SENSYLINK Microelectronics

(CT7525)
Digital Temperature Sensor

CT7525 is a Digital Temperature Sensor with ±1.0°C Accuracy, CSP-4 package Compatible with SMBus, I²C and 2-wire Interface. It is ideally used in space constrained application, like Camera Module, SSD and Portable Devices etc.

±1.0°C Digital Temperature Sensor with CSP-4 Package

Description

CT7525 is a digital temperature sensor with ± 1.0°C accuracy. Temperature data can be read out directly via digital interface (compatible with SMBus, I²C or 2-wire) by MCU, Bluetooth Chip or SoC chip. CT7525 supports I²C communication with speed up to 3.0MHz.

Each chip is specially calibrated for ±1.0 °C(Max.) accuracy over 0°C to 80°C range in factory before shipment to customers. There is no need for re-calibration anymore for ±1.0°C accuracy.

It includes a high precision band-gap circuit, a 12-bit analog to digital converter that can offer 0.0625°C resolution, a calibration unit with non-volatile memory, and a digital interface block.

Available Package: CSP-4.

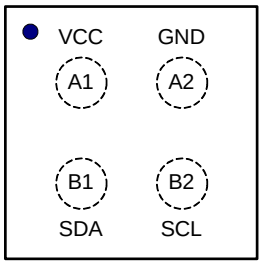
Features

- Operation Voltage: 1.4V to 5.5V
- Average Quiescent Current: 3uA (Typ.) at 1.0 Con/s, 3.3V
- Standby Current: 30nA (Typ.)
- Temperature Accuracy without calibration:
  Maximum: ±1.0°C from 0°C to 80°C
  Maximum: ±1.5°C from -40°C to 150°C
- 12 bit ADC for 0.0625°C resolution
- Compatible with SMBus, 2-wire and I²C interface
- Programmable Over/Under Temperature
- 8 different slave address available with different suffix
- Temperature Range: -50°C to 150°C

Applications

- Camera Module
- SSD
- Portable Devices

PIN Configurations (Top View)



CSP-4 (Package Code J4)

Typical Application

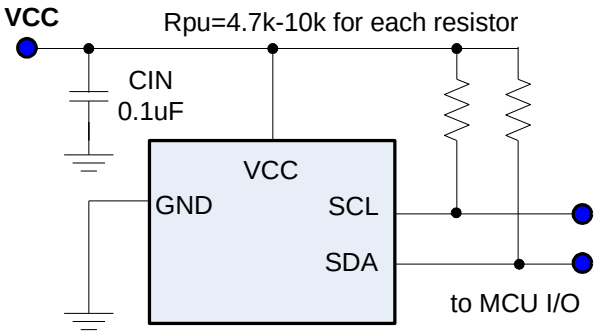


Figure 1. Typical Application of CT7525

Pin Description

PIN No.	PIN Name	Description
A1	VCC	Power supply input pin, using 0.1uF low ESR ceramic capacitor to ground
A2	GND	Ground pin.
B1	SDA	Digital interface data input or output pin, need a pull-up resistor to VCC.
B2	SCL	Digital interface clock input pin, need a pull-up resistor to VCC.

