



1. Description

The C3348 is a digital clinical thermometer for measuring body temperature.

It provide the following functions :

- a. or display mode.
- b. Long measured time for 16 sec or short measured time for 4 sec.
- c. Alarm warning for fever.
- d. Auto power OFF.

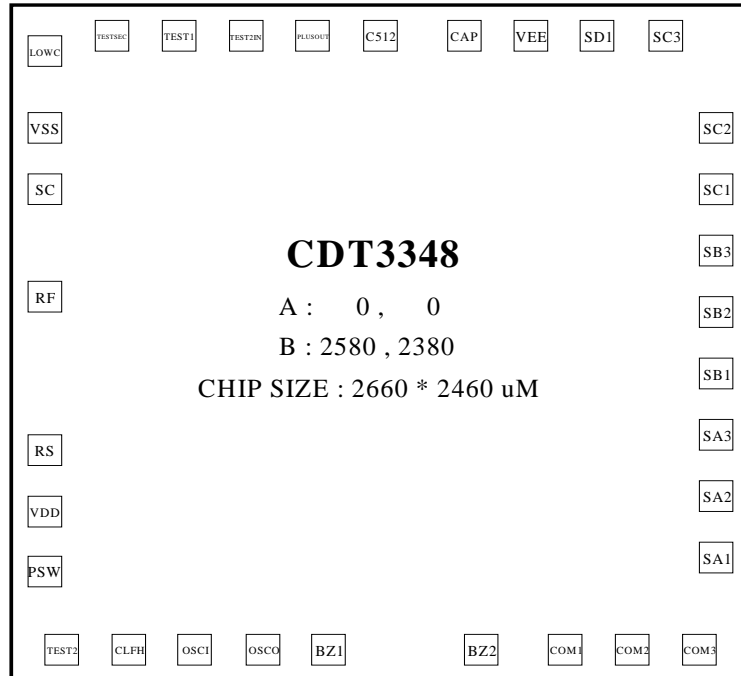
2. Features

- CMOS process --- lower power consumption.
- Single 1.5V battery operation.
- Bonding option for / measurement.
- Range of temperature for measurement : +32.0 ~ +42.0 (+90.0 ~ +108.0)
- Resolution of measured temperature : 0.1 (0.1)
- Accuracy of measured temperature : ± 0.1 (± 0.2)
- Bonding option for measured time : 4sec / 16sec
- Single push button for ON/OFF.
- Holding highest temperature.
- Alarm warning for fever.
- Display the previous measured temperature after power on.
- Auto power off after 8 minutes 40 sec.
- Buzzer alarms for power turn on and off.

3. Applications

- Clinical Thermometer

4. Pad Assignment



Chip Size = 2660 * 2460 um

Note : The IC substrate should be connect to VDD

5. Pad Coordinate (Unit: μ m)

	PAD	X	Y
1	LOWC	125	2224
2	VSS	125	1975
3	SC	125	1763
4	RF	125	1389
5	RS	125	814
6	VDD	125	602
7	PSW	125	390
8	TEST2	166	125
9	CLFH	411	125
10	OSCI	623	125
11	OSCO	868	125
12	BZ1	1100	125
13	BZ2	1623	125
14	COM1	1924	125
15	COM2	2166	125

16	COM3	2408	125
17	SA1	2455	440
18	SA2	2455	657
19	SA3	2455	884
20	SB1	2455	1101
21	SB2	2455	1328
22	SB3	2455	1545
23	SC1	2455	1772
24	SC2	2455	1989
25	SC3	2313	2255
26	SD1	2096	2255
27	VEE	1870	2255
28	CAP	1628	2255
29	C512	1356	2255
30	PLUSOUT	1124	2255
31	TEST2IN	886	2255
32	TEST1	641	2255
33	TESTSEC	396	2255

6.Pin Descriptions

Name	I/O	Description
LOWC	B	When connect to VSS with resistor, supply voltage detected.
VSS	P	Ground Pin
SC	B	For reference and sensor resistor common point.
RF	O	For reference resistor to generate reference clock.
RS	O	For sensor resistor to generate sensor clock.
VDD	P	Supply Voltage Pin
PSW	I	Pull-low, for power ON/OFF switching.
TEST2	I	Connect to VDD, LCD displays the highest value, floating this pin, LCD displays real time temperature for production.
CLFH	I	Connect to VDD for , floating for .
OSCI	I	System oscillator in.
OSCO	O	System oscillator out.
BZ1	O	Buzzer output 1.
BZ2	O	Buzzer output 2.
COM1	O	For LCD common pin output.
COM2	O	For LCD common pin output.
COM3	O	For LCD common pin output.

