



深圳市晶峰达电子科技有限公司

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DL6122 单温度 IC

产 品 规 格 书

1. DESCRIPTION

The DL6122 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, $\frac{1}{2}$ 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

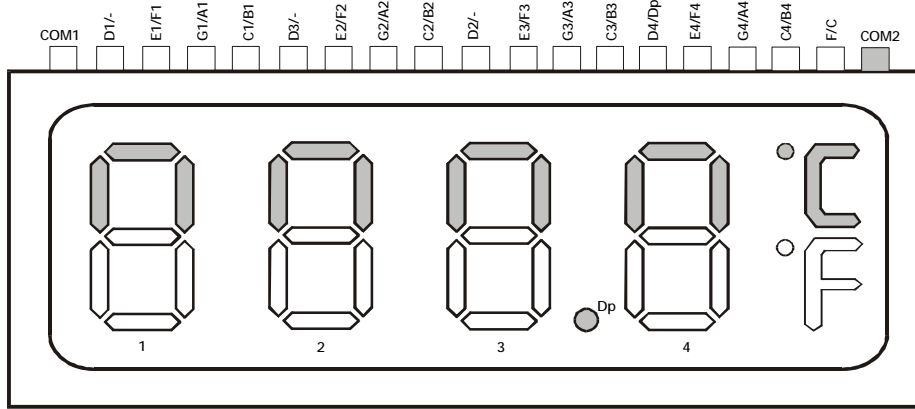
2. ABSOLUTE MAXIMUM RATINGS

| 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 | $^{\circ}\text{C}$ |

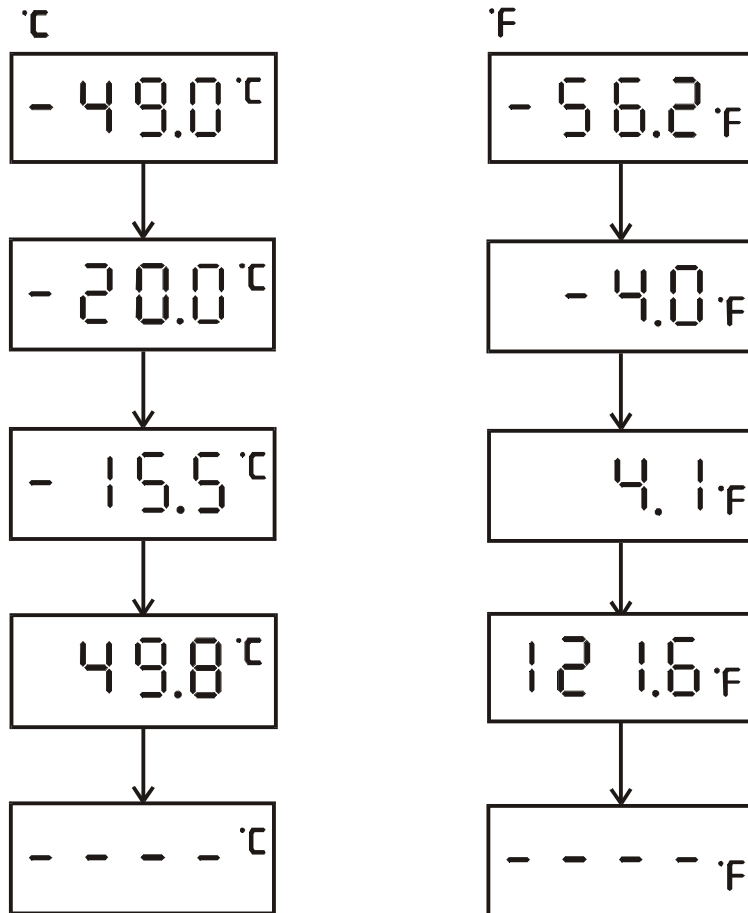
3. ELECTRICAL CHARACTERISTICS ($T_a = 25^{\circ}\text{C}$, $V_{SS} = 0\text{V}$, $V_{CC} = 1.5\text{V}$ unless otherwise specified)

