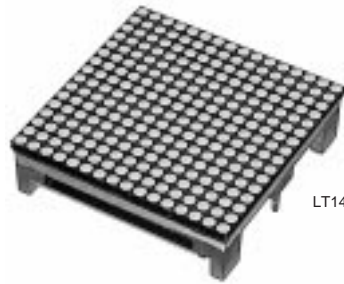


Dot Matrix LED Unit for Indoor Use LT1451ED(Chip On Board Type)

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■ Features

- No. of dots : 16X16dots
- Outline dimensions : 96X96mm
- Dot size : φ5.0mm
- Dot pitch : 6.0mm
- Radiation color : Yellow-green+Red(dichromatic type)
- Driving method : 1/16 duty dynamic drive



LT1451ED

■ Absolute Maximum Ratings

(Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|-------------------------|------------------|------------------------------|------|
| Supply voltage for IC | VCC | -0.3 to +6.0 | V |
| Supply voltage for LED | VLED | -0.3 to +6.0 | V |
| Input voltage | V _I | -0.3 to V _{CC} +0.3 | V |
| LED current dissipation | I _{LED} | | A |
| Turn-on time | t _{ON} | 1 | ms |
| Operating temperature | T _{opr} | -10 to +45 | °C |
| Storage temperature | T _{stg} | -20 to +70 | °C |
| Power dissipation | P | 13 | W |

■ Optical Characteristics

(V_{CC}=5V, V_{LED}=5V, Ta=25°C)

| Parameter | Symbol | TYP. | Unit |
|--------------------------|-------------------|------|-------------------|
| Luminance | Red | 100 | cd/m ² |
| | Yellow-green | 100 | |
| Viewing angle | 2θ _{1/2} | 70 | ° |
| Peak emission wavelength | Red | 635 | nm |
| | Yellow-green | 565 | |

■ Terminal Functions

| Connector | Symbol | Function |
|---------------------|----------|--|
| Power supply (CN1) | VLED | Supply voltage for LED (+5V) |
| | VCC | Supply voltage for IC (+5V) |
| | GND1 | Ground for IC |
| | GND2 | Ground for LED |
| Input signal (CN2) | A0 to A3 | Address specification signal for row driver |
| | RDATA | Serial data input for red (H=ON, L=OFF) |
| | GDATA | Serial data input for yellow-green (H=ON, L=OFF) |
| | LATCH | Latch signal of display data. H: Serial data is converted to parallel data. L: Contents are latched. |
| | ENABLE | Controls ON/OFF of LED (H: LED OFF) |
| | CLOCK | Clock signal for data transmission in the shift-register. (L→H: serial data is shifted.) |
| | GND1 | Ground for signal |
| Output signal (CN3) | A0 to A3 | Buffered input signal |
| | RDATA | Input signal generated through 16-bit shift register or buffer |
| | GDATA | Input signal generated through 16-bit shift register or buffer |
| | LATCH | Buffered input signal |
| | ENABLE | Buffered input signal |
| | CLOCK | Buffered input signal |
| | GND1 | Ground for signal |

Each signal is used as input signal for next unit.

* As for the terminal number, refer to the outline dimensions.

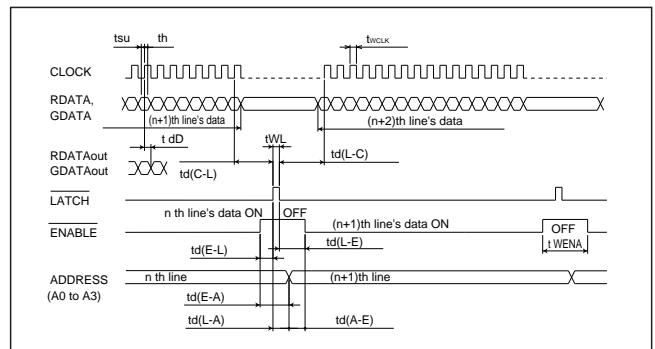
■ Electrical Characteristics

(V_{CC}=5V, V_{LED}=5V, Ta=25°C)

