Low Power Digital Temperature Sensor With Two-Wire Serial Interface in CSP & SOT23

Description

CT7118 is a digital-output temperature sensor with a dynamically-programmable limit window, and under- and over-temperature alert functions. These features provide optimized temperature control without the need of frequent temperature readings by the controller or application processor.

The CT7118 features SMBus and two-wire interface compatibility, and allows up to four devices on one bus with the SMBus alert function.

The CT7118 is designed for thermal management optimization in a variety of consumer, computer, and environmental applications. The device is specified over a temperature range of –40°C to +125°C.

Available Package: CSP-6 package and SOT-23-6 package.

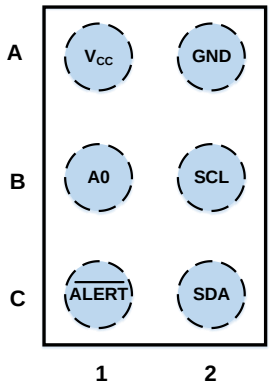
Features

- Supply range: 1.8 V to 5.5 V.
- Dynamically-programmable limit window with under-temperature and over-temperature alerts.
- Supports ARA (Alert Response Address)
- Temperature Accuracy:
  CT7118J6R:
  Maximum: ±0.5°C from –20°C to +85°C.
  Maximum: ±0.75°C from –40°C to +125°C.
  CT7118AK6R, CT7118BK6R, CT7118CK6R:
  Maximum: ±1°C from –20°C to +85°C.
  Maximum: ±2°C from –40°C to +125°C.
- Low quiescent current:
  Maximum: 3.5 μA from –40°C to +125°C @ 1.8V
- Low shutdown current:
  Maximum: 350 nA from –40°C to +125°C @ 1.8V
- Resolution:
  CT7118/CT7118C: 12 bits (0.0625°C).
  CT7118A/CT7118B: 13 bits (0.03125°C).

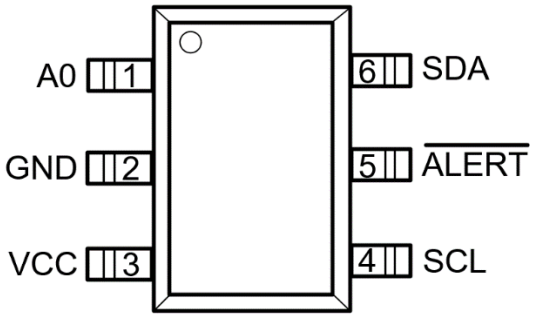
Applications

- SSD
- Battery management
- Thermostat control
- Computer/ Notebook
- Server

Pin Configurations (Top View)

