AND Displays

# ANDpSi08C343S

## 8.4” SVGA Color p-Si TFT LCD Module

The ANDpSi08C343S is 800 x 600 Color TFT display that utilizes new poly-silicon (p-Si) technology to provide a brighter, thinner and lighter display with high-resolution. The p-Si TFT technology allows the row and column LCD drivers to be fabricated directly on the LCD glass. This eliminates the need for discrete TAB drivers. This reduces the thickness, weight and overall size of the display. The single tube CCFL backlight offers a very thin, low power, and bright display that can be dimmed to save power. This makes the display ideal for portable, battery-operated applications.

## Features

- p-Si construction with drivers on glass
- High luminance
- Single CCFL backlight
- Clear 256K colors (K=1024)
- Thin and lightweight design
- SVGA (800 x 600 pixels color display)
- Fast response time
- Applications: Display Terminals; Scientific, Medical, Test & Measurement Instruments; Office Automation Equipment

### Mechanical Characteristics

| Item | Specification | Unit |
|---|---|---|
| Outline Dimensions | 201.4 (H) x 140.3 (V) x 5.8 max (D) | mm |
| Number of Pixels | 800 (H) x 600 (V) | pixels |
| Active Area | 170.4 (H) x 127.8 (V) | mm |
| Pixel Pitch | 0.213 (H) x 0.213 (V) | mm |
| Weight (approx.) | 190 | gram |
| Backlight | CCFL, Side-light type (1 lamp) | – |

### Absolute Maximum Ratings

| Item | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| Supply Voltage | $V_{DD}$ | -0.3 | 4.5 | 4.0 V |
| | $V_{FL}$ | 0 | 2000 | Vrms |
| FL Driving Frequency | $f_{FL}$ | 0 | 100 | kHz |
| Input Signal Voltage | $V_{IN}$ | -0.3 | $V_{DD}$ + 0.3 | V |
| Operating Temperature | $T_{op}$ | 0 | 50 | °C |
| Storage Temperature | $T_{stg}$ | -20 | 60 | °C |
| Humidity (Max. Wet bulb temp = 29°C) | – | 10 | 90 | l RH |

### Electrical Characteristics (Ta = 25°C)

| Item | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Supply Voltage ($I_{FL}$=2.7mA) | $V_{DD}$ | 3.0 | 3.3 | 3.6 | V |
| | $V_{FL}$ | 370 | 420 | 450 | Vrms |
| FL Start Voltage (Ta = 0°C) | – | 1000 | – | 1600 | Vrms |
| High Level Input Voltage | $V_{IH}$ | 0.8 | _ | $V_{DD}$ | V |
| Low Level Input Voltage | $V_{IL}$ | 0 | – | 0.2 | V |
| Current Consumption | $I_{DD}$ | – | 240 | – | mA |
| | $I_{FL}$ | 2.2 | 2.7 | 5.0 | mArms |
| Power Consumption (*1) | P | – | 1.9 | – | W |

