Temperature and Humidity Sensor

1 Features

- Supply voltage range：2.0V to 5.5V
- Temperature range: −45°C to 130°C
- Relative humidity range: 0 to 100%
- Typical accuracy：±3%RH / ±3%°C
- ADC resolution：16Bit
- Digital output：I2C bus speed of 1 MHz
- Slave Address：0x44, 0x45
- Single-Chip Solution for Temperature and Humidity

2 Applications

- Smart home
- Air quality/dehumidifier
- Washer & dryer
- Consumer electronics
- Cold chain transportation
- Wireless sensor

3 Description

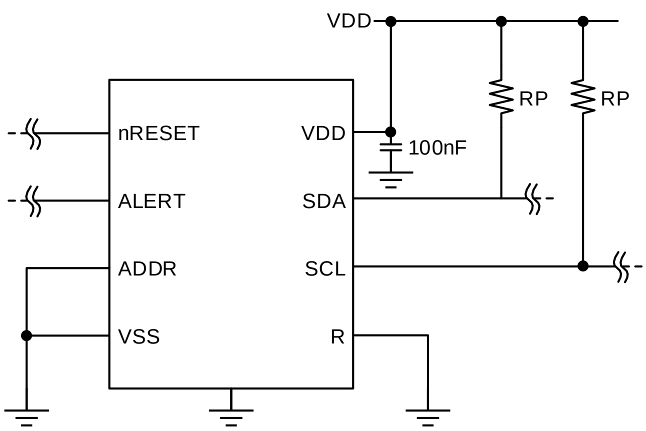
GD30TSHT30 is a temperature and relative humidity sensor with an I2C interface. It is a CMOS-MEMS sensor based on GigaDevice innovation technology. In addition, the sensor's I2C interface features two distinctive and selectable I2C addresses, with I²C communication speeds of up to 1MHz. The chip is packaged in a miniaturized DFN package with dimensions of 2.50mm x 2.50mm and a thickness of only 0.9mm. This allows the GD30TSHT30 to be widely integrated into various applications. Moreover, its wide supply voltage range of 2.0V to 5.5V makes it adaptable to multiple power supply environments.

Device Information[1]

PART NUMBER	PACKAGE	BODY SIZE (NOM)
GD30TSHT30	DFN-8	2.50mm x 2.50mm

1. For packaging details, see *Package Information* section.

Simplified Application Schematic



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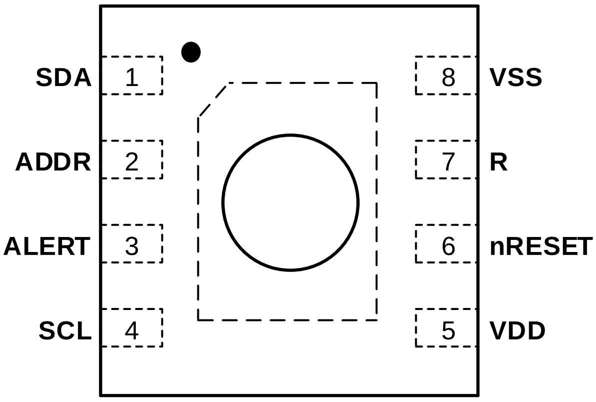
4 Device Overview

4.1 Pin Assignment

DFN Package
8-Pin Top View



4.2 Pin Description

PINS		PIN TYPE[1]	FUNCTION
NAME	NUM		
SDA	1	IO	Data pin; input/output.
ADDR	2	I	Address pin, input; connect to either logic high or low, do not leave floating.
ALERT	3	O	Indicates alarm condition; will be set high if the set threshold is exceeded; output; must be left floating if unused
SCL	4	IO	Serial clock; input/output
VDD	5	P	Supply voltage; input
nRESET	6	I	Reset pin active low; input; if not used, it is recommended to be left floating.
R	7		No electrical function; to be connected to VSS.
VSS	8	G	Ground.

1. P = power, G = Ground, I = input, O = Output, IO=input and output.

5 Parameter Information

5.1 Absolute Minimum and Maximum Ratings

Exceeding the operating temperature range (unless otherwise noted)[1]

SYMBOL	PARAMETER	MIN	MAX	UNIT
V_{DD}	Power supply	−0.3	6	V
V_{IO}	Voltage at SCL, SDA, ADDR, ALERT and nRESET	−0.3	VDD+0.3	V
I_{IN}	Input current on any range	−100	100	mA
T_A	Operating temperature range	−40	130	°C
T_{stg}	Storage temperature	−40	150	°C

1. The maximum ratings are the limits to which the device can be subjected without permanently damaging the device. Note that the device is not guaranteed to operate properly at the maximum ratings. Exposure to the absolute maximum rating conditions for extended periods may affect device reliability.

5.2 Recommended Operation Conditions

SYMBOL[1]	PARAMETER	MIN	TYP	MAX	UNIT
V_{DD}	Supply voltage	2.0	3.3	5.5	V
T_A	Operating Temperature range	−40		130	°C

5.3 Electrical Sensitivity

SYMBOL[1]	CONDITIONS	VALUE	UNIT
$V_{ESD(HBM)}$	Human-body model (HBM), ANSI/ESDA/JEDEC JS-001-2017[1]	±6000	V
$V_{ESD(CDM)}$	Charge-device model (CDM), ANSI/ESDA/JEDEC JS-002-2022[2]	±750	V

1. JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.
2. JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

5.4 Electrical Characteristics

Typical values correspond to temperatures of 25°C, while maximum and minimum values correspond to temperatures of −45°C and 130°C, respectively.

