

单温度 IC

产 品 规 格 书

1. DESCRIPTION

The is a CMOS integrated circuit provided with digital thermometer function. Temperature reading from -50°C to $+50^{\circ}\text{C}$ (-57°F ~ $+122^{\circ}\text{F}$) is detected by use of a thermistor as a sensor and temperature is displayed on a 4 digit LCD by 0.2°C step. High accuracy is obtained by providing non-linear correction circuit for thermistor inside the IC.

1.1 FEATURES

- Measurement accuracy: $\pm 1^{\circ}\text{C}$
- Resolution : 0.2°C ($^{\circ}\text{F}$)
- 4 digits, $1/2$ duty LCD
- Low power consumption
- Few external components
- Easiness in adjustment
- Single 1.5V battery operation
- Bare chip is available

1.2 FUNCTIONS

- Measurable temperature range : -49°C ~ $+49.8^{\circ}\text{C}$
 -57°F ~ $+121.8^{\circ}\text{F}$
- Suitable Thermistor $R_T=10\text{k}\Omega \pm 1\%$ (at 25°C)
- Sampling Cycle selectable: 2 or 10 seconds (Default 10 sec)
- On chip oscillator
- Temperature adjustment: Adjustment of temperature is made by adjusting fundamental resistance against dispersion in resistance values of thermistors

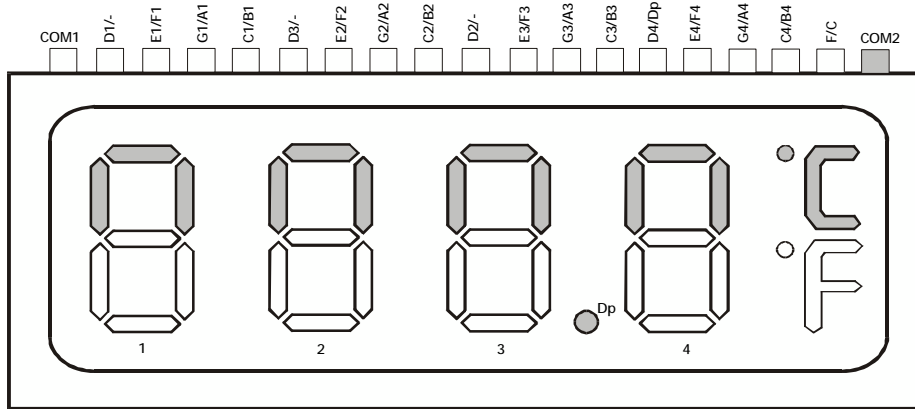
2. ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage (V_{CC})	V_{CC}	- 0.1 ~ + 3.0	V
Operating Temperature Range	T_{opr}	- 50 ~ + 50	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	- 50 ~ + 125	$^{\circ}\text{C}$

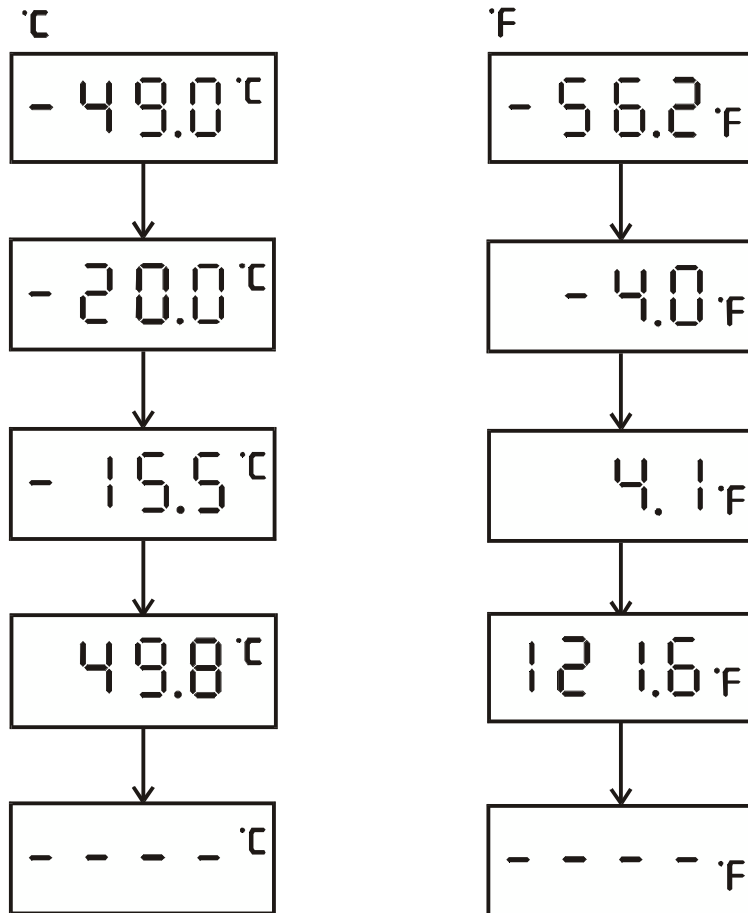
3. ELECTRICAL CHARACTERISTICS ($T_a = 25^{\circ}\text{C}$, $V_{SS} = 0\text{V}$, $V_{CC} = 1.5\text{V}$ unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Operating Voltage	VCC		1.20	1.50	2.00	V
Display Voltage	VDD			3.00		V
Supply Current	ICC	Measuring ($t_M=0.1$ sec)		50	80	μA
	ISTD	Operating		5	10	μA

