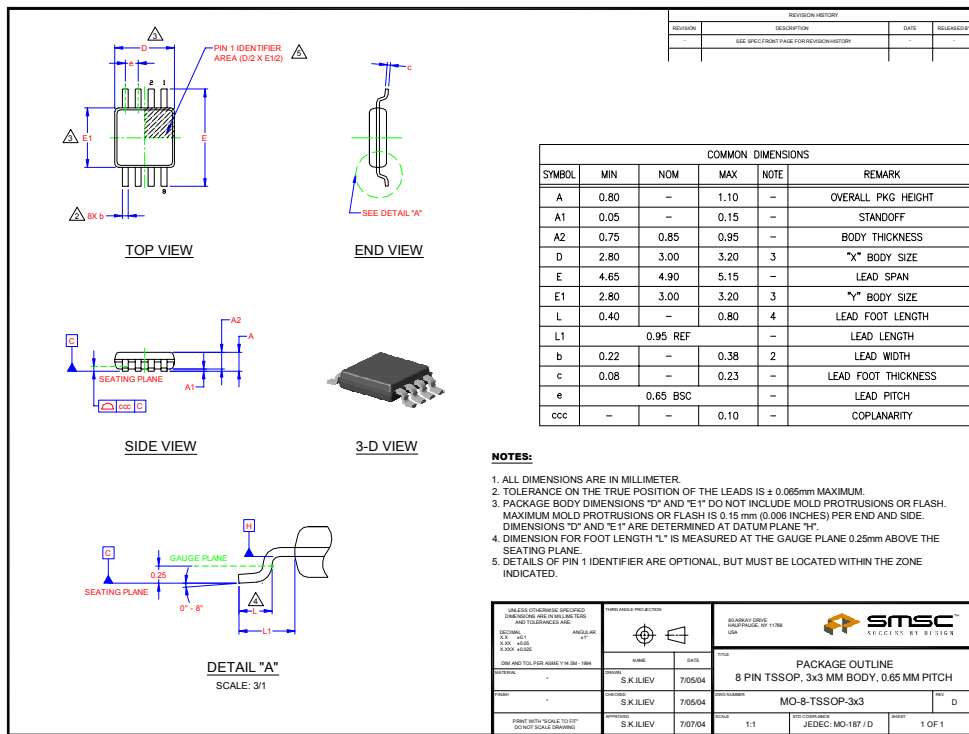


Figure 1 8 Pin MSOP / TSSOP Package