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Power supply						
V_{DD}	Power Supply Voltage		2.0	3.3	5.5	V
V_{POR}	Power-up/down level		1.8	1.9	2.0	V
$V_{DD,slew}$	Slew rate change of the supply voltage				20	V/ms
I_{DD}	Supply current	Idle state(single shot mode) T = 25°C		0.2	2	µA
		Idle state(single shot mode) T = 125°C			6	
		Idle state(periodic data acquisition mode) T = 125°C		45		
		Measuring		600	1500	
		Average		1.7		
I_{OH}	Alert Output driving			1.5 x VDD		mA
Pheater	Heater power	Heater running	3.6		3.3	mW
Timing Specification for the Sensor System (−40 °C to 125 °C and 2.4 V to 5.5 V)						
t_{PU}	Power-up time	After hard reset, V_{DD} ≥ V_{POR}		0.5	1	ms
t_{SR}	Soft reset time	After soft reset		0.5	1.5	ms
$t_{RESENTN}$	Duration of reset pulse		1			us
$t_{MEAS,l}$	Measurement duration	Low repeatability		2.5	4	ms
$t_{MEAS,m}$		Medium repeatability		4.5	6	ms
$t_{MEAS,h}$		High repeatability		12.5	15.5	ms
Timing Specification for the Sensor System (−40 °C to 125 °C and 2.4V to 5.5 V)						
t_{PU}	Power-up time	After hard reset, V_{DD} ≥ V_{POR}		0.5	1.5	ms
$t_{MEAS,l}$	Measurement duration	Low repeatability		2.5	4.5	ms
$t_{MEAS,m}$		Medium repeatability		4.5	6.5	ms
$t_{MEAS,h}$		High repeatability		12.5	15.5	ms

5.5 Humidity Sensor Characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Humidity Range		0		100	%RH
Accuracy	Typ		±3		%RH
Repeatability Error	Low		0.25		%RH
	Medium		0.15		%RH
	High		0.10		%RH
Resolution	Typ		0.01		%RH
Hysteresis	At 25°C		±0.8		%RH
Response Time	τ63%		8		Second
Long Term Drift	Typ			0.25	%RH /year

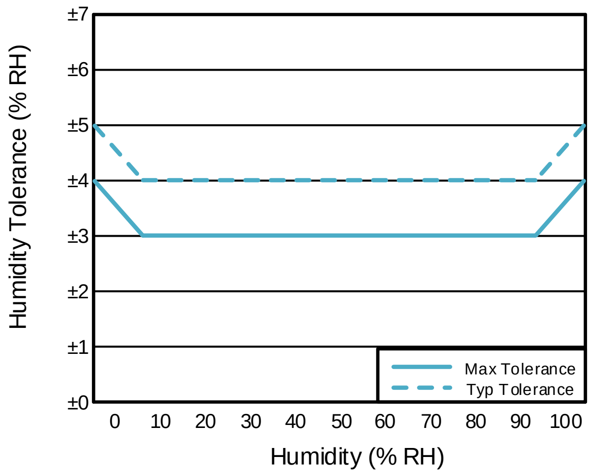


Figure 1. Tolerance of RH @25°C for GD30TSHT30

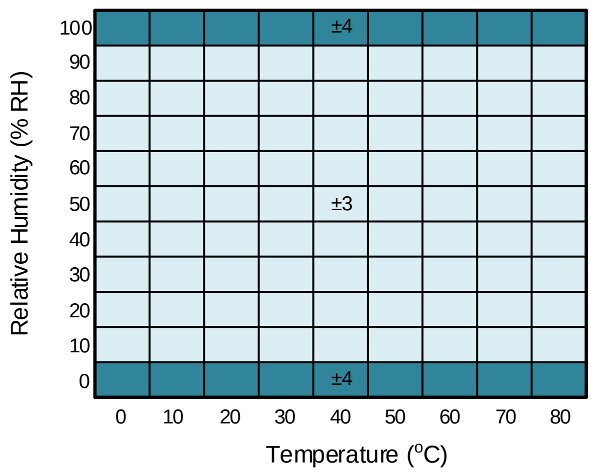


Figure 2. Tolerance of GD30TSHT30 Under Different Temperature Conditions

5.6 Temperature Sensor Characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Operating Range		−45		130	°C
Accuracy	−40°C to 90°C		±0.3		°C
Repeatability Error	Low		0.24		°C
	Medium		0.12		°C
	High		0.06		°C
Resolution	Typ		0.015		°C
Response Time	τ63%		2		second
Long Term Drift	Max			0.03	°C/year

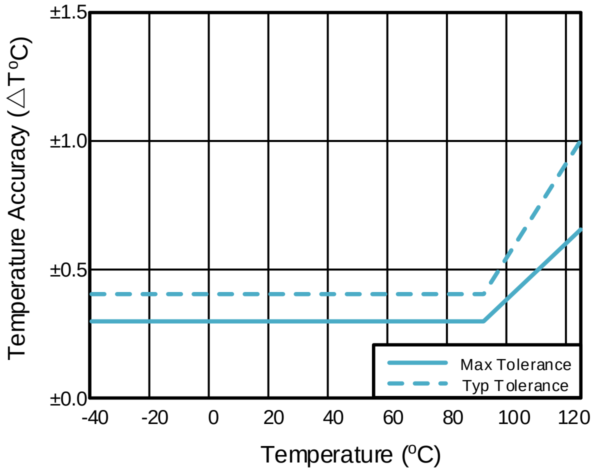


Figure 3. Temperature Accuracy of GD30TSHT30

When operating within the recommended normal temperature and humidity range (5°C to 60°C and 20%RH to 80%RH respectively), the sensor exhibits optimal performance. Long-term exposure to conditions outside the normal range, especially under high humidity for extended periods, may temporarily offset the relative humidity signal. Once back within the normal temperature and humidity range, the sensor will slowly return to its calibrated state on its own.

