

SENSYLINK Microelectronics Inc

(CT7318)

Remote and Local Temperature Sensor

CT7318 is a 2-channel (1-CH Remote and 1-CH Local) Digital Temperature Sensor with ±1°C Accuracy and SMBus Interface. It is ideally used in Temperature Sensing and Monitoring Systems, such as Computer, Telecom Equipment, Multi-cell Battery Pack and Smart HVAC System etc.

±1°C Remote and Local Temperature Sensor with Digital Interface

Description

The CT7318 is a digital temperature sensor with ±1°C accuracy. Temperature data can be read out directly via SMBus interface by MCU or SoC chip.

CT7318 has two independent channels: one remote and one local sensor. The remote sensor could be connected to an external Diode or BJT transistor (diode-connected mode).

Each chip is calibrated in factory before shipment to customers. There is no need for re-calibration anymore for ±1°C accuracy.

It includes a band-gap circuit, an Analog to Digital converter, a calibration unit with non-volatile memory and a digital interface block.

It integrates an 11-bit ADC, which can offer 0.125°C resolution. The maximum temperature readout range can be up to 160°C plus offset shifting register.

It has 2 logic output pin (ALERT, THERM) with open drain structure, which are active low as default.

Available Package: SOP-8/MSOP-8 and DFN3x3-8

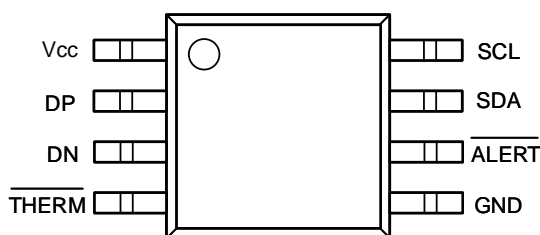
Features

- Operation Voltage: 1.75V to 5.5V
- Average Quiescent Current: 45uA at 1.0con/s
- Standby Current: 3.0uA (Max.)
- Temperature Accuracy without calibration: ±1°C from 0°C to 100°C
- ±2°C from -40°C to 125°C
- 11 bit ADC for 0.125°C resolution
- Digital interface compatible with SMBus, 2-wire and I²C
- Temperature Range up to 160°C plus offset shifting register for Remote Sensor Channel
- Programmable Over/Under Alarm Temperature and Hysteresis Temperature
- Independent Remote and Local Temperature Sensing Channel
- Support SMBus ALERT Response Address
- Temperature Range: -40°C to 125°C

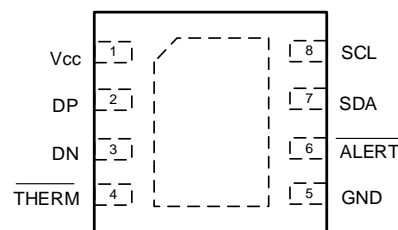
Applications

- Desktop & Notebook Computer
- Telecom Equipment
- Multi-cell Battery Pack
- Smart HVAC System

PIN Configurations (Top View)



SOP-8/MSOP-8 (Package code M/MM)



DFN3x3-8 (Package code DN)

Typical Application

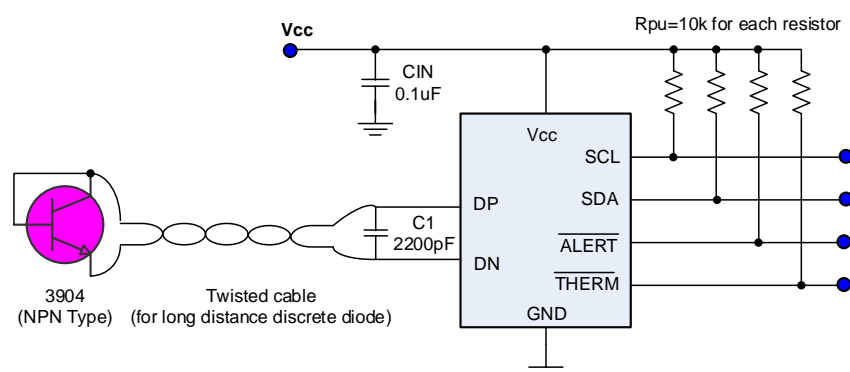


Figure 1. Typical Application of CT7318.

±1°C Remote and Local Temperature Sensor with Digital Interface

Pin Description

PIN No.	PIN Name	Description
1	Vcc	Power supply input pin, using 0.1uF low ESR ceramic capacitor to ground
2	DP	Remote sensor positive input pin, it could be positive node of Diodes, or BJT transistor (diode-connected mode). it is recommended to use 2200pF bypass capacitor to remove noise between DP and DN pin.
3	DN	Remote sensor positive input pin, it could be negative node of Diodes, or BJT transistor (diode-connected mode). it is recommended to use 2200pF bypass capacitor to remove noise between DP and DN pin.
4	$\overline{\text{THERM}}$	Open drain output with active low. need a pull-up resistor to Vcc.
5	GND	Ground pin.
6	$\overline{\text{ALERT}}$	Open drain output with active low. need a pull-up resistor to Vcc.
7	SDA	Digital interface data input or output pin, need a pull-up resistor to Vcc.
8	SCL	Digital interface clock input pin, need a pull-up resistor to Vcc.