*1: Before the efficiency loss of CCFL inverter, $I_{FL}$ =2.7mA

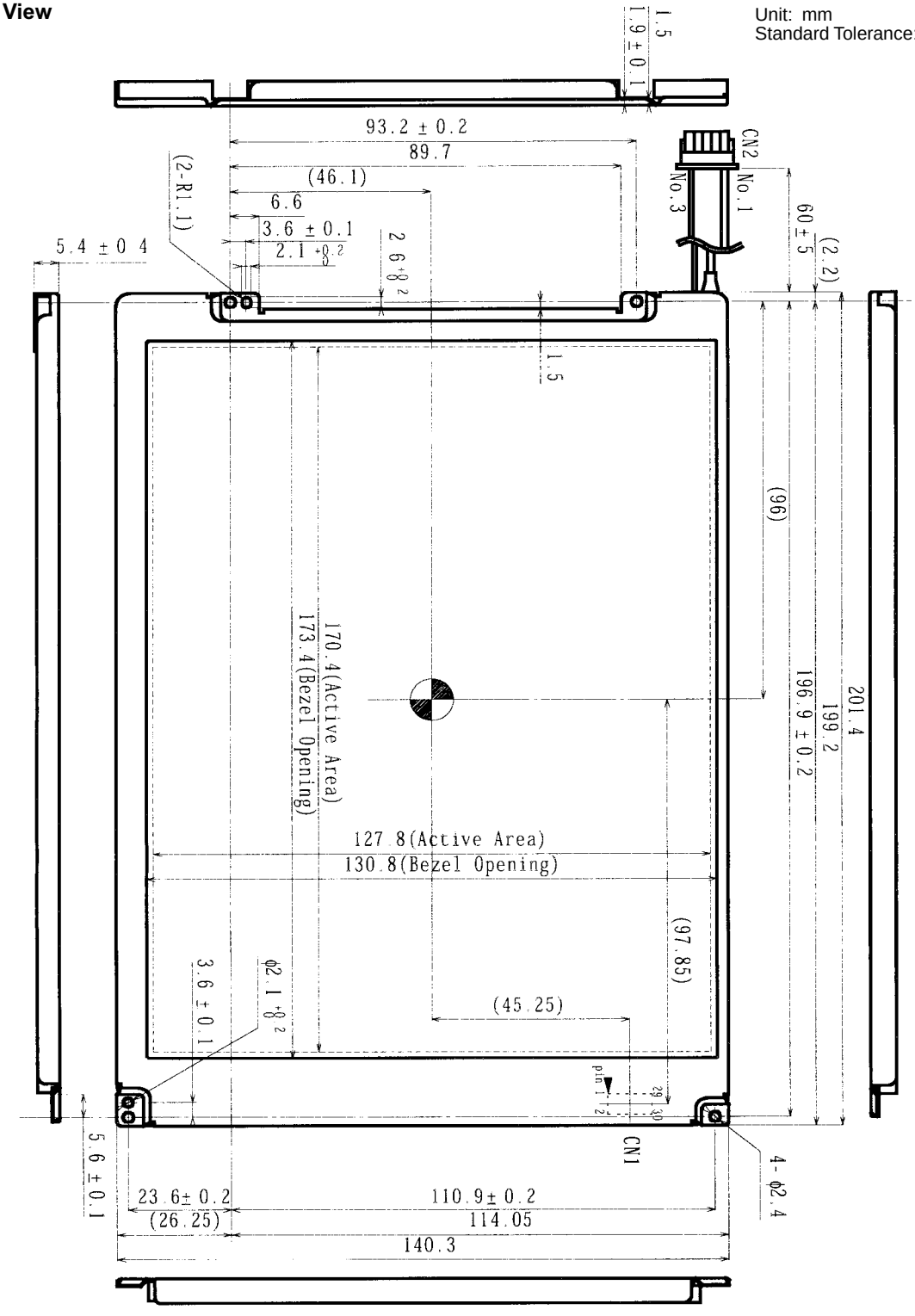
### Optical Characteristics (Ta = 25˚C)

| Item | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Contrast | CR | 100 | 250 | – | – |
| Response | $t_{on}$ | – | – | 50 | ms |
| | $t_{off}$ | – | – | 50 | ms |
| Luminance ($I_{FL}$ =2.7mA) | L | 50 | 70 | – | cd/m$^2$ |
| Luminance ($I_{FL}$ =5mA) | L | 90 | 130 | – | cd/m$^2$ |