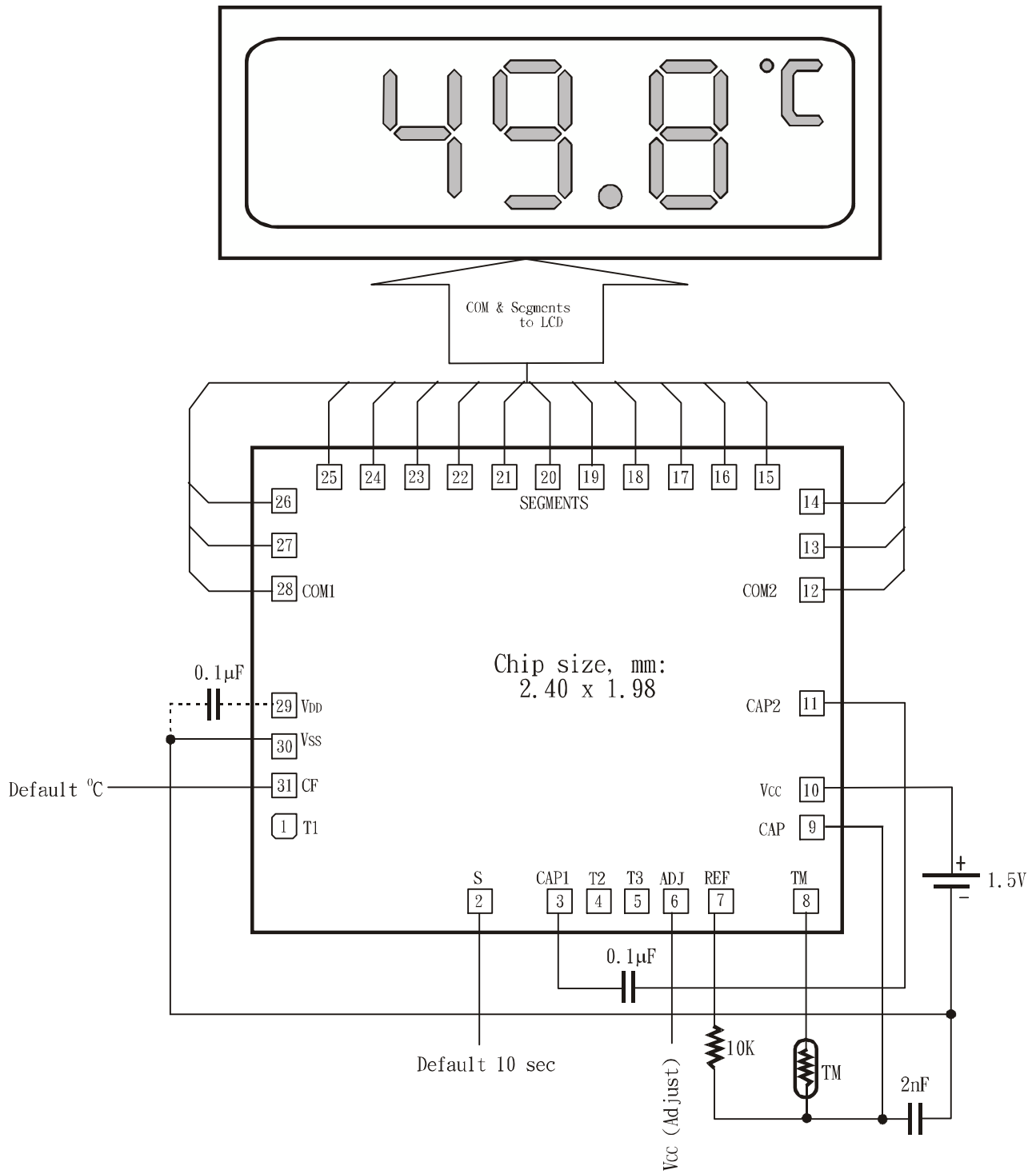
4. LCD FORMAT



5. DISPLAY FORMAT

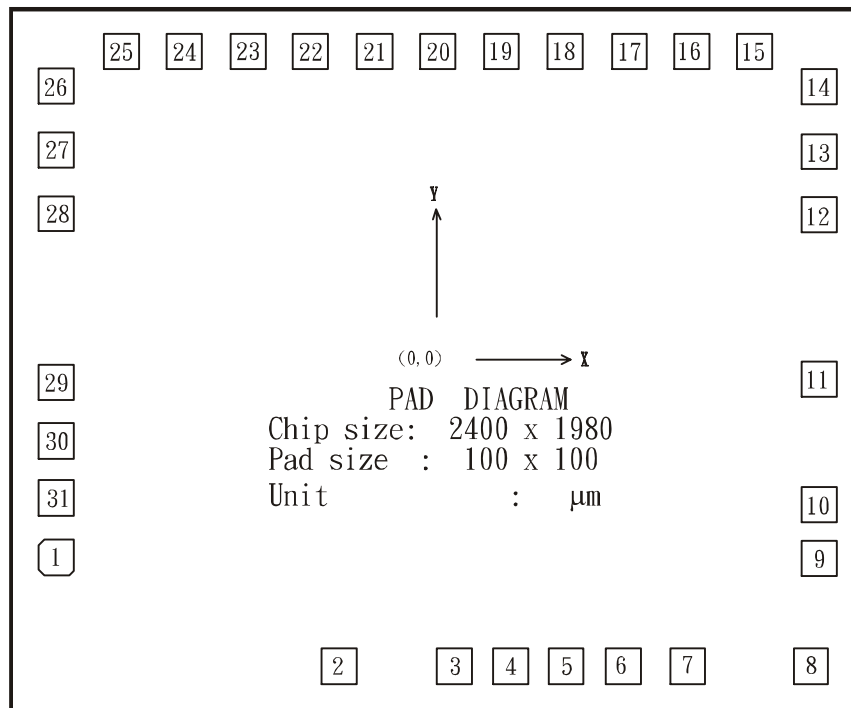


6. APPLICATION CIRCUIT



NOTE: The substrate is connected to V_{SS}

7. PAD DIAGRAM



NOTE: The substrate is connected to V_{SS}

8. PAD ASSIGNMENT

Pad No.	Signal	Description	X	Y	Pad No.	Signal	Description	X	Y
1	T1	Test input	-1070	-556	17	D4/Dp	LCD segment drive	544	869
2	S	Pad option: when it connects to V_{SS} or default, the sampling cycle is 10 sec; when this pad connects to V_{CC} , the sampling cycle is 2 sec	-270	-860	18	C3/B3	LCD segment drive	364	869
3	CAP1	Booster capacitor	52	-860	19	G3/A3	LCD segment drive	184	869
4	T2	Test input	212	-860	20	E3/F3	LCD segment drive	4	869
5	T3	Test input	367	-860	21	D2/-	LCD segment drive	-176	869
6	ADJ	Adjust the fixed temperature (active high)	527	-860	22	C2/B2	LCD segment drive	-355	869
7	REF	Terminal for temperature detection	710	-860	23	G2/A2	LCD segment drive	-531	869
8	TM	Terminal for temperature detection	1054	-860	24	E2/F2	LCD segment drive	-709	869
9	CAP	Terminal for temperature detection	1079	-561	25	D3/-	LCD segment drive	-888	869
10	V_{CC}	Supply voltage	1079	-404	26	C1/B1	LCD segment drive	-1070	767
11	CAP2	Booster capacitor	1079	-78	27	G1/A1	LCD segment drive	-1070	592
12	COM2	LCD common drive	1079	407	28	COM1	LCD common drive	-1070	412
13	F/C	LCD segment drive	1079	587	29	V_{DD}	LCD supply voltage	-1070	-63
14	C4/B4	LCD segment drive	1079	767	30	V_{SS}	GND	-1070	-228
15	G4/A4	LCD segment drive	899	869	31	CF	$^{\circ}\text{C}/^{\circ}\text{F}$ Terminal, default (V_{SS}) select $^{\circ}\text{C}$	-1070	-388
16	E4/F4	LCD segment drive	724	869					