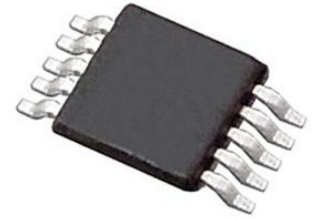


1ΣC Temperature Sensor with Hardware Thermal Shutdown, Board Mount Temperature Sensors TRIPLE TEMP SNSR

Manufacturers	<a href="#">Microchip Technology, Inc</a>
Package/Case	MSOP-10
Product Type	Temperature Sensors
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for EMC1423-1-AIZL-TR or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The EMC1423 and EMC1424 are high accuracy, low cost, System Management Bus (SMBus) temperature sensors. 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.

Additionally, the EMC1423 and EMC1424 provide a hardware programmable system shutdown feature that is programmed at part power-up via two pull-up resistor values and that cannot be masked or corrupted through the SMBus.

Each device provides  $\pm 1^\circ$  accuracy for external diode temperatures and  $\pm 2^\circ\text{C}$  accuracy for the internal diode temperature. The EMC1423 monitors three temperature channels (two external and one internal). The EMC1424 monitors four temperature channels (three external and one internal).

Resistance Error Correction automatically eliminates the temperature error caused by series resistance allowing greater flexibility in routing thermal diodes. Beta Compensation eliminates temperature errors caused by low, variable beta transistors common in today's fine geometry processors. The automatic beta detection feature monitors each external diode/transistor and determines the optimum sensor settings for accurate temperature measurements regardless of processor technology. This frees the user from providing unique sensor configurations for each temperature monitoring application. These advanced features plus  $\pm 1^\circ\text{C}$  measurement accuracy provide a low-cost, highly flexible and accurate solution for critical temperature monitoring applications.

## Features

Features

Hardware Thermal Shutdown

triggers dedicated SYS\_SHDN pin

hardware configured range 77°C to 112°C in 1°C steps

cannot be disabled or modified by software

Support for diodes requiring the BJT/transistor model

Designed to support 45nm processors

Support for 90nm and 65nm CPU diodes

Automatically determines external diode type and optimal settings

Resistance Error Correction

External Temperature Monitors

0.125°C resolution

Supports up to 2.2nF diode filter capacitor

Anti-parallel diodes for extra diode support

Internal Temperature Monitor

3.3V Supply Voltage

Programmable temperature limits for ALERT#

Small 10-pin MSOP RoHS Compliant package

## Application

Notebook Computers

Desktop Computers

Industrial

Embedded applications

## Related Products



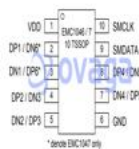
### [EMC1412-2-ACZL-TR](#)

Microchip Technology, Inc  
MSOP-8



### [EMC1424-1-AIZL-TR](#)

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MSOP-10



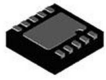
### [EMC1047-2-AIZL-TR](#)

Microchip Technology, Inc  
MSOP-10



### [EMC1422-1-ACZL-TR](#)

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MSOP-8



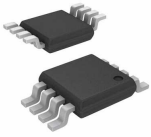
[EMC1413-A-AIA-TR](#)

Microchip Technology, Inc  
VDFN-10



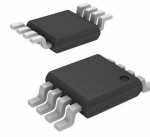
[EMC1413-A-AIZL-TR](#)

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