SONY

IMX273 / IMX287 Application Note

# Simple Thermometer

The data except this specification conform to those of IMX273 / IMX287.

## Description

The function of simple thermometer which can know the rough value of the temperature is described in this document.

## Features

- ◆Register output
- ◆Compatible temperature
  Tj = -30 ℃ to 75 ℃
  (The precision is not guaranteed.)

## Contents

## Register Map

The register map for Simple Thermometer is shown below.
Please refer to the product specification for register setup other than those list.

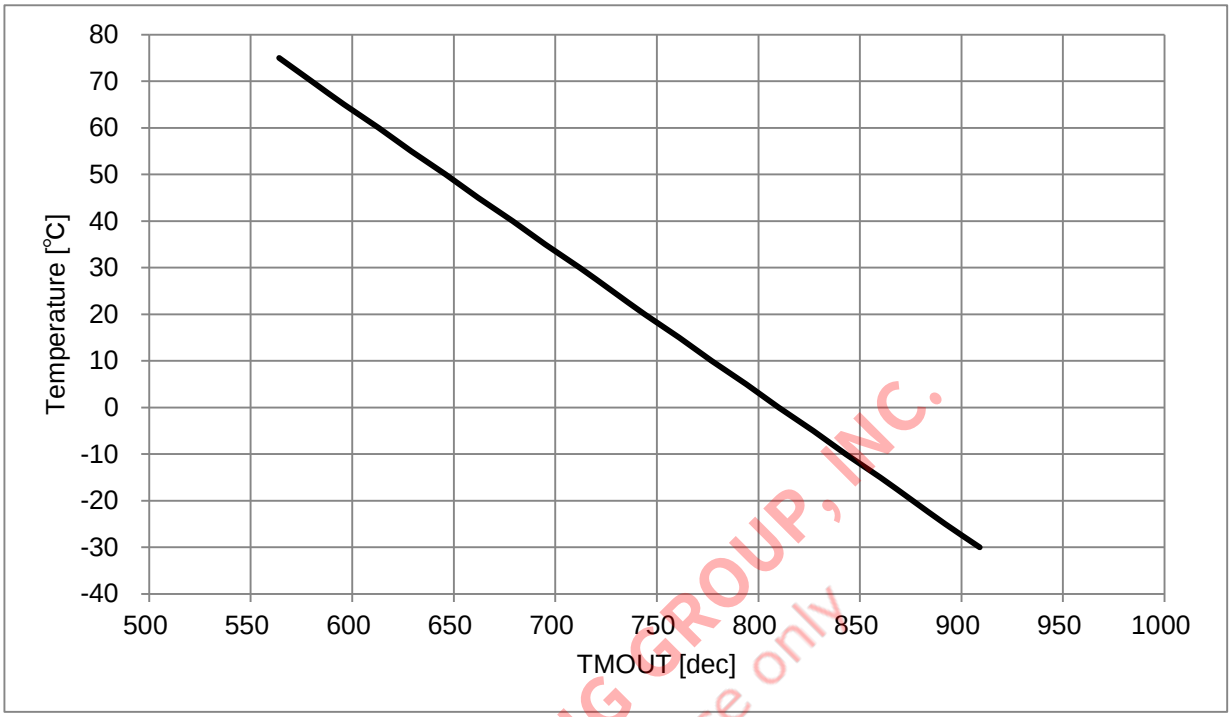
Registers corresponding to Chip ID = 02h in Write mode. (I2C:30**h)

| Address | Bit | Register name | Description | Default Value after reset | Reflection timing |
|---|---|---|---|---|---|
| 1Dh | 0 | TMDLATCH | 0: Holding the value of TMOUT<br>1: Updating the value of TMOUT<br>This register doesn't clear after reading TMOUT.<br>This register must set to "0" before next reading TMOUT. | 0 | I |
| | 1 | | Fixed to "0" | 0 | - |
| | 2 | | Fixed to "0" | 0 | - |
| | 3 | | Fixed to "0" | 0 | - |
| | 4 | | Fixed to "0" | 0 | - |
| | 5 | | Fixed to "0" | 0 | - |
| | 6 | | Fixed to "0" | 0 | - |
| | 7 | | Fixed to "0" | 0 | - |
| 1Eh | 0 | TMOUT | LSB | undefined | I |
| | 1 | | | | |
| | 2 | | | | |
| | 3 | | | | |
| | 4 | | | | |
| | 5 | | | | |
| | 6 | | | | |
| | 7 | | | | |
| 1Fh | 0 | | | | |
| | 1 | | MSB | | |
| | 2 | | Fixed to "0" | 0 | - |
| | 3 | | Fixed to "0" | 0 | - |
| | 4 | | Fixed to "0" | 0 | - |
| | 5 | | Fixed to "0" | 0 | - |
| | 6 | | Fixed to "0" | 0 | - |
| | 7 | | Fixed to "0" | 0 | - |

## How to calculate

The way to calculate the temperature is as below.

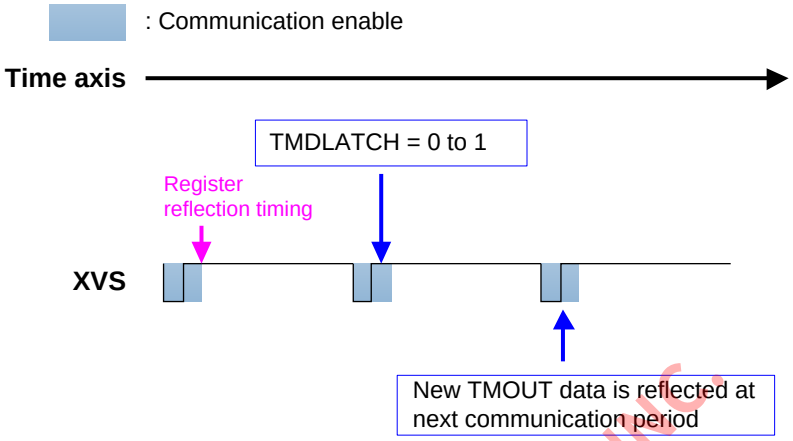
Temperature [℃] = 246.312 – 0.304 * TMOUT




The temperature of TMOUT

## Reflection timing

The timing of the reading the temperature updated is as below.
The value is updated at the next communication period of setting the TMDLATCH.
After that, the value of TMOUT is held until the next timing of setting “1” into TMDLATCH




The reflection timing of Normal mode (4-wire)

## Revision History

| Version | Date | Page | Remarks |
|---|---|---|---|
| Rev.0.1 | 20 – Jan. – 17 | – | First Edition |
| Rev.1.0 | 6 – Oct. – 17 | – | First Edition (Official Version) |