



Integrated Device Technology

Temperature Sensors

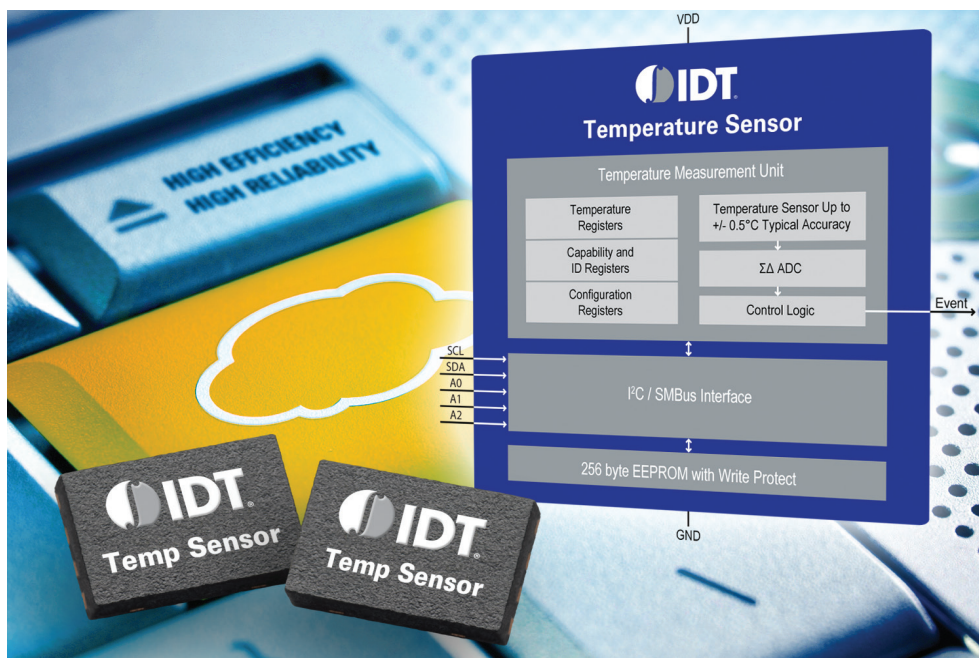
POWER MANAGEMENT | ANALOG & RF | INTERFACE & CONNECTIVITY | CLOCKS & TIMING | MEMORY & LOGIC | TOUCH & USER INTERFACE | VIDEO & DISPLAY | AUDIO

FEATURES AND BENEFITS

- Targeted for DDR3 DIMM applications
- Meets Gen 2 JEDEC JC42.4 requirements
- Accuracy up to $\pm 0.5^{\circ}\text{C}$ typical (over industrial temperature range)
- Resolution up to 0.0625°C provides ability to track even small temperature changes. Ideal for applications where temperature changes rapidly.
- SMBus timeout of 25ms (min), 35ms (max) meets latest Intel® timeout requirements
- Timeout supported in all modes – active, standby, shutdown
- Input hysteresis ($>150\text{mV}$) and input glitch filtering (up to 50ns) eliminates clock and data input signal noise and provides robust, hang-up free, SMBus communication at all speeds.
- Conversion times below 100ms at any resolution for fast temperature tracking
- Clock frequency up to 400 KHz allows test time reduction
- 256 byte Serial EEPROM (TSE2002 only)
- EEPROM write protection (TSE2002 only)
- EEPROM timeout (TSE2002 only) compatible with Intel bus specifications
- Single Power Supply:
 - 2.3V to 3.6V (TS3000GB2 & TSE2002GB2)
 - 3.0V to 3.6V (TSE2002B3)
- No power sequencing restrictions
- Selectable 0° , 1.5°C , 3°C , 6°C hysteresis eliminates spurious temperature alarm events on the boundary of THIGH, TLOW, and TCRIT temperature thresholds



Learn more about IDT Temperature Sensors:
www.idt.com/go/TempSensors



The family of digital temperature sensor products from Integrated Device Technology, with accuracy up to $\pm 0.5^{\circ}\text{C}$ typical, is designed for applications demanding the highest level of temperature readout. The TS3000 devices are stand-alone local temperature sensors, while the TSE2002 also includes an integrated 256 byte EEPROM for storage of vendor information and system configuration.

The sensors come with several user-programmable registers to provide maximum flexibility for temperature sensing applications. These registers allow specifying critical, upper and lower temperature limits as well as hysteresis settings. The sensors use an industry standard 2-wire, I^2C / SMBus serial interface and allow up to eight devices to be controlled on the bus. The sensors are fully compliant with JEDEC JC42.4 component specification.

Orderable Part Numbers

TS3000GB2 Local Temperature Sensor

TS3000GB2A1NCG	TDFN-8, Bulk
TS3000GB2A1NCG8	TDFN-8, Tape & Reel

TSE2002GB2 Temperature Sensor with Integrated EEPROM

TSE2002GB2A1NCG	TDFN-8, Bulk
TSE2002GB2A1NCG8	TDFN-8, Tape & Reel
TSE2002GB2A1NRG	DFN-8, Bulk
TSE2002GB2A1NRG8	DFN

TSE2002B3 Temperature Sensor with Integrated EEPROM

TSE2002B3CNCG	TDFN-8, Bulk
TSE2002B3CNCG8	TDFN-8, Tape & Reel

DISCLAIMER Integrated Device Technology, Inc. (IDT) and its subsidiaries reserve the right to modify the products and/or specifications described herein at any time and at IDT's sole discretion. All information in this document, including descriptions of product features and performance, is subject to change without notice. Performance specifications and the operating parameters of the described products are determined in the independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of IDT's products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of IDT or any third parties. IDT's products are not intended for use in life support systems or similar devices where the failure or malfunction of an IDT product can be reasonably expected to significantly affect the health or safety of users. Anyone using an IDT product in such a manner does so at their own risk, absent an express, written agreement by IDT.

Integrated Device Technology, IDT and the IDT logo are registered trademarks of IDT. Other trademarks and service marks used herein, including protected names, logos and designs, are the property of IDT or their respective third party owners.
© Copyright 2011. All rights reserved.

OV_TEMPSENSE_REVA0611