

# ***SENSYLINK Microelectronics***

## ***(CT80)***

### ***System Thermal Monitor with Digital Interface***

***CT80 is a system level solution chip to sense local temperature and monitor 7-channels external analog and/or digital temperature sensor, fan speed with  $^{\circ}\text{C}$ , SMBus Digital Interface.***

***It is ideally used in System Level Thermal Monitoring, such as Server and Telecom Equipment System etc.***

## System Thermal Monitor with Digital Interface

### Description

The CT80 is a system level thermal monitor solution chip, with digital interface.

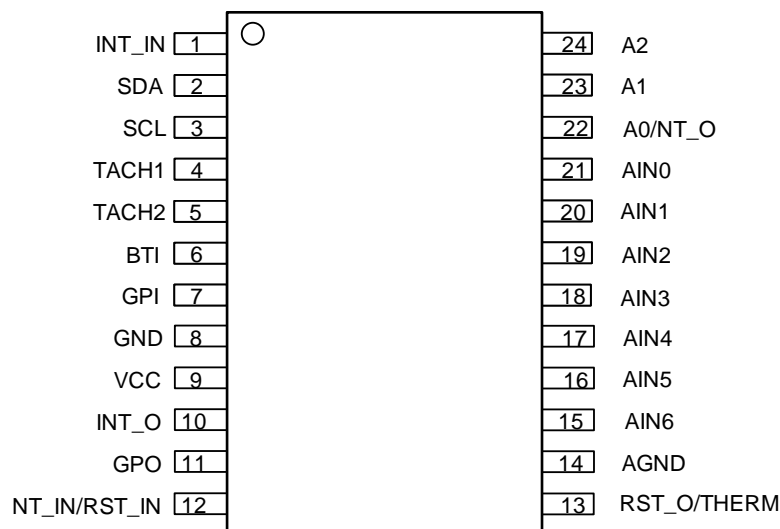
It includes local temperature sensor, 7-channel analog input, 2 channel programmable fan speed monitor, 3 channel digital input for logic monitor and 3 channel logic output.

Analog input can be used for voltage monitor, like connecting analog output temperature sensor (like CT7035) or monitor power supply voltage. Digital input can sense digital temperature sensor (like CT75) ALERT/THERM logic output.

The chip supports both speed of standard mode (100 kHz) and fast mode (400 kHz) for digital communication.

Available Package: TSSOP-24

### PIN Configurations (Top View)



TSSOP-24 (Package Code, MT)

### Features

- Operation Voltage: 1.7V to 5.5V
- Average Operating Current: 25uA (Typ. @3.3V)
- Shutdown Current: 20uA (Typ. @3.3V)
- Local Temperature Sensor with  $\pm 1^{\circ}\text{C}$  Accuracy, 0.0625 $^{\circ}\text{C}$  resolution
- 7-CH Analog Input for Voltage Monitor
- 2-CH Fan Speed Monitor
- 3-CH Logic Input for interrupt Monitor
- 2-CH Logic Output for interrupt Alarm
- 8 different slave address by setup A0/A1/A2 pin
- Alarm output for over/under limit temperature
- SMBus and I<sup>2</sup>C Digital interface up to 400kHz
- Temperature Range: -40 $^{\circ}\text{C}$  to 125 $^{\circ}\text{C}$