6 Functional Description

6.1 Block Diagram

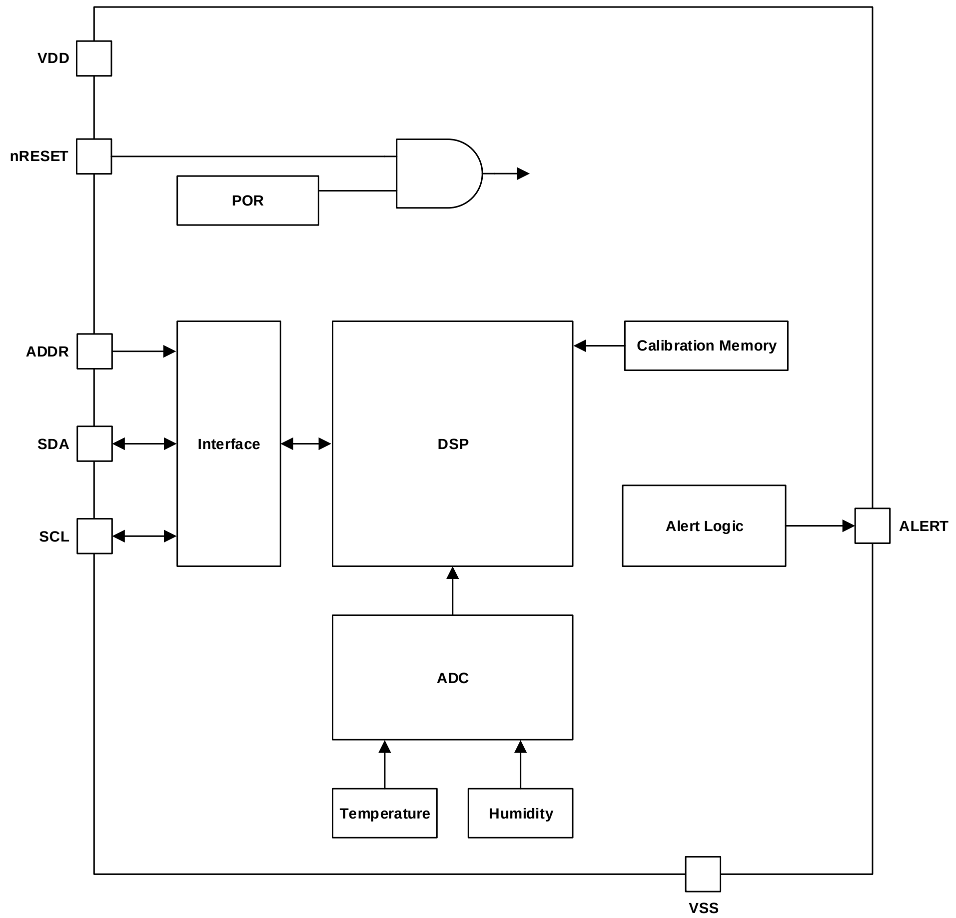


Figure 4. GD30TSHT30 Block Diagram

6.2 Operation

6.2.1 Overview

GD30TSHT30 supports I2C fast mode（up to 1MHz），Clock stretching can be turned on and off by specific commands. For more I2C protocol descriptions, please refer to NXP's I²C Bus Protocol Description.

After each command is sent to the sensor, wait at least 1ms before sending the next command to the sensor. All GD30TSHT30 commands and data are mapped into a 16-bit address space. In addition, all data and commands are protected with a CRC checksum, which is used to enhance the reliability of data transmission. The 16-bit command already contains the CRC check result in the lower three bits. The data sent and received by the sensor needs to be followed by an 8-bit CRC.

When the microcontroller writes data to the sensor, it must be accompanied by a CRC check byte, because GD30TSHT30 only receives data with correct CRC checksum. When reading the data of the sensor, the microcontroller is required to process the CRC check.

6.2.2 Pin Assignment

6.2.2.1 Power Pin (VDD、VSS)

The power supply pins must be decoupled with a 100nF capacitor that shall be placed as closed to the sensor as possible.

6.2.2.2 Serial Clock and Serial Data(SCL, SDA)

SCL is used to synchronize the communication between microcontroller and the sensor. The clock frequency can be freely chosen between 0 to 1MHz. Commands with clock stretching according to I²C Standard are supported.

The SDA pin is used to transfer I²C data. Communication with frequencies up to 400KHz must meet the I²C Fast Mode1 standard. Communication with frequencies up to 1MHz must meet the specification conditions in Figure 5.

Both SCL and SDA are open-drain output pins with reverse-biased diodes connected to VDD and GND. SCL and SDA must be pulled up to VDD by an external resistor. Devices on the I²C bus can only pull the bus down to ground. The pull-up resistors are required to pull the signal high. The recommended pull-up resistor is 4.7K, and resistors with different resistance values need to be selected according to different communication rates. It should be noted that pull-up resistors may be included in some microcontrollers.

6.2.2.3 Thermal Pad

The center pad (thermal pad) is in the middle of the backside of the chip and is internally connected to ground within the sensor chip so there is no need to consider the electrical connection of the center pad. However, based on mechanical stress considerations, the center pad should still be soldered on the PCB.

6.2.2.4 ADDR Pin

The I²C address of the sensor can be changed by changing the connection method of ADDR. When ADDR is connected to a low level, the address of the sensor chip is 0x44, and when ADDR is connected to a high level, the address of the sensor chip is 0x45. It should be noted that the level of ADDR cannot be changed during the communication process. This address selection method can connect two GD30TSHT30s to the same I²C bus.

It should be noted that the I²C address is represented through the 7 MSBs of the I²C read or write header. The LSB of the read-write command header is the read-write indicator bit, 0 for writing and 1 for reading. The pins of ADDR cannot be left floating.

