SENSYLINK Microelectronics

(CT7113)
Digital Temperature Sensor

CT7113 is a Digital Temperature Sensor with ±1.0°C Accuracy, CSP-4 package Compatible with SMBus, I^2C Interface. It is ideally used in space constrained application, like Camera Module, SSD and Portable Devices etc.

±1.0℃ Digital Temperature Sensor with CSP-4 Package

Description

CT7113 is a digital temperature sensor with ±1.0 ℃ accuracy. Temperature data can be read out directly via digital interface (compatible with SMBus, I²C) by MCU, Bluetooth Chip or SoC chip. CT7113 supports I²C communication with speed up to 3.4MHz.

Each chip is specially calibrated for ±1.0 ℃ (Max.) accuracy over -20 ℃ to 100 ℃ range in factory before shipment to customers. There is no need for re-calibration anymore for ±1.0 ℃ accuracy.

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

Available Package: CSP-4.

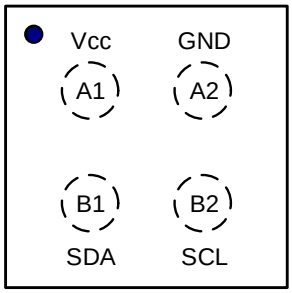
Features

- 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℃ from -20℃ to 100℃
  Maximum:±2.0℃ from -40℃ to 125℃
- 12-bit ADC for 0.0625℃ resolution
- Compatible with SMBus, I²C interface
- Programmable Over/Under Temperature
- 8 different slave address available with different suffix
- Temperature Range: -50℃ to 125℃

Applications

- Camera Module
- SSD
- Portable Devices

PIN Configurations (Top View)



CSP-4 (Package Code J4)

Typical Applications

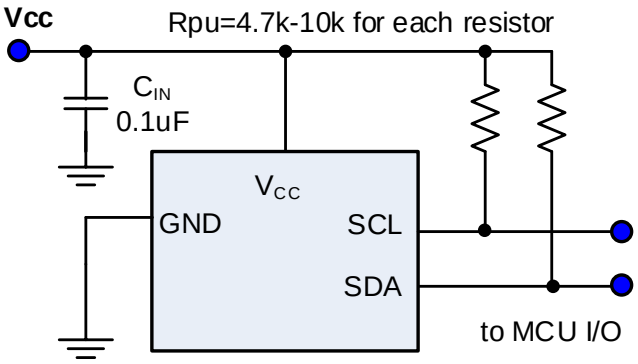


Figure 1. Typical Application of CT7113

Pin Description

PIN No	PIN Name	Description
A1	V_{CC}	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 V_{CC}.
B2	SCL	Digital interface clock input pin, need a pull-up resistor to V_{CC}.

Function Block

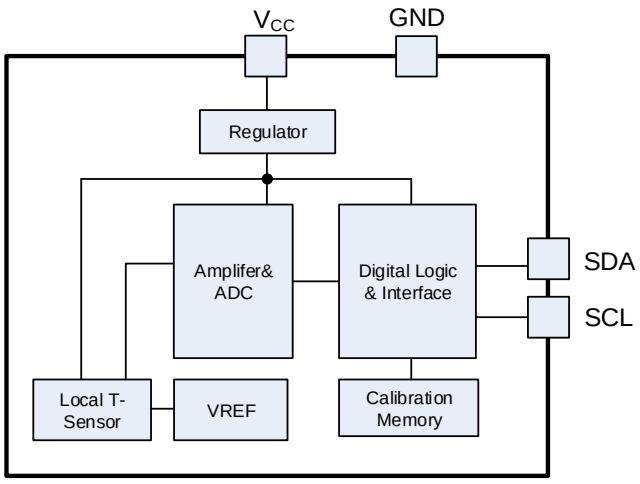
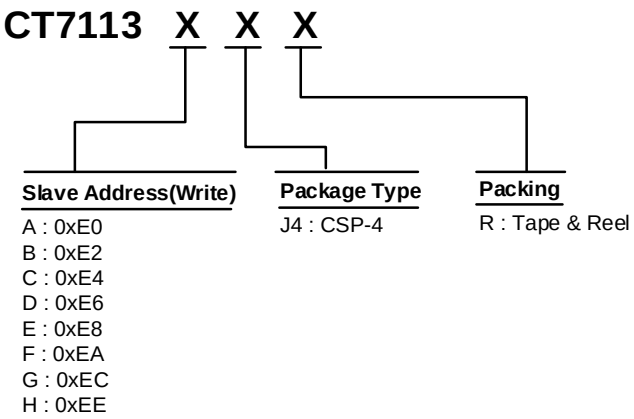


Figure 2. CT7113 function block

Ordering Information



Order PN	Slave Address (Write)	Accuracy	Green1	Package	Marking ID2	Packing	MPQ	Operation Temperature
CT7113AJ4R	0xE0	±1.0 ℃	Halogen free	CSP-4	DP	Tape & Reel	3,000	-50~+125 ℃
CT7113BJ4R	0xE2	±1.0 ℃	Halogen free	CSP-4	DQ	Tape & Reel	3,000	-50~+125 ℃
CT7113CJ4R	0xE4	±1.0 ℃	Halogen free	CSP-4	DR	Tape & Reel	3,000	-50~+125 ℃
CT7113DJ4R	0xE6	±1.0 ℃	Halogen free	CSP-4	DS	Tape & Reel	3,000	-50~+125 ℃
CT7113EJ4R	0xE8	±1.0 ℃	Halogen free	CSP-4	DT	Tape & Reel	3,000	-50~+125 ℃
CT7113FJ4R	0xEA	±1.0 ℃	Halogen free	CSP-4	DU	Tape & Reel	3,000	-50~+125 ℃
CT7113GJ4R	0xEC	±1.0 ℃	Halogen free	CSP-4	DY	Tape & Reel	3,000	-50~+125 ℃
CT7113HJ4R	0xEE	±1.0 ℃	Halogen free	CSP-4	DZ	Tape & Reel	3,000	-50~+125 ℃

Note

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. 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.