

SENSYLINK Microelectronics

(CT7117) Digital Temperature Sensor

CT7117 is a Digital Temperature Sensor with $\pm 0.1^{\circ}\text{C}$ Accuracy, CSP-4 package Compatible with SMBus/ μC Interface. It is ideally used in space constrained application, like Camera Module, SSD and Portable Devices etc.

±0.1°C Digital Temperature Sensor with CSP-4 Package

Description

CT7117 is a digital temperature sensor with ±0.1°C accuracy. Temperature data can be read out directly via digital interface (compatible with SMBus, I²C by MCU, Bluetooth Chip or SoC chip. CT7117 supports I²C communication with speed up to 3.0MHz.

Each chip is specially calibrated for ±0.1°C(Max.) accuracy over 20°C to 50°C range in factory before shipment to customers. There is no need for re-calibration anymore for ±0.1°C accuracy.

It includes a high precision band-gap circuit, a 16-bit analog to digital converter that can offer 0.0078125°C resolution, a calibration unit with non-volatile memory, and a digital interface block.

Available Package: CSP-4.

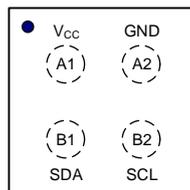
Features

- Operation Voltage: 1.4V to 5.5V
- Average Quiescent Current: 3uA(Typ.) at 1.0Con/s, 3.3V
- Standby Current: 30nA (Typ.)
- Temperature Accuracy without calibration:
Maximum:±0.1°C from 20°C to 50°C
Maximum:±0.3°C from -40°C to 125°C
Maximum:±0.5°C from -50°C to 150°C
- 16 bit ADC for 0.0078125°C resolution
- Compatible with SMBus, I²C interface
- Programmable Over/Under Temperature
- 8 different slave addresses available with different suffix
- Temperature Range: -50°C to 150°C

Applications

- Thermal Camera
- SSD
- Portable Devices

PIN Configurations (Top View)



CSP-4 (Package Code J4)

Typical Application

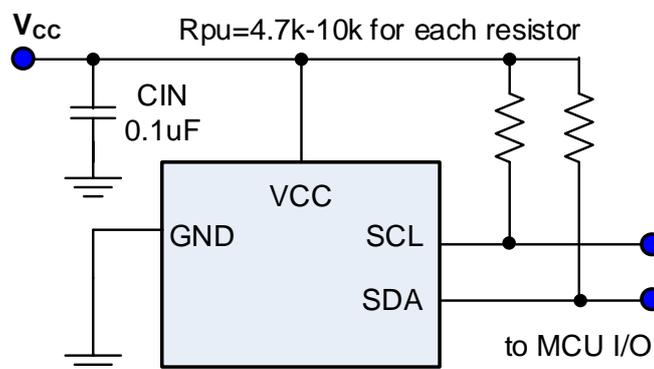


Figure 1. Typical Application of CT7117

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

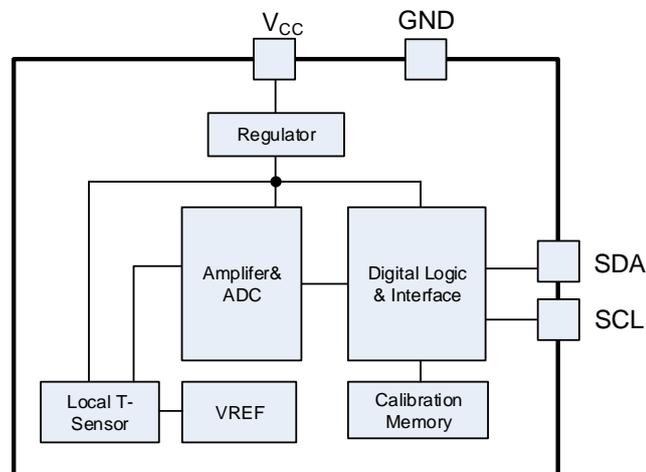
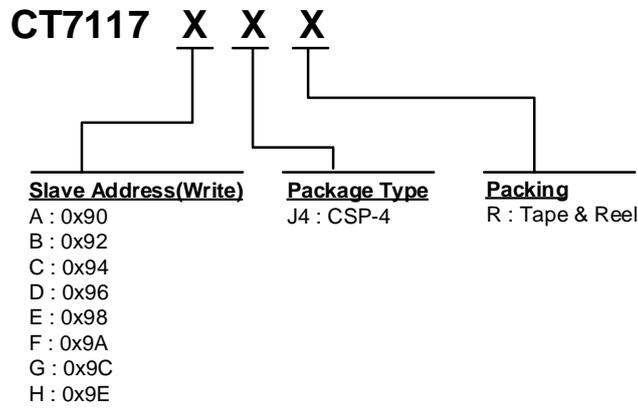


Figure 2. CT7117 function block

±0.1°C Digital Temperature Sensor with CSP-4 Package
Ordering Information (Note1)


Order PN	Slave Address (Write)	Accuracy	Green ¹	Package	Marking ID ²	Packing	MPQ	Operation Temperature
CT7117AJ4R	0x90	±0.1°C	Halogen free	CSP-4	DF	Tape & Reel	3,000	-50°C~+150°C
CT7117BJ4R	0x92	±0.1°C	Halogen free	CSP-4	DG	Tape & Reel	3,000	-50°C~+150°C
CT7117CJ4R	0x94	±0.1°C	Halogen free	CSP-4	DH	Tape & Reel	3,000	-50°C~+150°C
CT7117DJ4R	0x96	±0.1°C	Halogen free	CSP-4	DJ	Tape & Reel	3,000	-50°C~+150°C
CT7117EJ4R	0x98	±0.1°C	Halogen free	CSP-4	DK	Tape & Reel	3,000	-50°C~+150°C
CT7117FJ4R	0x9A	±0.1°C	Halogen free	CSP-4	DL	Tape & Reel	3,000	-50°C~+150°C
CT7117GJ4R	0x9C	±0.1°C	Halogen free	CSP-4	DM	Tape & Reel	3,000	-50°C~+150°C
CT7117HJ4R	0x9E	±0.1°C	Halogen free	CSP-4	DN	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. For very small package, there're two characters to stands for part number



SENSYLINK Microelectronics Inc.

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