Table 1. I²C device Address

GD30TS002T	I²C ADDRESS in HEX. REPRESENTATION	CONDITION
I²C Address A	0x44(default)	ADDR (pin 7) connected to logic low
I²C Address B	0x45	ADDR (pin 7) connected to logic high

6.2.2.5 Alert Pin

The Alert pin can be connected to the interrupt pin of the microcontroller. The output value of the Alert pin depends on the comparison result between the temperature and humidity value converted by the sensor and the set threshold. Its specific functions are described in the dedicated alarm documentation. This pin needs to be left floating when the alarm function is not used. When the output temperature and humidity value exceed the set threshold range, this pin outputs a high level. It should be noted that this pin can only be connected to the gate of the transistor to switch the transistor.

6.2.2.6 nRESET pin

A reset signal can be given to the sensor through the nRESET pin. The reset signal is active low with a minimum pulse width of 1μs. Its function will be explained in detail in the fourth section. If not used, it is recommended to leave this pin floating or use a resistor greater than 2kΩ to pull this pin up to VDD. In fact, this pin has been pulled up to VDD by a 50kΩ resistor inside the chip.

6.2.3 Power-Up and Communication Start

When the power supply voltage exceeds V_{POR}, the sensor starts powering-up. After reaching this threshold voltage the sensor needs the time t_{PU} to enter idle state. Once in the idle state, the chip is ready to receive commands and data from the microcontroller.

According to the I²C communication protocol, each communication of the sensor chip must start with a START signal and end with a STOP signal. When the sensor is powered up, but not receiving communication or temperature and humidity conversion commands, it automatically enters the idle state, which is convenient for reducing the power consumption. The idle state is determined internally by the chip and is not controlled by the user.

6.2.4 Temperature and Humidity Measurement

To perform temperature and humidity measurement, you need to first send a start signal, then send an I²C write operation header, followed by a 16-bit temperature and humidity conversion command. After receiving each byte of data sent by the host controller, the sensor will pull the SDA bus low to give an ACK signal. The complete process of temperature and humidity measurement and data reading is shown Table 2. After correctly receiving the temperature and humidity conversion command and sending an ACK signal to the microprocessor, the GD30TSHT30 internally starts the conversion measurement of temperature and humidity.

6.2.5 Measurement Commands for Single Shot Data Acquisition Mode

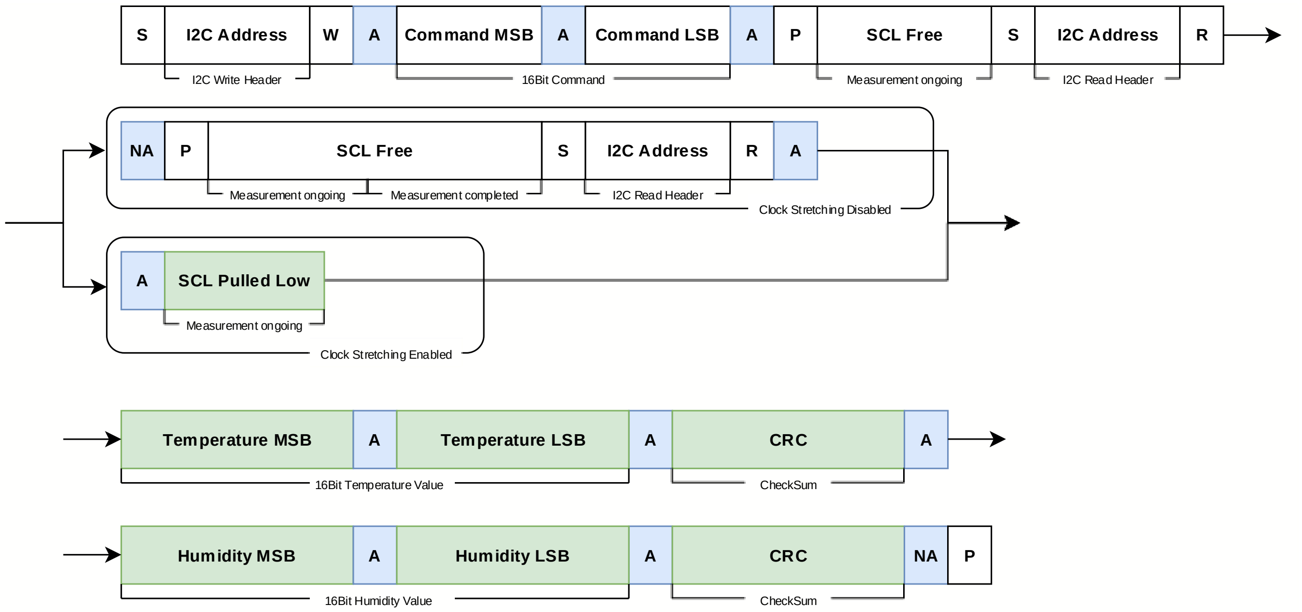
After receiving these commands, the device will enter the single shot data acquisition mode. After completing temperature and humidity conversion, it will store the temperature and humidity data in the interface register and wait for the microcontroller to read the measurement data. Each data pair consists of one 16-bit temperature with 8-bit CRC, followed by one 16-bit humidity data with 8-bit CRC, see section 6.2.5 for details.

In single shot mode different 16-bit measurement commands can be selected, see Table 2 for details. The difference between them is the repeatability and clock stretching (enabled and disabled).

A higher repeatability corresponds to a longer conversion duration, a higher energy consumption, and a higher conversion accuracy.

