

***SENSYLINK Microelectronics Inc.***

***(CT1720)***

***S-Wire Digital Temperature Sensor***

***CT1720 is a Low Cost Digital Temperature Sensor with  $\pm 0.5^{\circ}\text{C}$  Accuracy over  $-30^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  with S-Wire Interface.***

***It is ideally used in General Temperature Monitor, White Appliance and Smoke / Heater Detector etc.***

# ±0.5 °C Accuracy Digital Temperature Sensor with S-Wire Interface

## Description

CT1720 is a low cost digital temperature sensor with ±0.5°C(Max.) accuracy over -30°C to 80°C. Temperature data can be read out directly via S-Wire interface by MCU.

It includes a high precision band-gap circuit, a 14-bit analog to digital converter that can offer 0.03125°C resolution, a calibration unit with non-volatile memory and a digital interface block.

The chip is calibrated for ±0.5 °C(Max.) accuracy in factory before shipment to customers.

Available Package: SOT-23, TO-92S package

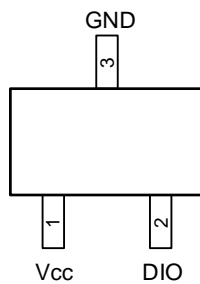
## Features

- Operation Voltage: 1.8V to 5.5V
- Operating Current: 36uA(Typ.) during Temperature Conversion;
- Average Current Consumption: 0.6uA(Typ.) with reading once temperature per second
- Standby Current: 10nA (Typ.), 50nA (Max.<50°C)
- Temperature Conversion time: 33ms(Typ.)
- Temperature Accuracy: ±0.5°C(Max.) from -30°C to 80°C
- 14 bit ADC for 0.03125°C resolution
- S-Wire Digital Interface (single-wire lite version)
- Temperature Range: -50°C to 150°C

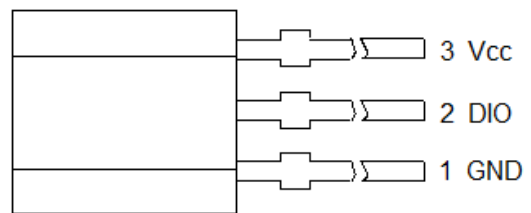
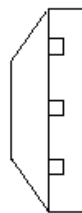
## Applications

- General Temperature Monitor
- White Appliance
- Smoke / Heater Detector

## PIN Configurations (Top View)



SOT-23 (package code K)



TO-92S (package code Z3)

### Typical Application

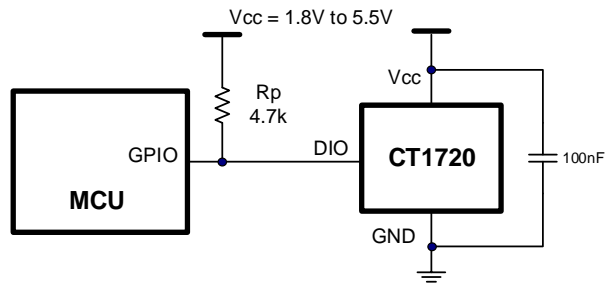


Figure 1. Typical Application of CT1720

### Pin Description

PIN No.		PIN Name	Description
TO-92S	SOT-23		
3	1	Vcc	Power supply input pin, it should connect a 100nF to 1.0uF ceramic cap at least to ground.
2	2	DIO	Digital interface data input and output pin, Generally it needs a pull-up resistor to Vcc in most applications, between 4.7k and 10k.
1	3	GND	Ground pin.
		NC	No connection

