



## Atmel AT30TS750 Family

The world's most versatile digital temperature sensing solutions



The Atmel® AT30TS750 digital temperature sensor family is a group of five high-precision devices based on the industry-standard xx75 functionality. The device family offers designers a choice of available integrated nonvolatile registers and serial EEPROM for optimal flexibility and increased system performance.

*The world's most versatile, real-time, digital temperature sensing solutions, featuring industry-standard and feature-rich, integrated, nonvolatile memory products to address almost every application.*

The AT30TS750 digital temperature sensor family is a complete, fully factory calibrated, real-time temperature monitoring solution with  $\pm 0.5^{\circ}\text{C}$  typical accuracy over an operating temperature range of  $0^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . The devices output digitized temperature data via a standard I<sup>2</sup>C/SMBus-compatible serial interface, eliminating the need for any external A/D converters and data post processing. The AT30TS750 family offers user-selectable temperature resolution from 9 to 12 bits, user-programmable high and low temperature limits, power-saving shutdown and one-shot modes, and I<sup>2</sup>C high-speed mode compatibility. The AT30TS750 device contains nonvolatile registers to allow user configuration settings to be permanently retained across power cycles for improved system reliability. In addition, the AT30TSE752 / 4 / 8 devices offer 2-, 4-, or 8-Kbits, respectively, of integrated serial EEPROM for storing critical customer product data, and are also drop-in replacements for standalone 2-, 4-, or 8-Kbit I<sup>2</sup>C serial EEPROMs.

The AT30TS750 family provides an ideal solution for any consumer, industrial, computer, or medical application requiring a high level of system performance and product safety and reliability.

### Key Features and Benefits

- Pin and software compatible with industry standard LM75-type devices
- Up to 12-bit resolution A/D converter, user-configurable (temperature-to-digital converter)
- Highly accurate temperature sensing
  - $\pm 1^{\circ}\text{C}$  (max.) over the  $0^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  temperature range
  - $\pm 2^{\circ}\text{C}$  (max.) over the  $-20^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$  temperature range
  - $\pm 3^{\circ}\text{C}$  (max.) over the  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  temperature range
- Integrated nonvolatile registers
- Integrated serial EEPROM data memory (2-, 4-, or 8-Kbits)
- I<sup>2</sup>C/SMBus™-compatible serial interface
- I<sup>2</sup>C high speed mode compatible (3.4MHz maximum clock frequency)
- SMBus time-out supported
- Programmable high and low temperature limits
- Power-saving shutdown and one-shot modes
- Alert output pin to indicate temperature alarms
- Available in 8-lead MSOP, 8-lead SOIC, and 8-pad UDFN plastic packages



# Atmel AT30TS750 Family

The world's most versatile digital temperature sensing solutions

## Application Examples

- **Industrial** – Industrial controls, smart meters, HVAC, lighting ballast, fire alarms, test equipment, and medical devices
- **Consumer** – Li-ion batteries, set-top boxes, audio/video equipment, game consoles, white goods, and thermostats
- **Communications** – Telecom equipment, smartphones, gateways, routers, headsets, call servers, and power supplies
- **Computers** – Desktops, laptops, netbooks, tablets, servers, and HDDs

## Product Availability and Ordering Information

Atmel ordering code	Voltage range	Interface	Nonvolatile registers	Integrated EEPROM	Package	Availability
AT30TS75-XM8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	No	No	MSOP 8	Now
AT30TS75-SS8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	No	No	SOIC 8	Now
AT30TS75-MA8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	No	No	UDFN 8	Now
AT30TS750-XM8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	No	MSOP 8	Now
AT30TS750-SS8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	No	SOIC 8	Now
AT30TS750-MA8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	No	UDFN 8	Now
AT30TSE752-XM8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	2-Kbits	MSOP 8	Now
AT30TSE752-SS8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	2-Kbits	SOIC 8	Now
AT30TSE752-MA8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	2-Kbits	UDFN 8	Now
AT30TSE754-XM8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	4-Kbits	MSOP 8	Now
AT30TSE754-SS8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	4-Kbits	SOIC 8	Now
AT30TSE754-MA8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	4-Kbits	UDFN 8	Now
AT30TSE758-XM8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	8-Kbits	MSOP 8	Now
AT30TSE758-SS8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	8-Kbits	SOIC 8	Now
AT30TSE758-MA8-T	2.7 – 5.5V	I <sup>2</sup> C/SMBus	Yes	8-Kbits	UDFN 8	Now



**Atmel Corporation** 1600 Technology Drive, San Jose, CA 95110 USA **T:** (+1)(408) 441-0311 **F:** (+1)(408) 487-2600 | **www.atmel.com**

© 2012 Atmel Corporation. All rights reserved. Rev.: 8747C-DTS-E-US-09/12

Atmel®, Atmel logo and combinations thereof, and others are registered trademarks or trademarks of Atmel Corporation or its subsidiaries. Other terms and product names may be trademarks of others.

Disclaimer: The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products. EXCEPT AS SET FORTH IN THE ATMEL TERMS AND CONDITIONS OF SALES LOCATED ON THE ATMEL WEBSITE, ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS AND PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and products descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Unless specifically provided otherwise, Atmel products are not suitable for, and shall not be used in, automotive applications. Atmel products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Atmel:](#)

[AT30TS750-MA8-T](#) [AT30TS750-SS8-B](#) [AT30TS750-SS8-T](#) [AT30TS750-XM8-B](#) [AT30TS750-XM8-T](#)