

## FEATURES

### Thermal Sensor

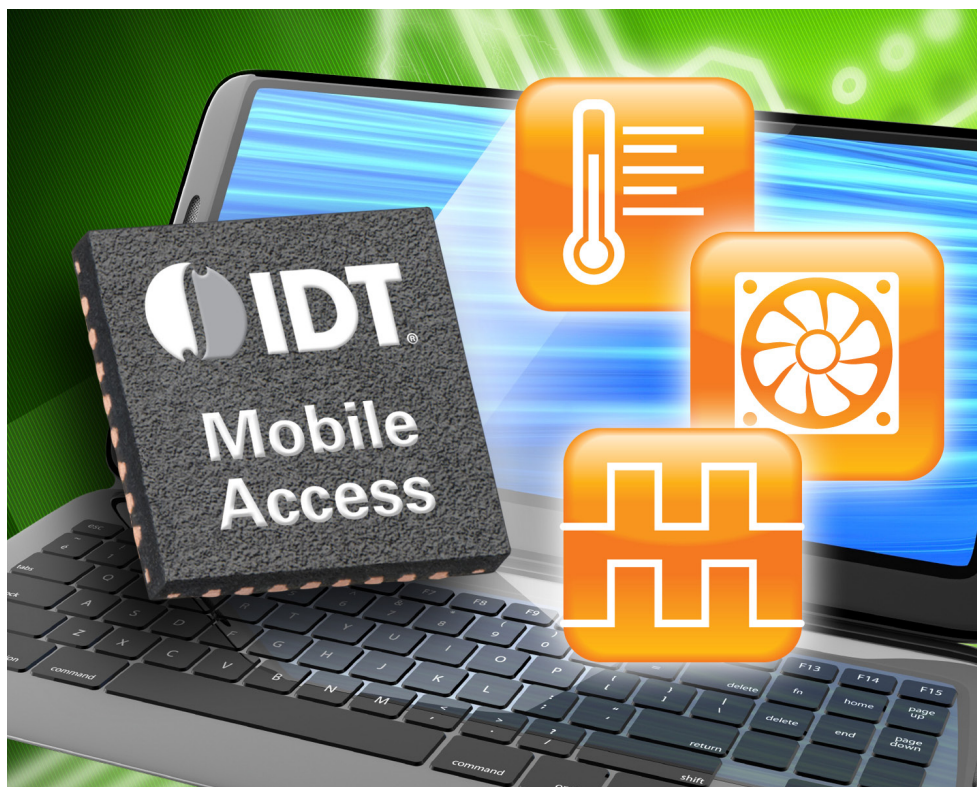
- Up to two channels of remote temperature sense
- Both hardware and software programmable over/under temperature alarms
- No calibration requirements
- Diode failure detection
- Supports SMBUS Alert
- Accuracy: 1°C (60°C to 100°C); 2°C (0°C to 100°C)
- Offset register for system calibration

### Fan Controller

- High frequency or low frequency PWM outputs for use with 4-wire fans
- TACH input to measure fan speed
- OS independent automatic fan speed control based on thermal information
- Dynamic control mode to optimize system acoustics
- Default startup at 100% PWM for all fans for robust operation

### System Clock PLL Synthesizers

- Scalable low voltage VDD I/O (1.05V~1.5V) to reduce power consumption (applies to 25MHz output)
- Integrated series termination resistors
- Selectable single-ended 24MHz/27MHz/48MHz clock output at VDDIO
- Three single-ended 25MHz clock outputs (buffer out)
- 32.768 kHz outputs with < 1.8  $\mu$ A power consumption for system RTC circuit 2011



## Device Overview

The 9TCS1083 is a highly programmable IC that integrates clock synthesizers with a PWM fan controller and multiple temperature sensors for hardware thermal protection.