### Applications

- Server
- Telecom Equipment

## Typical Application

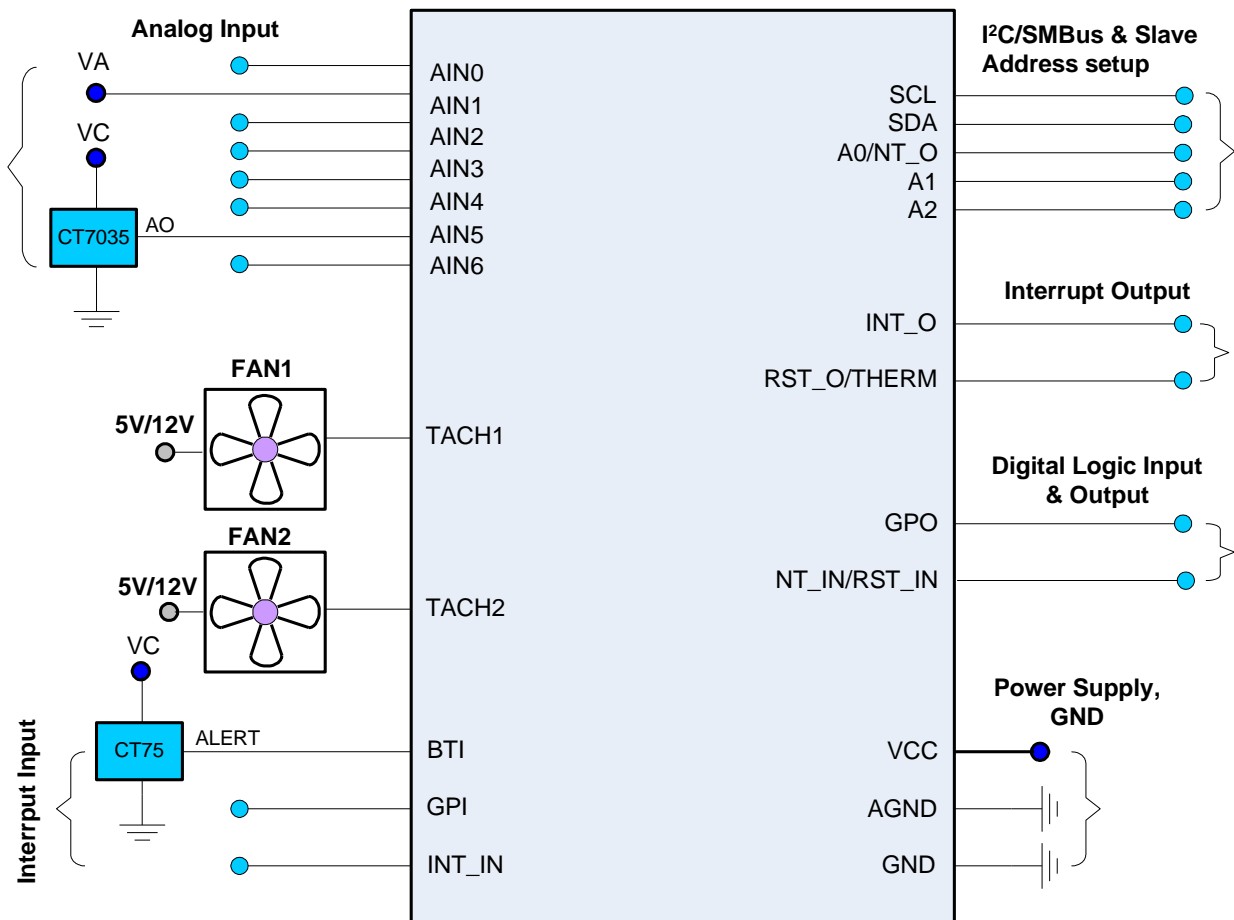


Figure 1. Typical Application of CT80

## Pin Description

PIN No.	PIN Name	Description
1	INT_IN	Interrupt input pin with active low, it propagates to INT_O pin of the chip.
2	SDA	Digital interface data input or output pin, need a pull-up resistor to VCC.
3	SCL	Digital interface clock input pin, need a pull-up resistor to VCC.
4	TACH1	Fan1 tachometer input for speed measurement. This pin couldn't be floated.
5	TACH2	Fan2 tachometer input for speed measurement. This pin couldn't be floated.
6	BTI	Board temperature interrupt input with active low, this pin can be connected to ALERT output of CT75. This pin has an internal pull-up resistor of 10k ohm.
7	GPI	General purpose digital input pin with active high.
8	GND	Ground pin.
9	VCC	Power supply input pin, using 0.1uF low ESR ceramic capacitor to ground.
10	INT_O	Interrupt output pin, it gets active once BTI, INT_IN or GPI pin interrupt happens. This pin can be Non-mask interrupt (active high, PMOS, need an external pull down resistor) or interrupt request (active low, NMOS, need an external pull up resistor)

