

## ***SENSYLINK Microelectronics***

***(CT7035L)***

### ***Analog Output Temperature Sensor***

***CT7035L is an Analog Output Temperature Sensor with  $\pm 0.35^{\circ}\text{C}$  Accuracy (CT7035LK). The sensor supports multi slope gain of Temperature-to-Voltage.***

***It is ideally used in General Temperature Sensing and Monitoring Systems, such as Industry Thermal Control and HVAC System etc.***

## 1. Description

The CT7035L is an analog output temperature sensor with  $\pm 0.35^{\circ}\text{C}$  accuracy (CT7035LK). It is easy to use to replace NTC by connection to A-to-D port of MCU.

The CT7035L serial parts have multi slope gain, which can replace industry standard parts directly, like LM20, LM35.

Each chip is calibrated in factory before shipment to customers. There is no need for re-calibration anymore for  $\pm 0.35^{\circ}\text{C}$  (CT7035LK) accuracy.

It includes a band-gap circuit, thermal diode, class AB output, a calibration unit.

It integrates a class AB output structure, which can offer up to  $\pm 500\mu\text{A}$  output capability to drive 1000pF load.

Available Package: SOT-23 and SC70-5.

## 2. Features

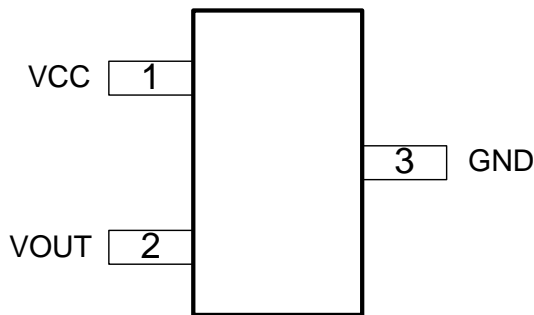
- Operation Voltage: 1.8V to 5.5V
- Average Quiescent Current: 7 $\mu\text{A}$  (Typ.)
- Temperature Accuracy:
  - $\pm 0.35^{\circ}\text{C}$  (Max.) from  $10^{\circ}\text{C}$  to  $30^{\circ}\text{C}$  (K version)
  - $\pm 1.0^{\circ}\text{C}$  (Max.) from  $-50^{\circ}\text{C}$  to  $150^{\circ}\text{C}$  (K version)
  - $\pm 1.5^{\circ}\text{C}$  (Max.) from  $10^{\circ}\text{C}$  to  $50^{\circ}\text{C}$  (Non-K version)
  - $\pm 3.5^{\circ}\text{C}$  (Max.) from  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$  (Non-K version)
- Multi Option for Slope Gain [mV/ $^{\circ}\text{C}$ ]:
 

CT7035LA, 19.5;	CT7035LB/J, 10.0
CT7035LC, 6.25;	CT7035LD, -5.5
CT7035LE, -8.2;	CT7035LF, -10.9
CT7035LG, -11.77;	CT7035LH, -13.6
CT7035LK, -5.8;	
- Output Short Protection
- Temperature Range:  $-50^{\circ}\text{C}$  to  $150^{\circ}\text{C}$

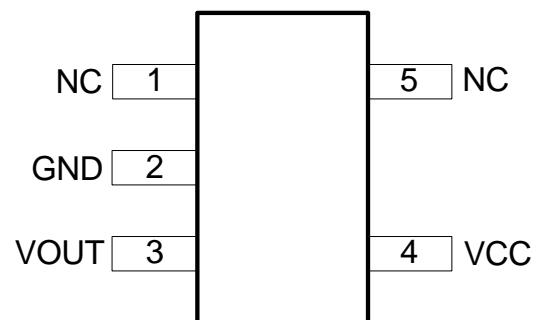
## 3. Applications

- Industry Thermal Control
- HVAC System

## 4. PIN Configurations (Top View)



SOT-23



SC70-5

## 5. Typical Application

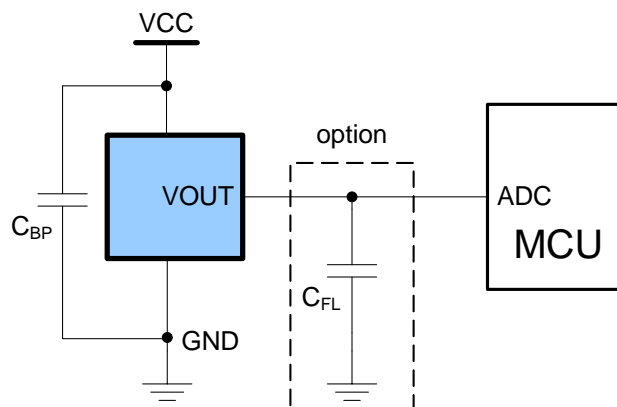


Figure 1. Typical Application of CT7035L

## 6. Pin Description

PIN No.		PIN Name	Description
SOT-23	SC70-5		
1	4	VCC	Power supply input pin, it should connect a 0.1uF to 1.0uF ceramic cap to ground close to the sensor.
2	3	VOUT	Analog voltage output pin, proportional to temperature.
3	2	GND	Ground pin.
	1, 5	NC	No connection