Table 2. Measurement commands in single shot mode The first SCL idle period indicates a wait time of at least 1ms (Clear blocks are controlled by the microcontroller, grey blocks by the sensor)

CONDITION		HEX CODE	
REPEATABILITY	CLOCK STRETCHING	MSB	LSB
High	enabled	0x2C	06
Medium			0D
Low			10
High	disabled	0x24	00
Medium			0B
Low			16
E.g., 0x2C06: high repeatability, clock stretching enabled.			



1. The first SCL idle period indicates a wait time of at least 1ms (Clear blocks are controlled by the microcontroller, grey blocks by the sensor)

6.2.6 Readout of Measurement Results for Single Shot Mode

In case the user needs the temperature data but does not want to process CRC data, it is recommended to read the two temperature bytes, then the read transfer can be aborted with a with a NACK.

After the sensor completes the temperature and humidity measurement, the master can read the measurement result by sending the START condition followed by an I²C read header. If the temperature and humidity data is ready, the device will send an ACK condition to the master, and then send two bytes of temperature data followed by one byte CRC checksum and two bytes of humidity data followed by one byte CRC checksum.

The master must send ACK condition to each byte of data received, otherwise the device will stop sending data.

The microcontroller should send a NACK and a STOP condition to end this data transmission after receiving the CRC byte of the humidity data, as shown in Table 2.

The I²C master can abort the data transmission with a NACK condition at any time. For example, I²C does not care about the CRC result of the temperature data or does not care about the subsequent humidity data. It can terminate the data transmission after receiving the desired data for saving time.

No Clock Stretching:

If the clock stretching function is disabled, after sending the temperature and humidity conversion command, if the temperature and humidity conversion has not been completed, the temperature and humidity data will be read, and the device will give NACK at this time. Only when the waiting time is long enough to ensure that the temperature and humidity conversion has been completed and then read the data will the device respond.

Clock Stretching On:

When clock stretching is on, regardless of whether the temperature and humidity measurement is completed, as long as the master sends the read data header, the device will give ACK and then pull SCL low. Once the measurement is completed, the SCL bus will be released immediately, and then the device will start sending the measured temperature and humidity data.

6.2.7 Measurement Commands for Periodic Data Acquisition Mode

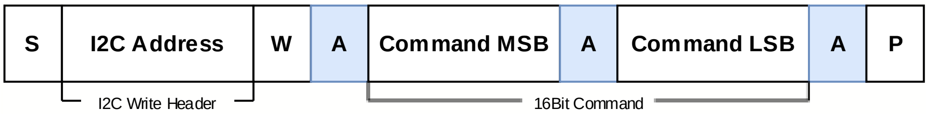
After receiving the command to convert the temperature and humidity periodically, the device will periodically convert the temperature and humidity. Different periodic conversion modes can be selected, as shown in Table 3. The main difference between these commands is the repeatability (high, medium, low) and data acquisition frequency (e.g., 0.5, 1, 2, 4 & 10 measurements per second, mps). Clock stretching cannot be selected in this mode.

The data acquisition frequency and the repeatability setting influence the measurement duration and the power consumption, see *Parameter Information* for details.

Table 3. Measurement Commands for Periodic Data Acquisition Mode

CONDITION		HEX CODE	
REPEATABILITY	**MPS**	**MSB**	**LSB**
High	0.5	0x20	32
Medium			24
Low			2F
High	1	0x21	30
Medium			26
Low			2D
High	2	0x22	36
Medium			20
Low			2B
High	4	0x23	34
Medium			22
Low			29
High	10	0x27	37
Medium			21
Low			2A
E.g. 0x2130: High repeatability mps-measurement per second			

CONDITION		HEX CODE	
REPEATABILITY	MPS	MSB	LSB

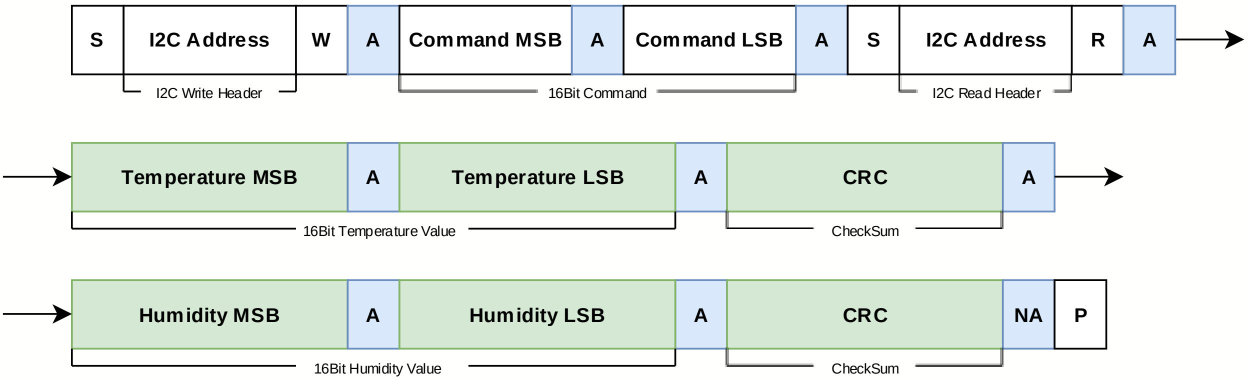


6.2.8 Readout of Measurement Results for Periodic Mode

Transmission of the measurement data can be initiated through the fetch data command shown in Table 4. If no measurement data is present, the I²C read header is responded with a NACK (Bit 9 in Table 4) and the communication stops. If the master reads the temperature and humidity data, the buffer storing the temperature and humidity data will be cleared to zero until the temperature and humidity data obtained by the next measurement is loaded.