## Dimensional Outline

**Front View**

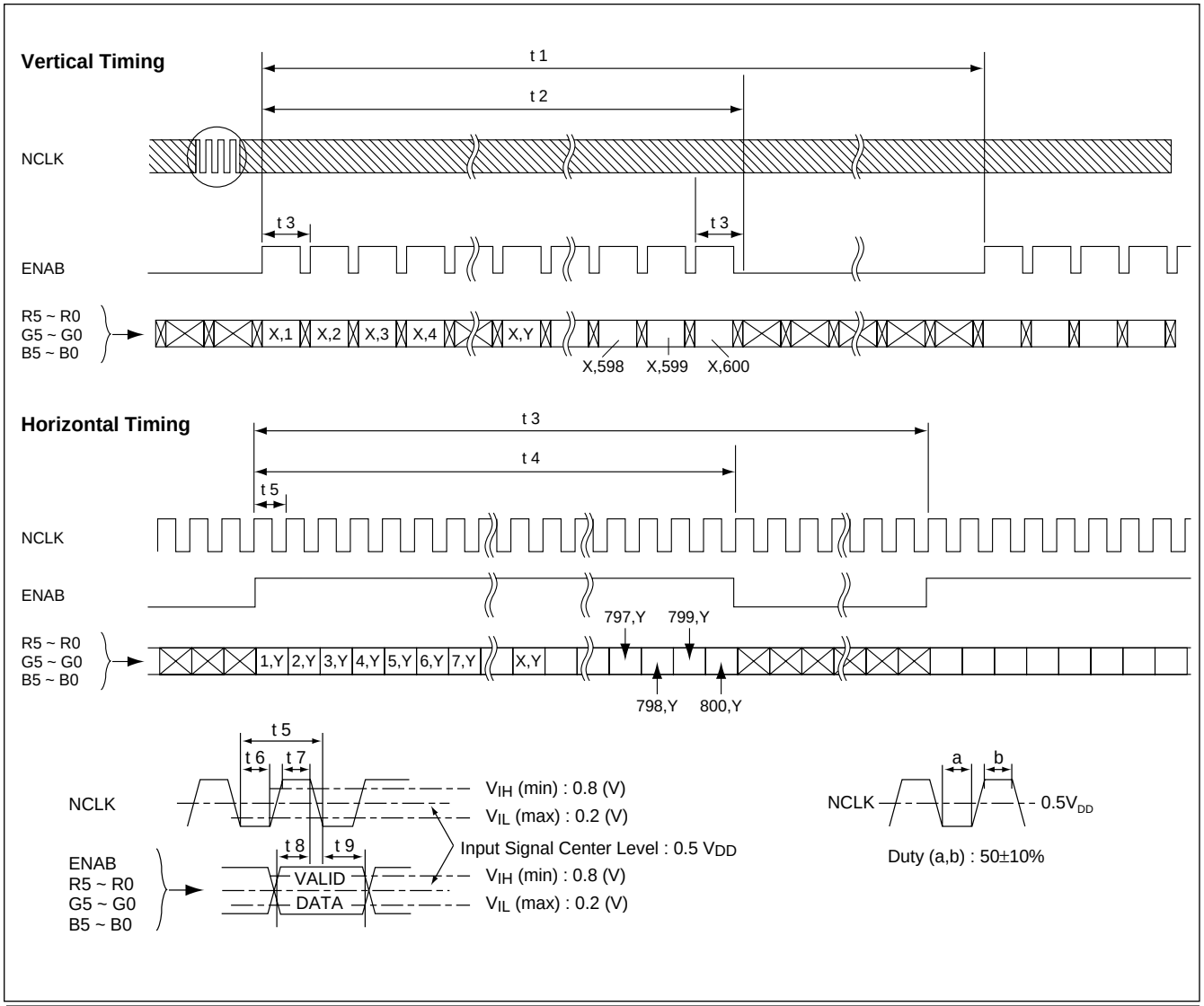
Unit: mm
Standard Tolerance: 0.5mm

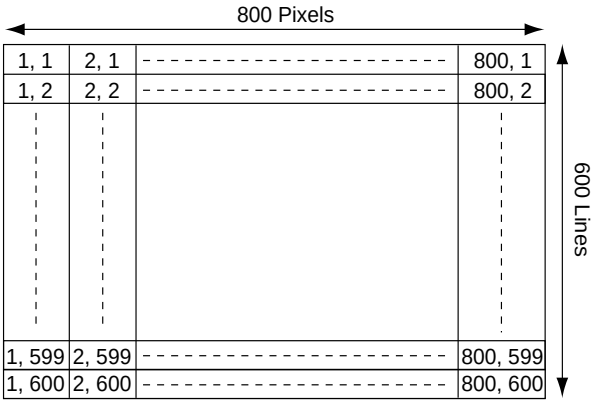


## Timing Specifications

| Item | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Frame Period | t1 | 604 x t3<br>– | 625 x t3<br>17.78 | 628 x t3<br>17.86 | –<br>ms |
| Vertical Display Term | t2 | 600 x t3 | 600 x t3 | 600 x t3 | t2 = N •t3 |
| One Line Scanning Time | t3 | 1000 x t5<br>(26.3) | 1056 x t5<br>26.4 | 1056 x t5 | –<br>µs |
| Horizontal Display Period | t4 | 800 x t5 | 800 x t5 | 800 x t5 | – |
| Clock Period | t5 | 24.7 | 25.0 | 27.8 | ns |
| Clock “L” Time | t6 | 9.0 | – | – | ns |
| Clock “H” Time | t7 | 9.0 | – | – | ns |
| Set Up Time | t8 | 4.0 | – | – | ns |
| Hold Time | t9 | 6.0 | – | – | ns |