## 7. Function Block

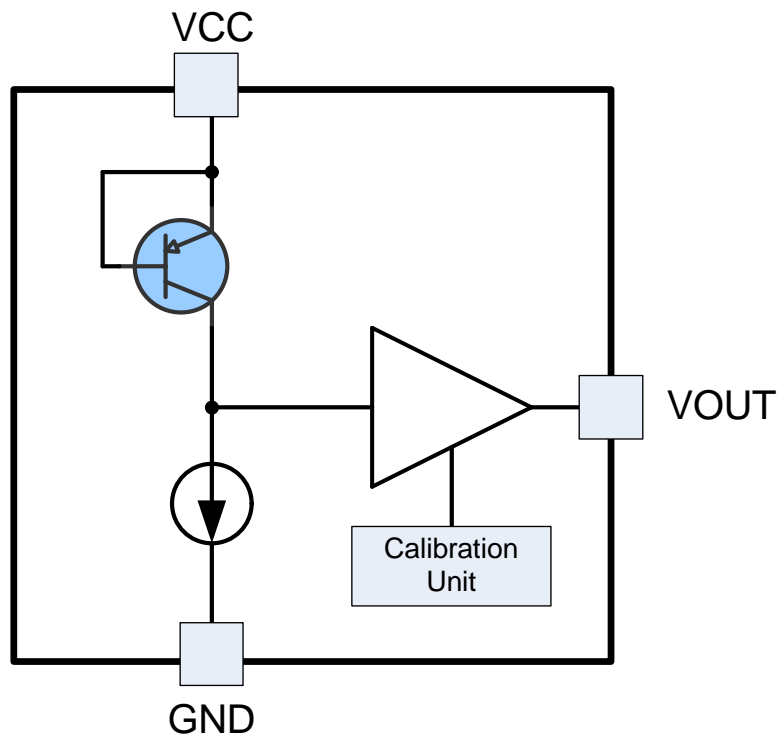


Figure 2. CT7035L function block

**8. Ordering Information**
**CT7035L X X X**
**Slope Gain**

A : 19.5mV/°C  
B : 10.0mV/°C  
C : 6.25mV/°C  
D : -5.5mV/°C  
E : -8.2mV/°C  
F : -10.9mV/°C  
G : -11.77mV/°C  
H : -13.6mV/°C  
J : 10.0mV/°C \*  
K : -5.8mV/°C

**Package Type**

K : SOT-23  
KC5 : SC70-5

**Packing**

R : Tape &amp; Reel

Order PN	Slope Gain [mV/°C]	Green <sup>1</sup>	Package	Marking ID <sup>2</sup>	Packing	MPQ	Operation Temperature
CT7035LAKR	19.5	Halogen free	SOT-23	KEWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LBKR	10.0	Halogen free	SOT-23	KFWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LCKR	6.25	Halogen free	SOT-23	KGWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LDKR	-5.5	Halogen free	SOT-23	KHWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LEKR	-8.2	Halogen free	SOT-23	KJWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LFKR	-10.9	Halogen free	SOT-23	KKWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LGKR	-11.77	Halogen free	SOT-23	KLWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LHKR	-13.6	Halogen free	SOT-23	KMWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LJKR	10.0	Halogen free	SOT-23	KNWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LKCR	-5.8	Halogen free	SOT-23	KPWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LAKC5R	19.5	Halogen free	SC70-5	KQWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LBKC5R	10.0	Halogen free	SC70-5	KRWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LCKC5R	6.25	Halogen free	SC70-5	KSWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LDKC5R	-5.5	Halogen free	SC70-5	KTWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LEKC5R	-8.2	Halogen free	SC70-5	KUWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LFKC5R	-10.9	Halogen free	SC70-5	KYWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LGKC5R	-11.77	Halogen free	SC70-5	KZWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LHKC5R	-13.6	Halogen free	SC70-5	LAWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LJKC5R	10.0	Halogen free	SC70-5	LBWX	Tape & Reel	3,000	-50°C ~ +150°C
CT7035LKCC5R	-5.8	Halogen free	SC70-5	LCWX	Tape & Reel	3,000	-50°C ~ +150°C

\* For J version, output voltage is 750mV at T<sub>A</sub> = 25°C, for B version, output voltage is 850mV at T<sub>A</sub> = 25°C. for other slope gain version unlisted above, please contact Sensylink sales.

**Note:**

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 1st row of characters is part number, and the 2nd row of characters are date code plus production information.



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

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