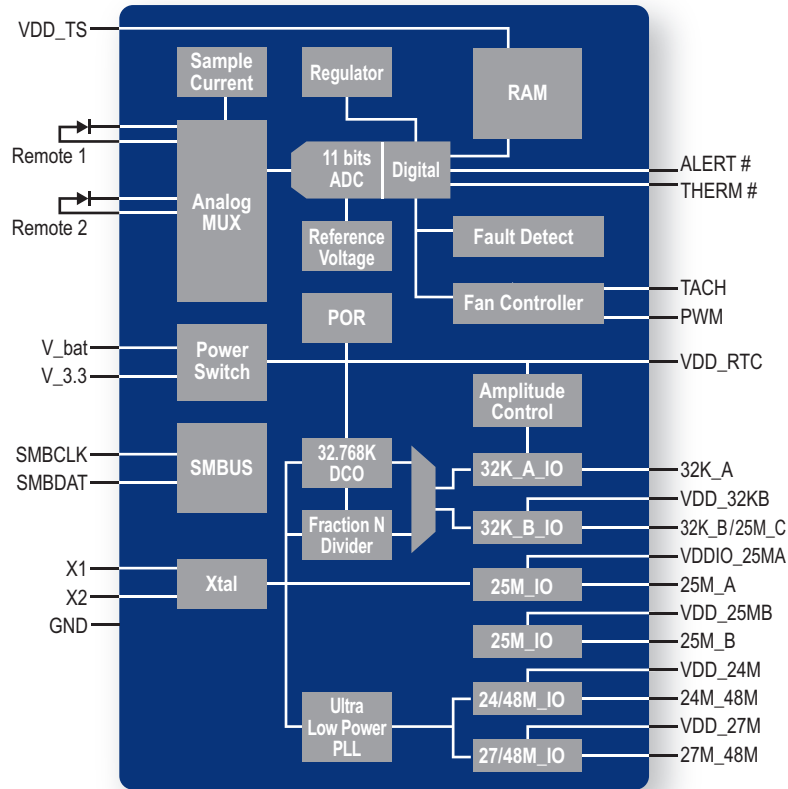
The device has an ultra-low-power 32.768 kHz frequency generator to support Real Time Clocks (RTC) and can generate the 32.768 kHz frequency for up to four years powered by a CR2032 battery. The 9TCS1083 can output computer system clock frequencies of 24, 25, 27, and 48MHz to reduce overall component count.

A pulse width modulated (PWM) fan controller is used for temperature proportional speed control. The device is highly configurable through I<sup>2</sup>C for ease and flexibility of use. The fan controller has three different modes of operation and will work with multiple pole brushless DC fans.

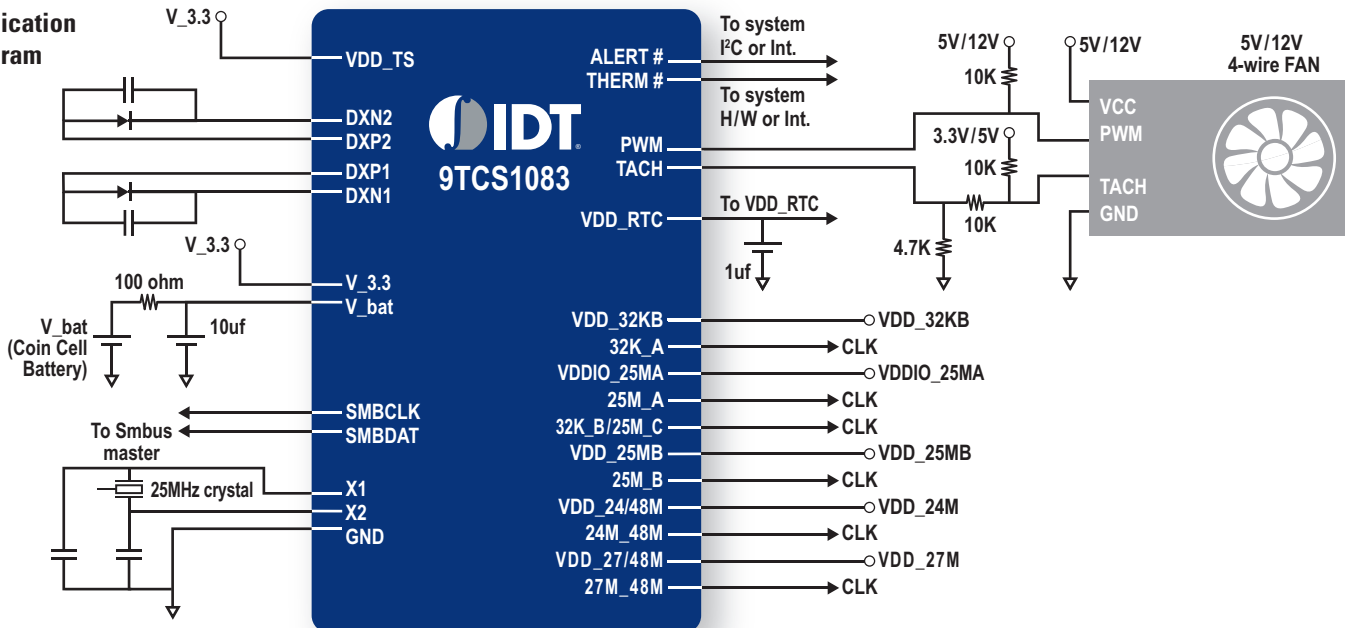
The 9TCS1083 includes a temperature monitor that measures two external diodes. The temperature sensor is optimized to be accurate within 1°C within the temperature range of 60°C to 100°C. High, low, and critical limits are programmable for all the temperature channels and the limits can drive dedicated fault and alert pins for system shutdown.

The 9TCS1083 is available in a 32-pin QFN package.

## Device Block Diagram



## Application Diagram



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