

## 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.

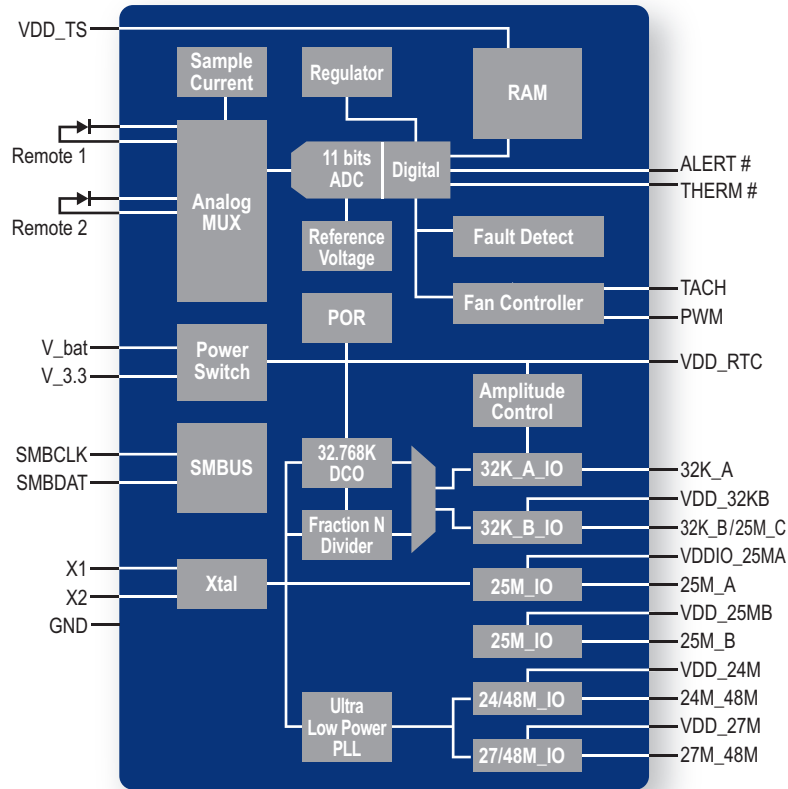
The device has an ultra-low-power 32.768 kHz frequency generator to support Real Time Clocks (RTC) and can generate the 32.768 kHz frequency for up to four years powered by a CR2032 battery. The 9TCS1083 can output computer system clock frequencies of 24, 25, 27, and 48MHz to reduce overall component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

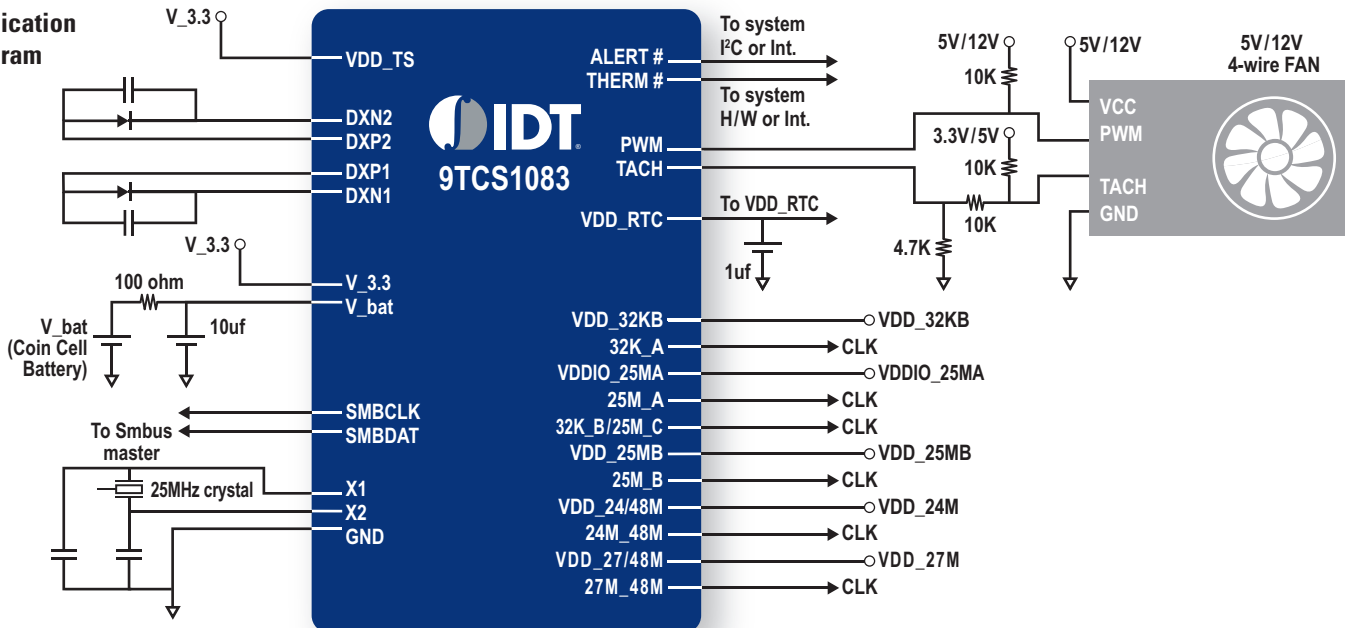
The 9TCS1083 includes a temperature monitor that measures two external diodes. The temperature sensor is optimized to be accurate within 1°C within the temperature range of 60°C to 100°C. High, low, and critical limits are programmable for all the temperature channels and the limits can drive dedicated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

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

## Device Block Diagram



## Application Diagram



Discover what IDT know-how can do for you: [www.IDT.com/go/MobileAccess](http://www.IDT.com/go/MobileAccess)

DISCLAIMER Integrated Device Technology, Inc. (IDT) and its subsidiaries reserve the right to modify the products and/or specifications described herein at any time and at IDT's sole discretion. All information in this document, including descriptions of product features and performance, is subject to change without notice. Performance specifications and the operating parameters of the described products are determined in the independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of IDT's products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of IDT or any third parties. IDT's products are not intended for use in life support systems or similar devices where the failure or malfunction of an IDT product can be reasonably expected to significantly affect the health or safety of users. Anyone using an IDT product in such a manner does so at their own risk, absent an express, written agreement by IDT.

Integrated Device Technology, IDT and the IDT logo are registered trademarks of IDT. Other trademarks and service marks used herein, including protected names, logos and designs, are the property of IDT or their respective third party owners. © Copyright 2011. All rights reserved.

PB\_9TCS1083\_REVA1111