## System Thermal Monitor with Digital Interface

11	GPO	General purpose digital output pin with active low, open drain. This pin needs an external pull-up resistor of 4.7k to 10k.
12	NT_IN/RST_IN	Digital input with active low, apply logic low on this pin will enable NAND combinatory logic tree function test; also it will reset the chip and all registers will reset as default data. this pin needs a pull-up resistor of 4.7k to 10k to VCC.
13	RST_O/THERM	Interrupt output pin with active low, open drain. This pin needs an external pull-up resistor of 4.7k to 10k. It can be used to reset the host chip. This pin will be active once interrupt alarm happens caused by over/under limit temperature.
14	AGND	Analog ground pin
15	AIN6	Analog input channel 6, 0 to 2.56V range with 2.5mV resolution.
16	AIN5	Analog input channel 5, 0 to 2.56V range with 2.5mV resolution.
17	AIN4	Analog input channel 4, 0 to 2.56V range with 2.5mV resolution.
18	AIN3	Analog input channel 3, 0 to 2.56V range with 2.5mV resolution.
19	AIN2	Analog input channel 2, 0 to 2.56V range with 2.5mV resolution.
20	AIN1	Analog input channel 1, 0 to 2.56V range with 2.5mV resolution.
21	AIN0	Analog input channel 0, 0 to 2.56V range with 2.5mV resolution.
22	A0/NT_O	Slave Address setup bit0. Also this bit can be used as logic output during NAND combinatory logic tree function test.
23	A1	Slave Address setup bit1
24	A2	Slave Address setup bit2

### Function Block

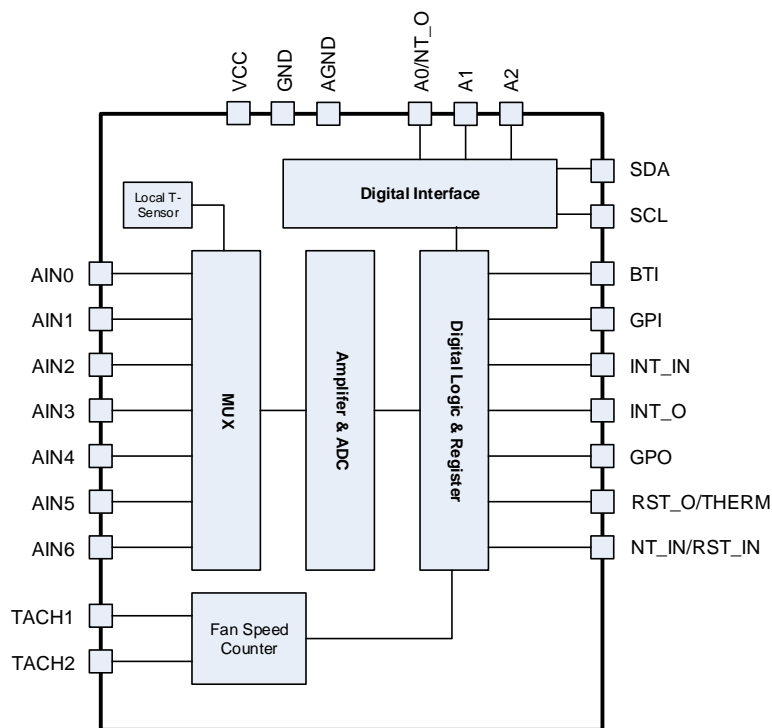
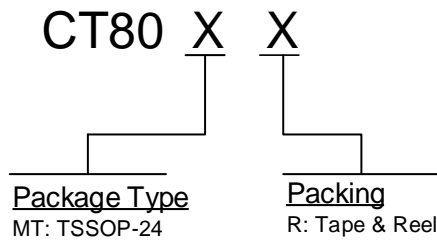


Figure 2. CT80 function block

### Ordering Information

**System Thermal Monitor with Digital Interface**


Order PN	Accuracy	Green <sup>1</sup>	Package	Marking ID <sup>1</sup>	Packing	MPQ	Operation Temperature
CT80MTR	±1 °C	Halogen free	TSSOP-24	80 YWWAXX	Tape & Reel	4,000	-40°C~+125°C

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 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.



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

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