Function Block

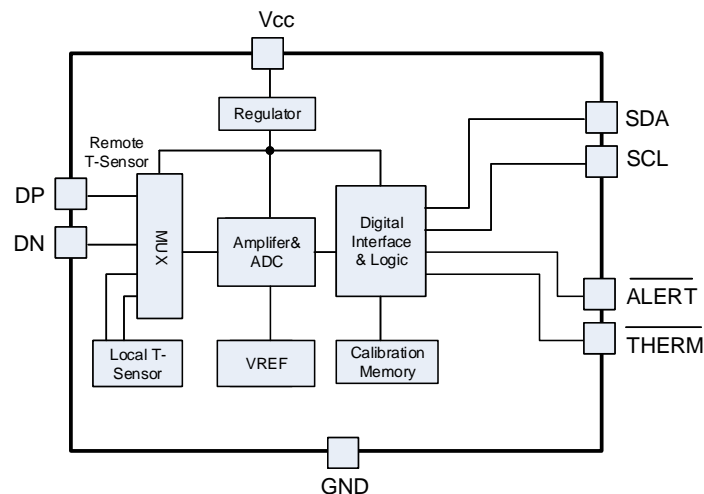
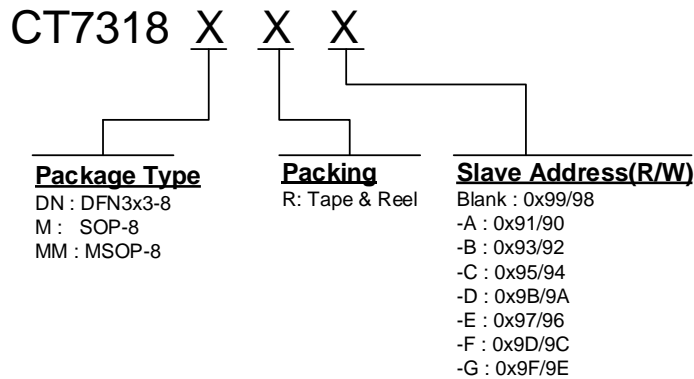


Figure 2. CT7318 function block

±1°C Remote and Local Temperature Sensor with Digital Interface

Ordering Information (Note1)


Order PN	Slave Address (R/W)	Accuracy	Green ¹	Package	Marking ID ²	Packing	MPQ	Operation Temperature
CT7318DNR	0x99/98	±1°C	Halogen free	DFN3x3-8	7318 YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-A	0x91/90	±1°C	Halogen free	DFN3x3-8	SAGA YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-B	0x93/92	±1°C	Halogen free	DFN3x3-8	SAGB YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-C	0x95/94	±1°C	Halogen free	DFN3x3-8	SAGC YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-D	0x9B/9A	±1°C	Halogen free	DFN3x3-8	SAGD YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-E	0x97/96	±1°C	Halogen free	DFN3x3-8	SAGE YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-F	0x9D/9C	±1°C	Halogen free	DFN3x3-8	SAGF YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318DNR-G	0x9F/9E	±1°C	Halogen free	DFN3x3-8	SAGG YWWAXX	Tape & Reel	3000	-40°C~+125°C
CT7318MR	0x99/98	±1°C	Halogen free	SOP-8	7318 YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-A	0x91/90	±1°C	Halogen free	SOP-8	SAHA YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-B	0x93/92	±1°C	Halogen free	SOP-8	SAHB YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-C	0x95/94	±1°C	Halogen free	SOP-8	SAHC YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-D	0x9B/9A	±1°C	Halogen free	SOP-8	SAHD YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-E	0x97/96	±1°C	Halogen free	SOP-8	SAHE YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-F	0x9D/9C	±1°C	Halogen free	SOP-8	SAHF YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MR-G	0x9F/9E	±1°C	Halogen free	SOP-8	SAHG YWWAXX	Tape & Reel	4,000	-40°C~+125°C
CT7318MMR	0x99/98	±1°C	Halogen free	MSOP-8	7318 YWWAXX	Tape & Reel	3,000	-40°C~+125°C
CT7318MMR-A	0x91/90	±1°C	Halogen free	MSOP-8	SAJA YWWAXX	Tape & Reel	3,000	-40°C~+125°C
CT7318MMR-B	0x93/92	±1°C	Halogen free	MSOP-8	SAJB YWWAXX	Tape & Reel	3,000	-40°C~+125°C
CT7318MMR-C	0x95/94	±1°C	Halogen free	MSOP-8	SAJC YWWAXX	Tape & Reel	3,000	-40°C~+125°C
CT7318MMR-D	0x9B/9A	±1°C	Halogen free	MSOP-8	SAJD YWWAXX	Tape & Reel	3,000	-40°C~+125°C

±1°C Remote and Local Temperature Sensor with Digital Interface

CT7318MMR-E	0x97/96	±1°C	Halogen free	MSOP-8	SAJE YWWAXX	Tape & Reel	3,000	-40°C~+125°C
CT7318MMR-F	0x9D/9C	±1°C	Halogen free	MSOP-8	SAJF YWWAXX	Tape & Reel	3,000	-40°C~+125°C
CT7318MMR-G	0x9F/9E	±1°C	Halogen free	MSOP-8	SAJG YWWAXX	Tape & Reel	3,000	-40°C~+125°C

Note 1

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



SENSYLINK Microelectronics Inc.

www.sensylink.com

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