Table 4. Readout of Measurement Results for Periodic Mode

COMMAND	HEX CODE
Fetch Data	0xE000



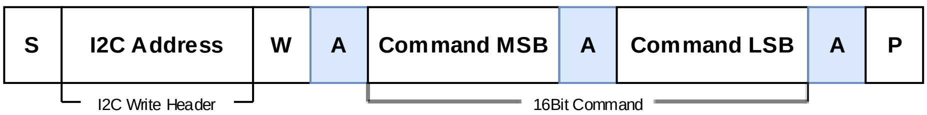
1. Clear blocks are controlled by the microcontroller, grey blocks by the sensor.

6.2.9 Break/Stop Periodic Data Acquisition Mode

The periodic data acquisition mode can be stopped using the break command shown in Table 5. In addition to the command to read the periodic measurement temperature and humidity data, it is recommended to send the command to stop the periodic measurement mode before sending any other commands. After the device receives this command, it will exit the periodic measurement mode and enter the single shot mode after the current measurement is completed. This mode switching time takes 1ms.

Table 5. Readout of Measurement Results for Periodic Mode

COMMAND	HEX CODE
Break	0x3093



1. Clear blocks are controlled by the microcontroller, grey blocks by the sensor.

6.2.10 Reset

The system reset of GD30TSHT30 can be realized by sending a reset command (soft reset) or sending a low-level signal to the nRESET port. In addition, a system reset is generated internally during power-up. It should be noted that the device will not process any commands from the microcontroller during the reset procedure.

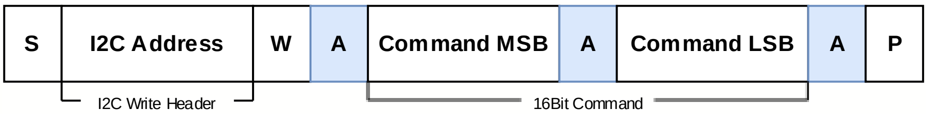
In order to achieve a full reset of the device without removing the power supply, it is recommended to use the nRESET reset pin of the GD30TSHT30.

Soft Reset:

The GD30TSHT30 provides a soft reset mechanism to reset the system to a predefined state without removing the power supply. When the device is in an idle state, a soft reset command can be sent.0 After the device receives the soft reset command, it will reset the internal control module and reload the data in the non-volatile memory. The commands for soft reset are shown in Table 6.

Table 6. Soft Reset Command

COMMAND	HEX CODE
Soft Reset	0x30A2



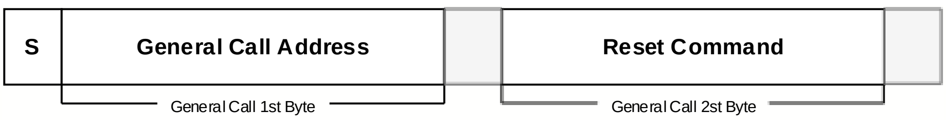
1. Clear blocks are controlled by the microcontroller, grey blocks by the sensor.

Reset through General Call:

In addition, the device can be reset through the "general call" according to I²C-bus specification. This generates a reset which is functionally identical to using the nRESET pin. It should be noted that a reset generated in this way is not device specific. See Table 7 for General Call commands.

Table 7. General Call Reset

COMMAND	HEX CODE
Address byte	0x00
Second byte	0x06
Reset command using the general call address	0x0006



1. Clear blocks are controlled by the microcontroller, grey blocks by the sensor.

Reset through the nReset Pin:

Pulling the nReset pin low generates a similar reset to a power-on reset. The nReset pin is internally connected to VDD through a pull-up resistor, so it is active low. The nReset pin has to be pulled low for at least 1μs.

Hard reset:

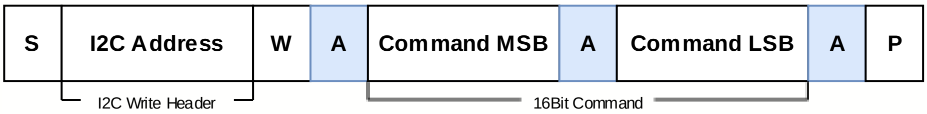
A hard reset is achieved by powering down the chip and then powering it back on. In order to prevent powering the sensor over the ESD diodes, the voltages on SDA and SCL should also be removed.

6.2.11 Heater

The GD30TSHT30 is equipped with a heater inside. When the heater is turned on, the temperature of the device will increase, but the temperature range is fixed. This heater can be switched on and off with the corresponding commands (as shown in Table 8). The on/off status of the heater is also reflected in the internal status register.

Table 8. Heater Command

COMMAND	HEX CODE	
	MSB	LSB
Heater Enable	0x30	6D
Heater Disabled		66



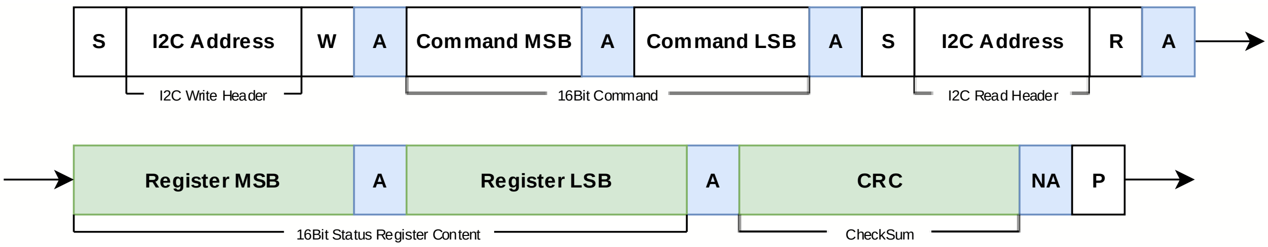
1. Clear blocks are controlled by microcontroller, grey blocks by the sensor.

6.2.12 Status Register

The status register contains heater status, alarm information, reset information, CRC check information, and command execution status. The command to read out the status register is shown in Table 9 whereas a description of the content can be seen in Table 10.