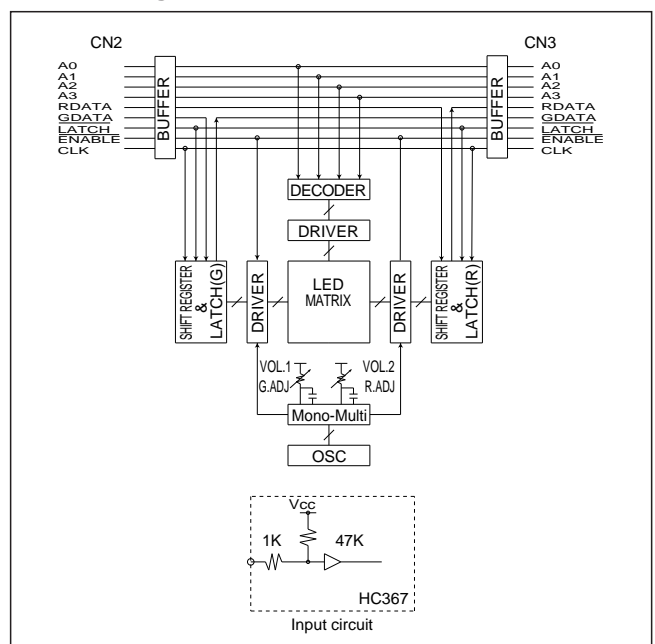
| Parameter | Symbol | MIN. | TYP. | MAX. | Unit |
|---------------------------|------------------|------|------|------|------|
| Supply voltage for IC | VCC | 4.75 | 5.0 | 5.25 | V |
| Supply voltage for LED | VLED | 4.5 | 5.0 | 5.25 | V |
| IC current dissipation*1 | ICC | — | 25 | 50 | mA |
| LED current dissipation*1 | ILED | — | 2.0 | 2.3 | A |
| Input voltage | V _{IH} | 3.5 | — | — | V |
| | V _{IL} | — | — | 1.5 | V |
| Input current | I _{IH} | — | — | 0.1 | μA |
| | I _{IL} | — | — | 0.12 | mA |
| Clock frequency | f _{CLK} | — | — | 4 | MHz |
| Frame frequency | f _{FR} | 80 | — | 625 | Hz |

*1 Under the condition that dichromatic all dots are lit.