SA1	O	For LCD segment drive.
SA2	O	For LCD segment drive.
SA3	O	For LCD segment drive.
SB1	O	For LCD common pin output.
SB2	O	For LCD segment drive.
SB3	O	For LCD segment drive.
SC1	O	For LCD segment drive.
SC2	O	For LCD segment drive.
SC3	O	For LCD segment drive.
SD1	O	For LCD segment drive.
VEE	O	Negative voltage for LCD.
CAP	O	For negative voltage generator.
C512	O	For negative voltage generator.
PLUSOUT	O	Test pin.
TEST2IN	I	Test ping.
TEST1	I	Test ping.
TESTSEC	I	Floating for 16 sec measurement, VDD for 4 sec measurement.

7. Absolute Maximum Ratings

- Supply Voltage ----- - 0.3V to 3.0V
- Input Voltage ----- V_{SS}-0.3 to V_{DD}+0.3
- Operating Temperature ----- 0 to 70
- Storage Temperature----- - 50 to 125

* Note : Stresses above those listed may cause permanent damage to the device

8. Electrical Characteristics

(V_{DD}=1.5V, T_A = 25 , unless otherwise specified)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V _{DD}	Supply Voltage		1.3	1.5	1.7	V
I _{DD}	Operating Current	@V _{DD} =1.5V,no load		60	100	μ A
I _{STB}	Standby Current	@V _{DD} =1.5V			1.0	μ A
FOSC	System oscillator frequency	@V _{DD} =1.5V, R _{osc} = 910K		33	40	KHz
I _{BZ1}	Buzzer output current	@V _{DD} =1.5V, V _{OH} = 1V	10	12	14	mA
I _{BZ2}	Buzzer output current	@V _{DD} =1.5V, V _{OH} = 1V	10	12	14	mA
LOWC	Low power supply detected	@V _{DD} =1.5V	1.20		1.35	V
T _A	Ambient Temperature		0		70	

9. Function Description:

1. Push psw button to turn power on or off.

2. When push psw to turn power on.

buzzer will generate a “beep” sound for 0.125 sec.

After “beep”, the sequential action as following steps.

Step1 : display all segments on for 2 sec.

Step2 : After step1, then display the last time measured temperature for 2 sec.

Step3 : Display or for 0.75 sec.

Step4 : or mark will flash at speed of 1Hz and start to measure and display temperature.

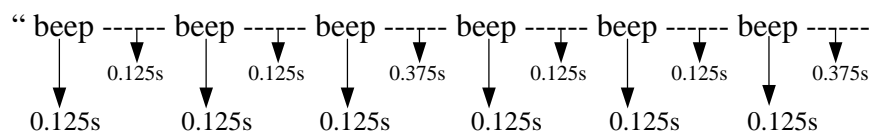
Step5 : If the temperature is less than 32 (or 90), the display will show L or L .

Step6 : If the temperature is large than 42 (or 108), the display will show H or H .

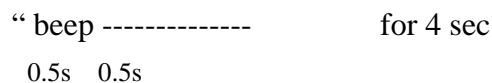
Step7 : LCD display always shows the highest temperature during the temperature measurement.

Step8 : If the measured temperature does not change for more than 16 sec (or 4 sec), the measurement will stop and (or) mark will cease flash.

Step9 : When end of measured temperature, if the temperature is large than 37.5 (99.5) the buzzer will alarms :



for 4 sec, if the temperature is less than 37.6 (or 99.6) the buzzer will alarms as follows :



Step10 : When end of measurement, and if the temperature rises in 8 minutes 40 sec, the (or) mark will flash again (repeat from step 4, and the counter of 8 minutes 40 sec will start to count again from zero.

Step11 : When measured temperature does not change for 8 minutes 40 sec, the Power will turn off automaticlly.