Table 9. Command to Read the Status Register

COMMAND	HEX CODE
Read Out of status register	0XF32D



1. Clear blocks are controlled by microcontroller, grey blocks by the sensor.

Table 10. Description of the Status Register

Bit	FIELD DESCRIPTION	DEFAULT
15	Alert status '0': no pending alerts '1': at least one pending alert	‘0’
14	Reserved	‘0’

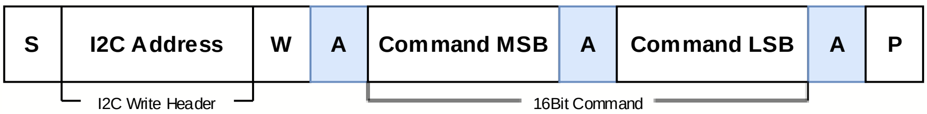
Bit	FIELD DESCRIPTION	DEFAULT
13	Heater status '0' : Heater off '1' : Heater on	'0'
12	Reserved	'0'
11	Humidity tracking alert '0' : No alert '1' : Alert	'0
10	Temperature tracking alert '0' : No alert '1' : Alert	'0'
9:5	Reserved	'xxxxx'
4	System reset detected '0': no reset detected since last 'clear status register' command '1': reset detected (soft reset, hard reset, nReset reset)	'1'
3:2	Reserved	'00'
1	Command execution status '0': last command executed successfully '1': last command not processed (An incorrect command was sent)	'0'
0	Write data CRC checksum status '0': checksum of last write transfer was correct '1': checksum of last write transfer failed	'0'

Clear status register

All flag bits (Bit15, 11, 10, 4) of the internal register can be cleared by sending commands shown in Table 11.

Table 11. Command to Clear the Status Register

COMMAND	HEX CODE
Clear status register	0x3041



1. Clear blocks are controlled by microcontroller, grey blocks by the sensor.

6.2.13 CRC Checksum

The CRC check algorithm for data transmission is shown in Table 12. The CRC check object is the 2 bytes of data transmitted before it.

Table 12. I²C CRC8 properties

PROPERTY	VALUE
Name	CRC-8
Width	8 bit
Protected data	Read and/or write data
Polynomial	0X31(x8 + x5 + x4 + 1)
Initialization	0xFF
Reflect input	False
Reflect output	False
Final XOR	0x00
Examples	CRC(0xBEEF) = 0x92

6.2.14 Conversion of Signal Output

The output temperature and humidity data are 16-bit unsigned data. These data have been linearized and compensated for temperature. Converting these raw values into real temperature and humidity data can be achieved using the following formulas:

Relative humidity conversion formula (result in %RH):

$$RH = 100 \times \frac{S_{RH}}{2^{16} - 1}$$

Temperature conversion formula (result in °C & °F):

$$T\left[{}^{\circ}C\right] = -45 + 175 \times \frac{S_T}{2^{16} - 1}$$

$$T\left[{}^{\circ}C\right] = -49 + 315 \times \frac{S_T}{2^{16} - 1}$$

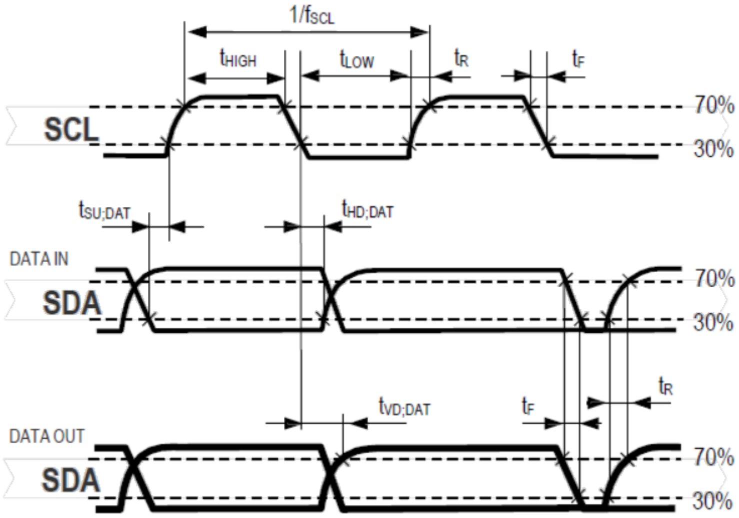
S_{RH} and S_T represent the raw sensor output for humidity and temperature, respectively. Note that S_{RH} and S_T must be converted to decimal representation in formula calculations.

6.2.15 Communication Timing

Table 13. Communication timing specifications for I²C

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
f_{SCL}	SCL clock frequency		0		1000	kHz
$t_{HD;STA}$	Hold time (repeated) START condition	After this period, the firstclock pulse is generated	0.24			μs
t_{LOW}	LOW period of the SCL clock		0.65			μs
t_{HIGH}	HIGH period of the SCL clock		0.26			ns
t_{HDDAT}	SDA hold time	Transmitting data	60		250	ns
		Receiving data	0			ns
t_{SUDAT}	SDA set-up time		100			ns
t_R	SCL/SDA rise time				300	ns
t_F	SCL/SDA fall time				300	ns
$t_{VD,DAT}$	SDA valid time				0.9	μs
$t_{SU;STA}$	Set-up time for a repeated START condition		0.6			μs
$t_{SU;STO}$	Set-up time for STOP condition		0.6			μs
CB	Capacitive load on bus line				400	pF
V_{IL}	Low level input voltage		0		0.3 x VDD	V
V_{IH}	High level input voltage		0.7 x VDD		1 x VDD	V
V_{OL}	Low level output voltage	3 mA sink current			0.66	V

1. Temperature range T=−40°C to 125°C，Voltage range VDD = VDDmin to VDDmax.



1. SDA directions are seen from the sensor. Bold SDA lines are controlled by the sensor, plain SDA lines are controlled by the micro-controller. Note that SDA valid read time is triggered by falling edge of preceding toggle

Figure 5. Timing Diagram for Digital Input/Output Pads

7 Application Information

The GD30TSHT30 is a single-chip integrated temperature and humidity sensor with a wide supply voltage range, supporting I2C communication. The typical application circuit is as follows.

