

SHT21

V+ : red read user register → cmd 0xE7

V- : black User register = 0x3A

SDA : green 00111010

SCL : yellow

00 measurement res. $\frac{V_h}{12\text{bit} / 14\text{bit}}$

01 VDD > 2.25V

111 reserved

0 On-chip heater

1 disable OTP reload

SHT20 : low cost DFN : dual-flat-no-leads

SHT21 : standard 3 x 3 x 1.1 mm³

SHT25 : high-end

calibrated

open cavity mold package linearized

capacitive humidity sensor °C format

band-gap temp. sensor

electronic identification code

stored on chip

SHT21 I2Y, RH ±0.3% → amplifier

→ A/D converter

RoHS and WEEE → OTP memory

Restriction of Hazardous Substances → digital processing unit

(Pb, Hg, Cd),...

Waste Electrical and Electronic Equipment directive (2002)

- ① graph sht21 with reference sensor.
- ② how sht21 operates
- ③ how i2c operates (C + gpio pullup)

SHT21

Resolution	12 bit	0.04	% RH
	8 bit	0.7	% RH

Response time 8s

T 63%

Resolution	14 bit	0.01	°C
	12 bit	0.04	°C

Response time 5 → 30s

T 63%

	measuring	sleep
supply current	0.3mA 200µA	0.15µA
power dissipation	0.9mW	0.5µW

heater 5.5mW $\Delta T = +0.5 \rightarrow 1.5^\circ\text{C}$