■ Timing Chart

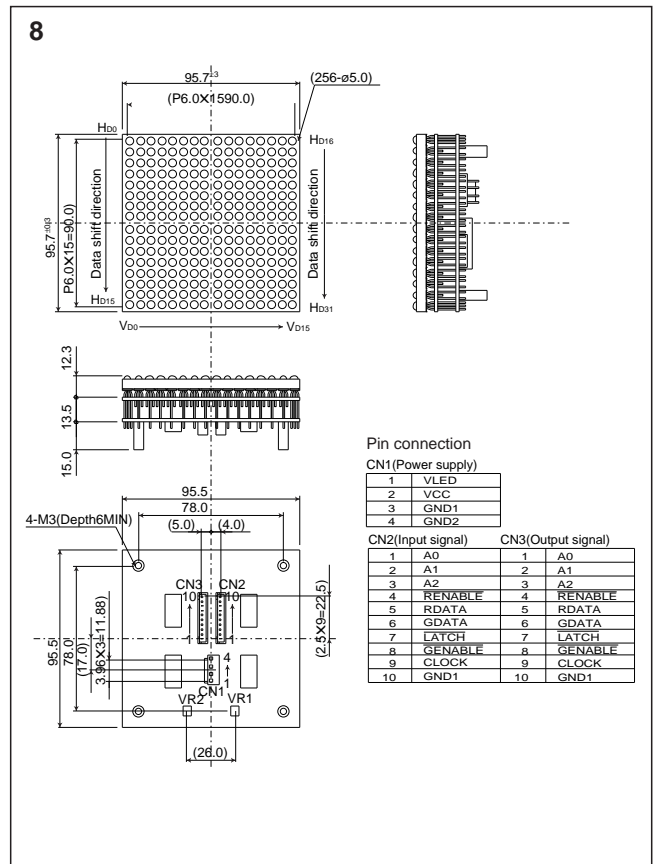
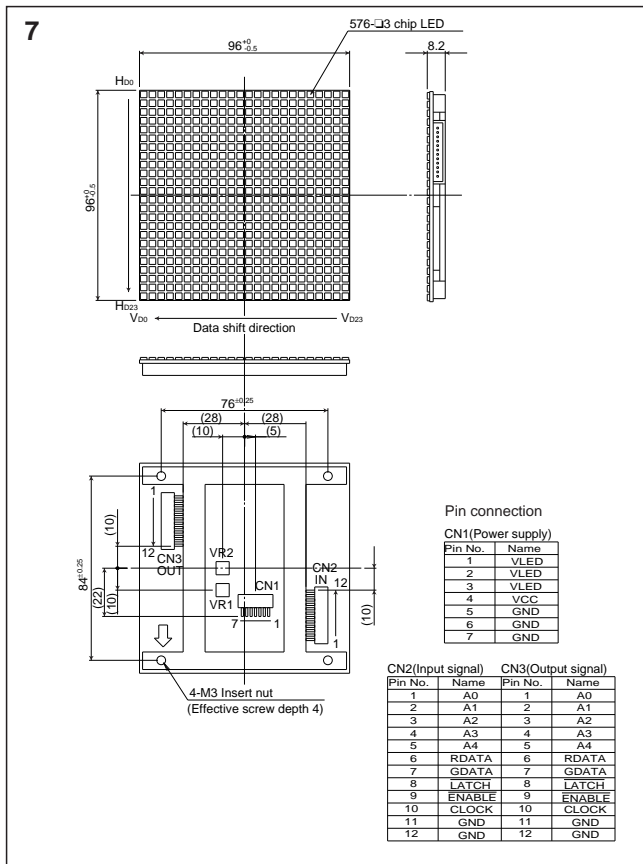
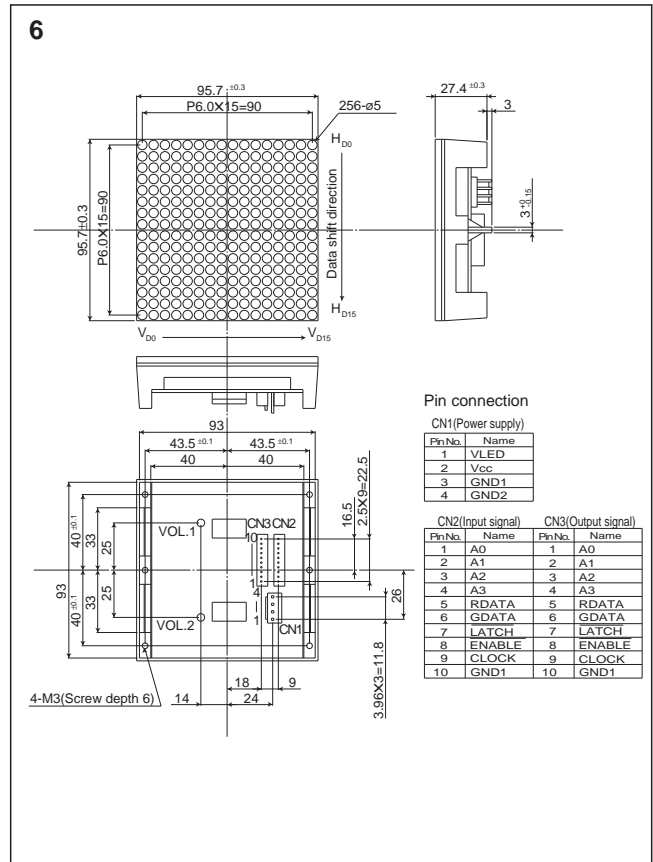
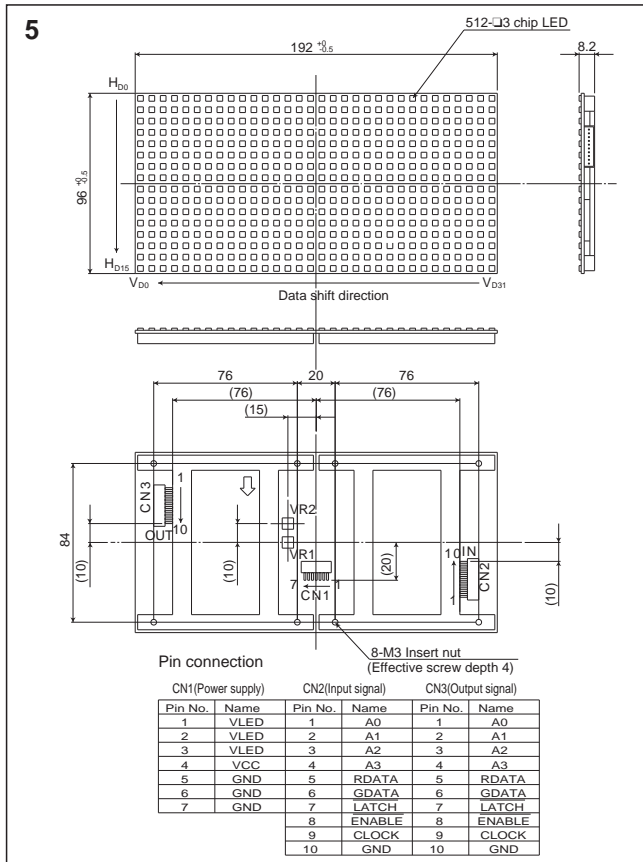


■ Block Diagram



Dot Matrix LED Unit Outline Dimensions(Unit:mm)

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