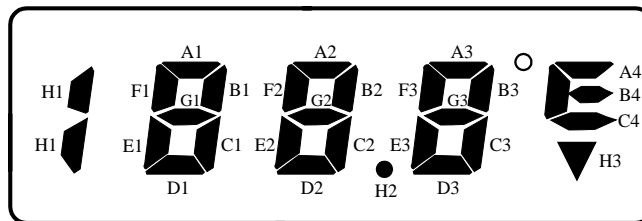
Step12 : The temperature does not measure during beep alarm.

Step13 : When battery voltage is low, the battery mark ▽ will flashes at the speed of 1Hz, and the measured temperature may not be accurate.

The low voltage detect : $1.35 \pm 0.05V$

3. Bonding option for .
4. Bonding option for time of measured temperature for 4 sec or 16 sec.
5. Sensor use 503ET.
6. Reference resistor is the value of sensor at 37.0 .
7. During the process of mass production, in order to adjust the reference resistance (RF), let test 2 be floating, the LCD will display the real present temperature not always show the highest temperature of measurement.

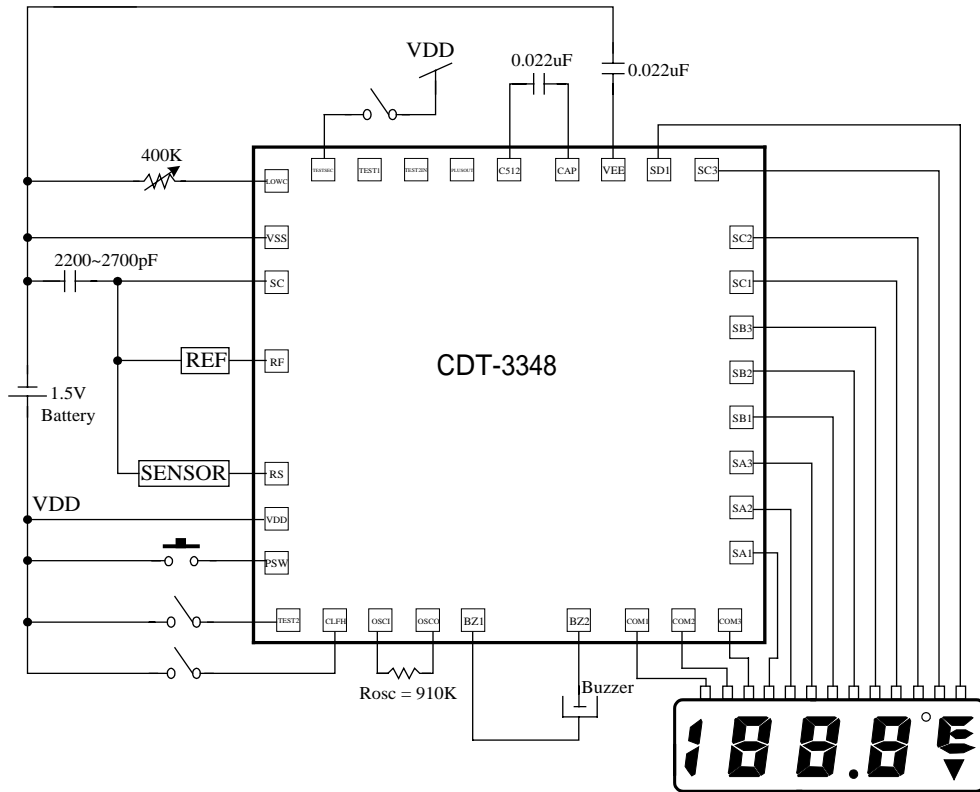
LCD Electrode Pattern :



	SA1	SA2	SA3	SB1	SB2	SB3	SC1	SC2	SC3	SD1
COM1	F1	A1	B1	F2	A2	B2	F3	A3	B3	A4
COM2	E1	G1	C1	E2	G2	C2	E3	G3	C3	B4
COM3	H1	D1	-	-	D2	H2	-	D3	H3	C4

Note. 1/3 duty, 1/2 bias (LCD uses 3V)

10. Application Circuit:



* CDT assumes no responsibility for the use of the specification described. CDT reserves the right to modify the product specification without notice. (以上規格僅供參考，本公司得逕行修正，不另通知)