| 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 |

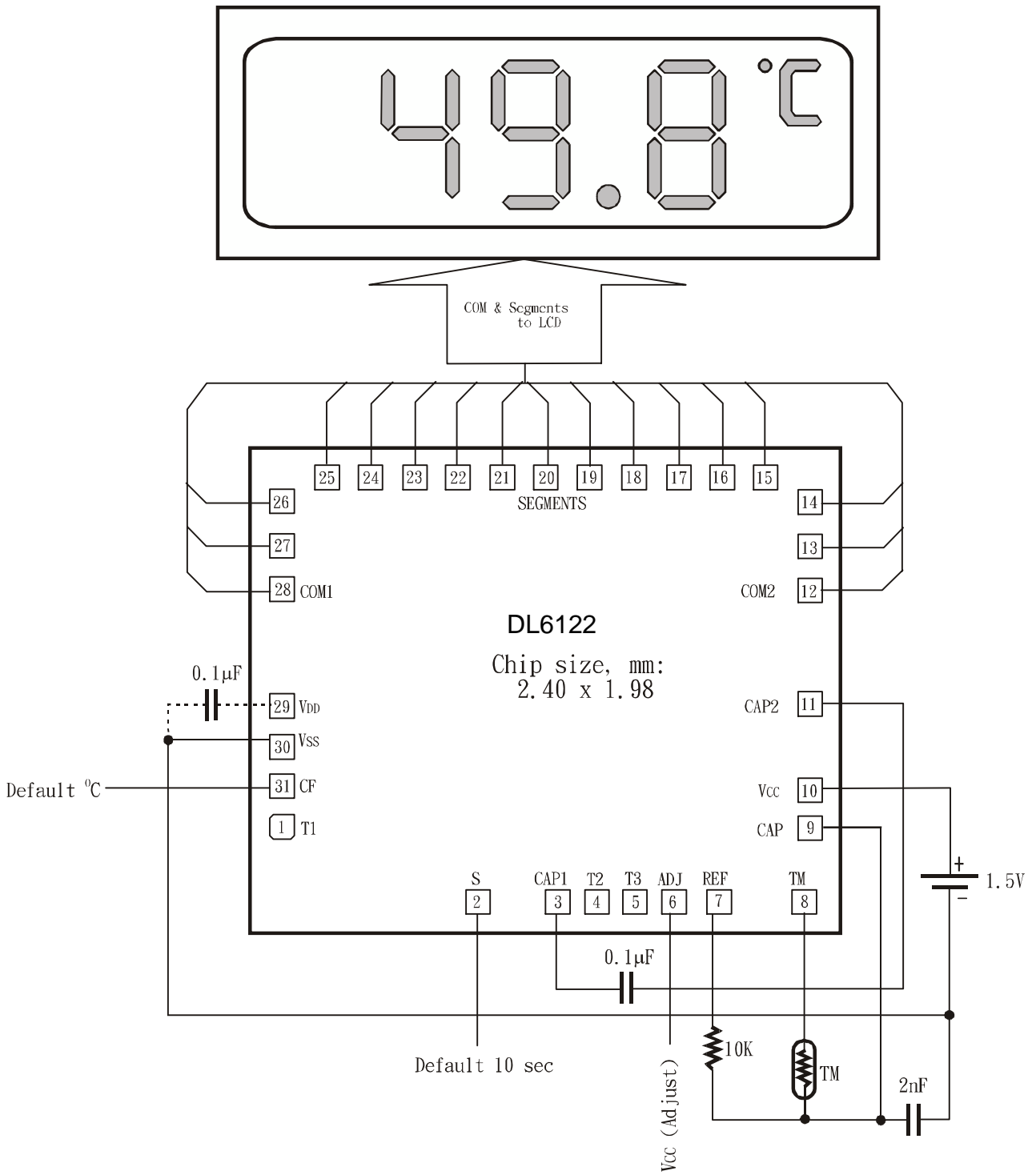
4. LCD FORMAT



5. DISPLAY FORMAT

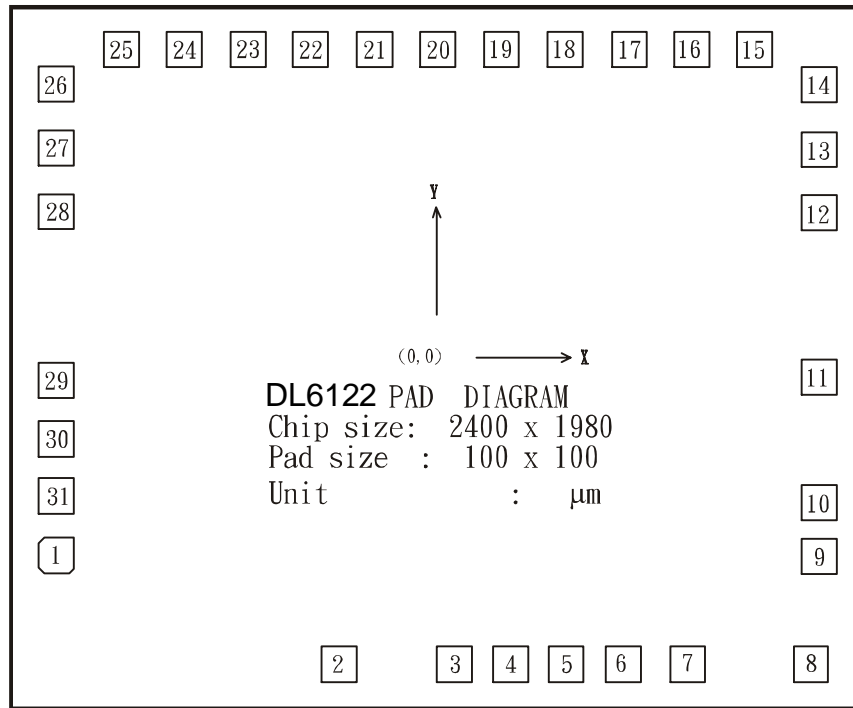


6. APPLICATION CIRCUIT



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 | °C/°F Terminal, default (V _{SS}) select °C | -1070 | -388 |
| 16 | E4/F4 | LCD segment drive | 724 | 869 | | | | | |