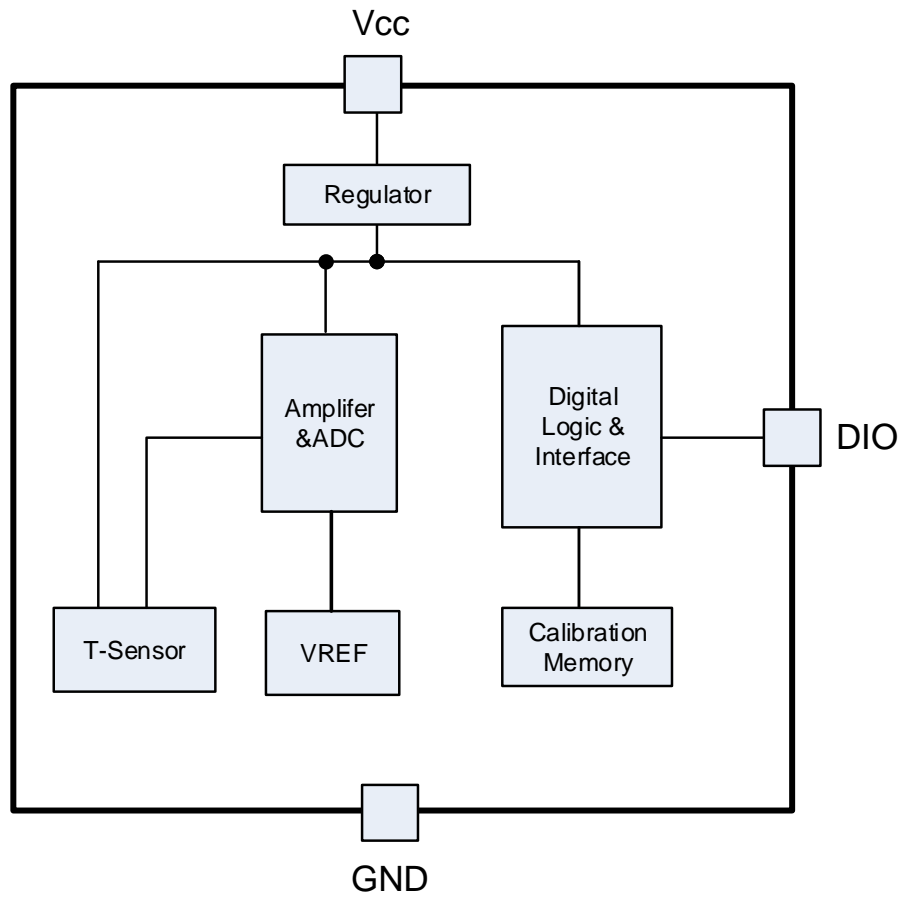
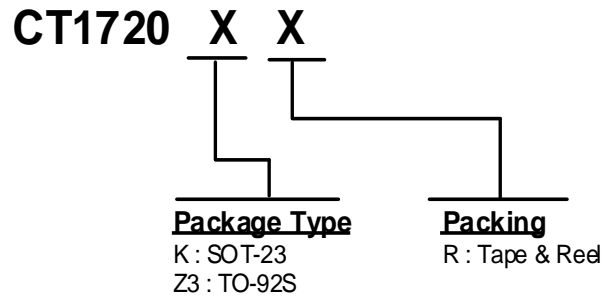
**Function Block**


Figure 2. CT1720 function block

**±0.5°C Accuracy Digital Temperature Sensor with S-Wire Interface**
**Ordering Information**


Order PN	Accuracy	Green <sup>1</sup>	Package	Marking ID <sup>2</sup>	Packing	MPQ	Operation Temperature
CT1720KR-A	±0.35°C	Halogen free	SOT-23	ANWX	Tape&Reel	3,000	-50°C~+150°C
CT1720KR	±0.5°C	Halogen free	SOT-23	ANWX	Tape&Reel	3,000	-50°C~+150°C
CT1720Z3	±0.5°C	Halogen free	TO-92S	1720 YWWAXX	Bulk	1,000	-50°C~+150°C

**Notes**

1. Sensylink can meet RoHS 2.0/REACH requirement. 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 1<sup>st</sup> row of characters are part number, and the 2<sup>nd</sup> row of characters are date code plus production information. For very small outline package, there's 4 digits to stands for product information and date code.



## ***SENSYLINK Microelectronics Inc.***

***[www.sensylink.com](http://www.sensylink.com)***

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