Function Block

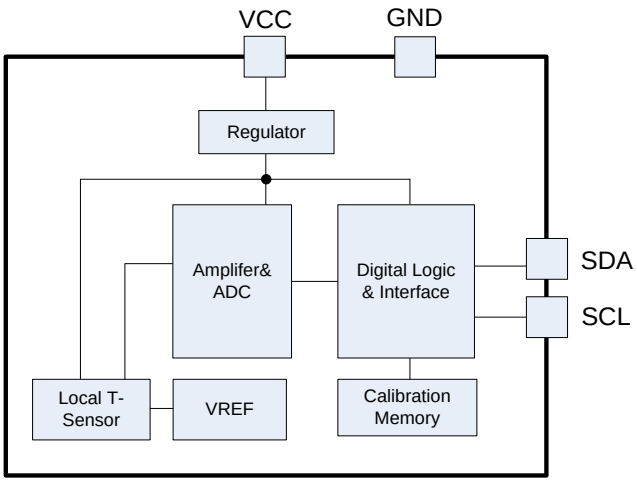
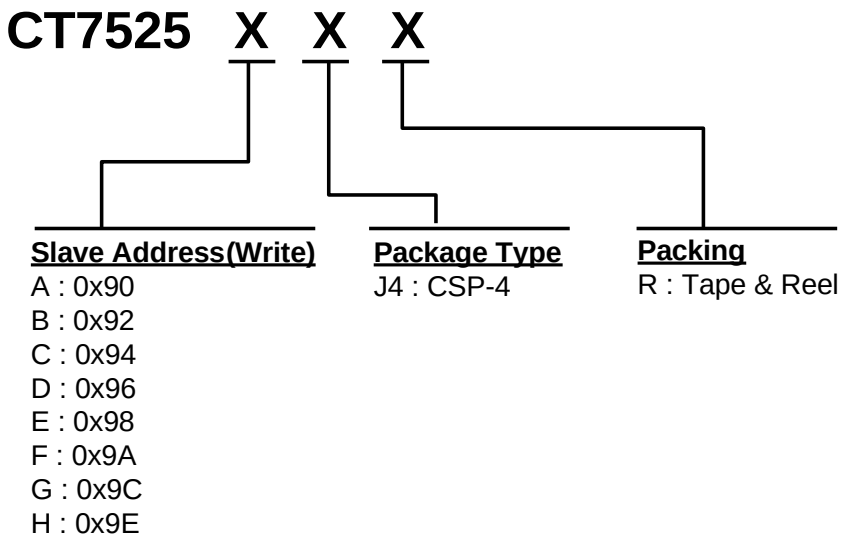


Figure 2. CT7525 function block

Ordering Information (Note1)



Order PN	Slave Address (Write)	Accuracy	Green[1]	Package	Marking ID[2]	Packing	MPQ	Operation Temperature
CT7525AJ4R	0x90	±1.0°C	Halogen free	CSP-4	CF	Tape & Reel	3,000	-50°C~+150°C
CT7525BJ4R	0x92	±1.0°C	Halogen free	CSP-4	CG	Tape & Reel	3,000	-50°C~+150°C
CT7525CJ4R	0x94	±1.0°C	Halogen free	CSP-4	CH	Tape & Reel	3,000	-50°C~+150°C
CT7525DJ4R	0x96	±1.0°C	Halogen free	CSP-4	CJ	Tape & Reel	3,000	-50°C~+150°C
CT7525EJ4R	0x98	±1.0°C	Halogen free	CSP-4	CK	Tape & Reel	3,000	-50°C~+150°C
CT7525FJ4R	0x9A	±1.0°C	Halogen free	CSP-4	CL	Tape & Reel	3,000	-50°C~+150°C
CT7525GJ4R	0x9C	±1.0°C	Halogen free	CSP-4	CM	Tape & Reel	3,000	-50°C~+150°C
CT7525HJ4R	0x9E	±1.0°C	Halogen free	CSP-4	CN	Tape & Reel	3,000	-50°C~+150°C

Note 1

1. Based on ROHS Y2012 spec, Halogen free covers lead free. So most package types Sensylink offers only states halogen free, instead of lead free.

2. Marking ID includes 2 rows of characters. In general, the 1st row of characters are part number, and the 2nd row of characters are date code plus production information.

1) *Generally, date code is represented by 3 numbers. The number stands for year and work week information. e.g. 501stands for the first work week of year 2015;621 stands for the 21st work week of year 2016.*
2) *Right after the date code information, the next 2-3 numbers or letters are specified to stands for supplier or production location information.*
3) *For very small package，there's two characters to stands for part number*

SENSYLINK Microelectronics Inc.

www.sensylink.com

IMPORTANT NOTICE

SENSYLINK Microelectronics Inc. reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein or to discontinue any product or service. Customers should obtain the latest relevant information before placing orders and should verify the latest and complete information. SENSYLINK Microelectronics does not assume any responsibility for use of any product, nor does SENSYLINK Microelectronics any liability arising out of the application or use of this document or any product or circuit described herein. SENSYLINK Microelectronics assumes no liability for applications assistance or the design of Customers' products. Customers are responsible for their products and applications using SENSYLINK Microelectronics components. SENSYLINK Microelectronics does not convey any license under its patent or trademark rights nor the other rights.