7.1 Typical Application Circuit

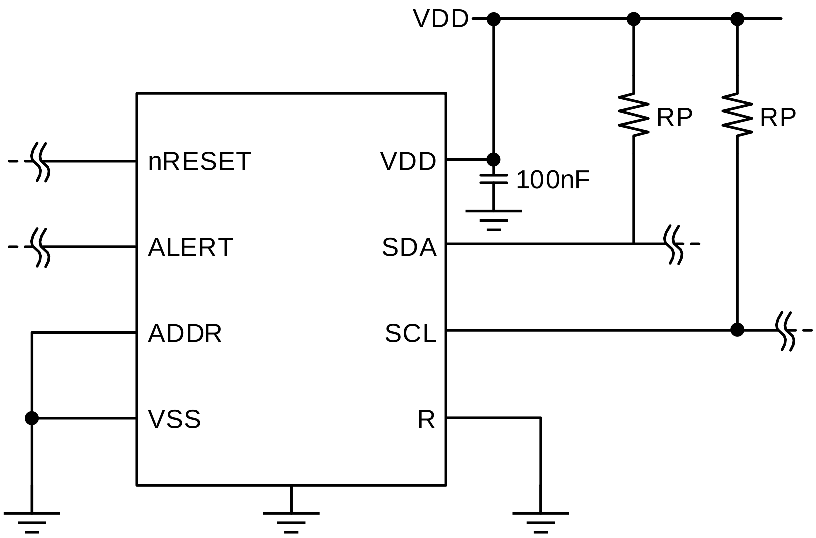
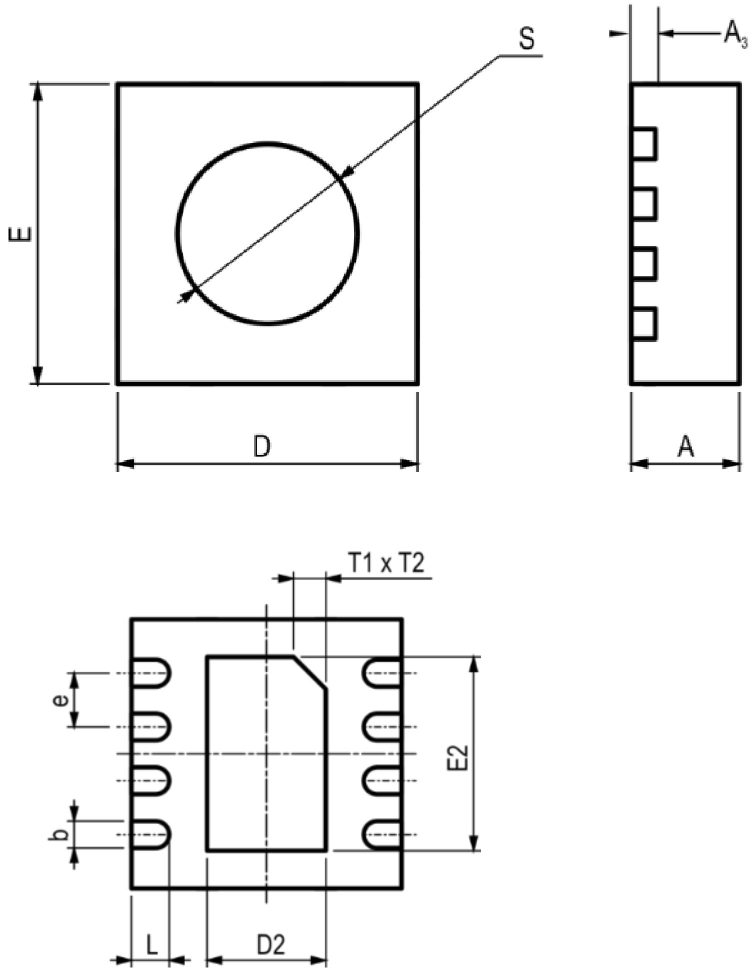


Figure 6. GD30TSHT30 Reference Circuit

8 Package Information

8.1 Outline Dimension

DFN-8 Package Outline



NOTES:

1. All dimensions are in millimeters.
2. Package dimensions does not include mold flash, protrusions, or gate burrs.
3. Refer to the *Table 14. DFN-8 dimensions(mm)*.

Table 14. DFN-8 dimensions(mm)

SYMBOL	MIN	NOM	MAX
A	0.8	0.9	1
A3		0.2	
b	0.2	0.25	0.3
D	2.4	2.5	2.6
D2	1	1.1	1.2
E	2.4	2.5	2.6
E2	1.7	1.8	1.9
e		0.5	
L	0.25	0.35	0.45
S		1	1.5
T1xT2		0.3x0.45°	

9 Ordering Information

Ordering Code	Package Type	ECO Plan	Packing Type	MOQ	OP Temp(°C)
GD30TSHT30WETR-I	DFN-8	Green	Tape & Reel	2000	−40°C to +130°C
GD30TSHT30WETC-I	DFN-8	Green	Tape & Reel	2000	−40°C to +130°C

1. GD30TSHT30WETC-I chip comes with a dust-proof breathable membrane.

10 Revision History

REVISION NUMBER	DESCRIPTION	DATE
1.0	Initial release and device details	2024
1.1	Version upgrade	2025

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