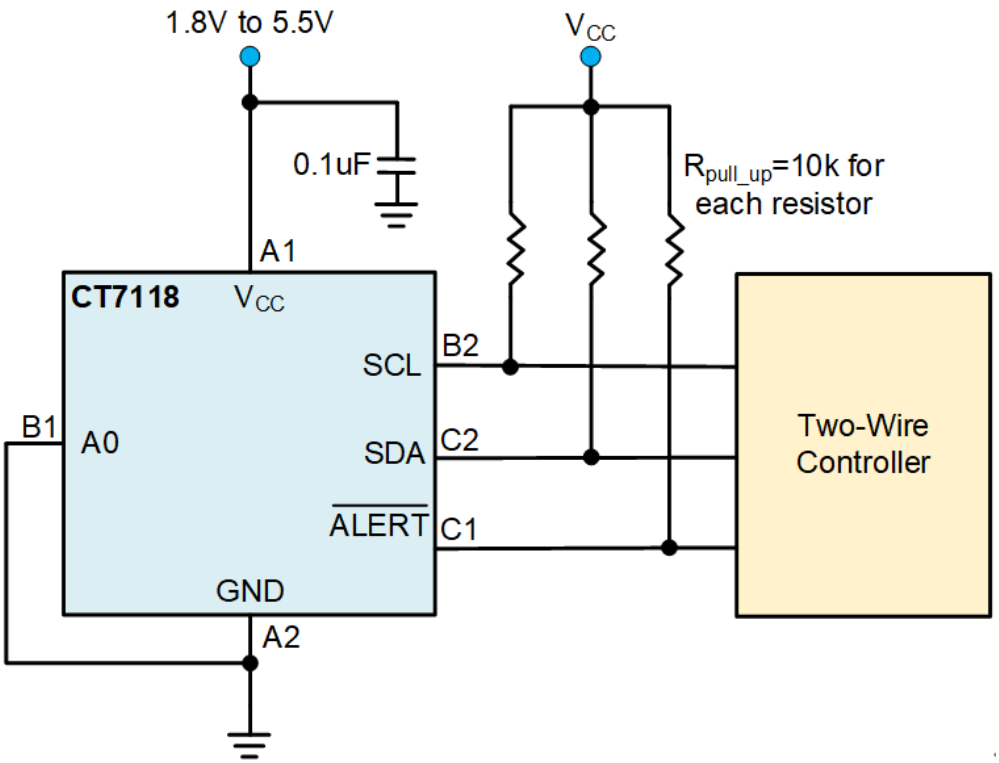


CSP-6



SOT-23-6

Typical Application

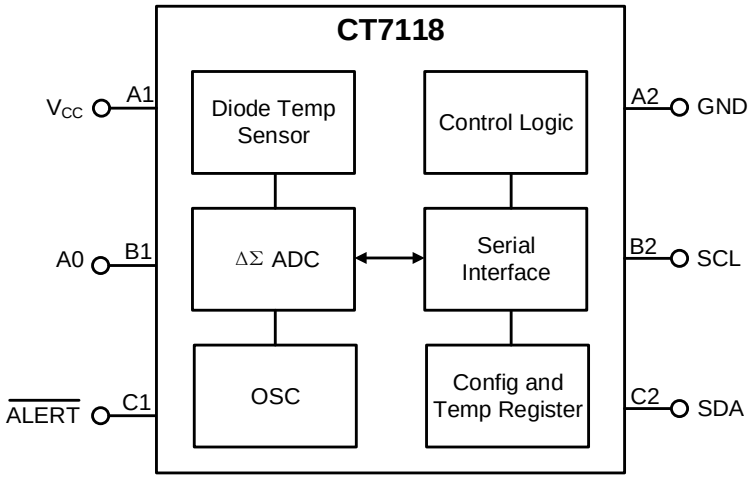


Typical Application of CT7118

Pin Description

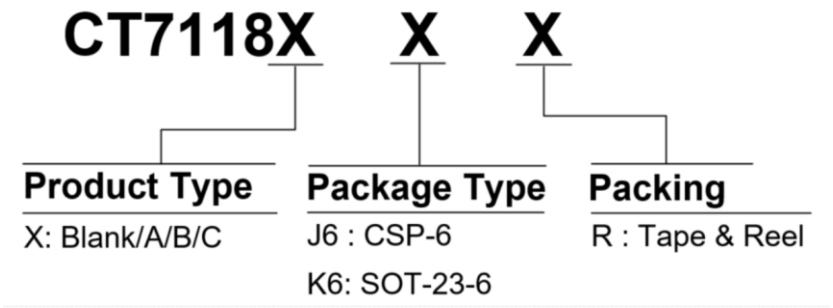
Pin Name	Pin No.		Description
	CSP-6	SOT-23-6	
V_{CC}	A1	3	Supply voltage (1.8 V to 5.5 V).
A0	B1	1	Address selection pin. Connect to GND, V_{CC}, SDA, or SCL.
$\overline{ALERT}$	C1	5	Open-drain output pin. Connect to V_{CC} via a pull-up resistor.
SDA	C2	6	Input/output data pin.
SCL	B2	4	Input clock pin.
GND	A2	2	Ground.

Function Block



CT7118 Function Block

Ordering Information



Order PN	Slave Address	Green	Package	Marking ID	Packing	MPQ	Operation Temperature
CT7118J6R	Refer to Chapter **Serial Bus Address**	Halogen free	CSP-6	HD	Tape & Reel	3,000	-40°C ~ +125°C
CT7118AK6R		Halogen free	SOT-23-6	JMWX	Tape & Reel	3,000	-40°C ~ +125°C
CT7118BK6R		Halogen free	SOT-23-6	JNWX	Tape & Reel	3,000	-40°C ~ +125°C
CT7118CK6R		Halogen free	SOT-23-6	JPWX	Tape & Reel	3,000	-40°C ~ +125°C

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