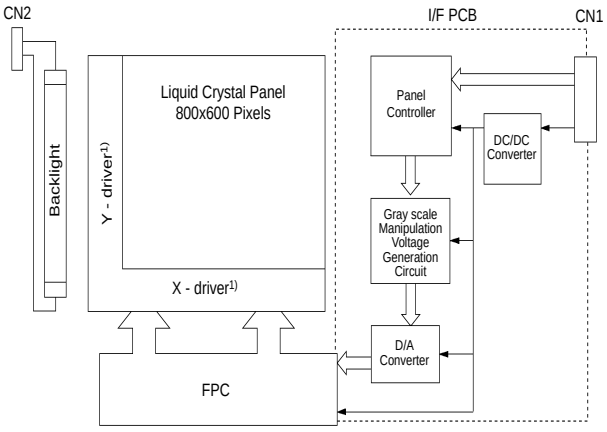
## Timing Chart






Recommended Inverter: INV8m122325 (12VDC Input)

### Block Diagram




**1) Drivers are fabricated on the LCD glass**

**2) Connectors**

**CN1-SD-53885-0301/Japan Molex Co.**
**Mating Connector - SD-54102-0301/Molex**

**CN2-BHR-03VS-1/Japan Solderless Terminal Co., Ltd.**
**Mating COnnector - SM02(8.0)B-BHS/JST**

## Connector Pin Assignment for Interface

**CN1 Input Signal (1)**
**(SD-53885-0301/Japan Molex Co.)**

| Terminal No. | | Symbol | Function |
|---|---|---|---|
| 1 | | GND | Ground |
| | 2 | GND | Ground |
| 3 | | NCLK | Sampling Clock |
| | 4 | GND | Ground |
| 5 | | R0(2) | Red Display Data (LSB) |
| | 6 | R1(2) | Red Display Data |
| 7 | | R2(2) | Red Display Data |
| | 8 | R3(2) | Red Display Data |
| 9 | | R4(2) | Red Display Data |
| | 10 | R5(2) | Red Display Data (MSB) |
| 11 | | GND | Ground |
| | 12 | G0(2) | Green Display Data (LSB) |
| 13 | | G1(2) | Green Display Data |
| | 14 | G2(2) | Green Display Data |
| 15 | | G3(2) | Green Display Data |
| | 16 | G4(2) | Green Display Data |
| 17 | | G5(2) | Green Display Data (MSB) |
| | 18 | GND | Ground |
| 19 | | B0(2) | Blue Display Data (LSB) |
| | 20 | B1(2) | Blue Display Data |
| 21 | | B2(2) | Blue Display Data |
| | 22 | B3(2) | Blue Display Data |
| 23 | | B4(2) | Blue Display Data |
| | 24 | B5(2) | Blue Display Data (MSB) |
| 25 | | GND | Ground |
| | 26 | ENAB | Compound Synchronization Signal |
| 27 | | VDD | +3.3V Power Supply |
| | 28 | VDD | +3.3V Power Supply |
| 29 | | GND | Ground |
| | 30 | GND | Ground |

**CN2 CCFL Power Source**
**(BHR-03VS-1/Japan Solderless Terminal Mfg Co., Ltd.)**

| Terminal No. | Symbol | Function |
|---|---|---|
| 1 | VL | CCFL Power Supply (High Voltage) |
| 2 | NC(1) | |
| 3 | GL | CCFL Power Supply (GND Side) |

Note (1) NC terminal is open.


Purdy Electronics Corporation • 720 Palomar Avenue • Sunnyvale, CA 94086
Tel: 408.523.8200 • Fax: 408.733.1287 • email@purdyelectronics.com
www.purdyelectronics.com

Note (2): 256K colors are displayed by the combinations of 18 data bits.

| | Display | R5 | R4 | R3 | R2 | R1 | R0 | G5 | G4 | G3 | G2 | G1 | G0 | B5 | B4 | B3 | B2 | B1 | B0 | Gray Scale Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Basic Color | Black | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | – |
| | Blue | L | L | L | L | L | L | L | L | L | L | L | L | H | H | H | H | H | H | – |
| | Green | L | L | L | L | L | L | H | H | H | H | H | H | L | L | L | L | L | L | – |
| | Lt. Blue | L | L | L | L | L | L | H | H | H | H | H | H | H | H | H | H | H | H | – |
| | Red | H | H | H | H | H | H | L | L | L | L | L | L | L | L | L | L | L | L | – |
| | Purple | H | H | H | H | H | H | L | L | L | L | L | L | H | H | H | H | H | H | – |
| | Yellow | H | H | H | H | H | H | H | H | H | H | H | H | L | L | L | L | L | L | – |
| | White | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | | – |
| Gray Scale of Red | Black | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L0 |
| | Dark | L | L | L | L | L | H | L | L | L | L | L | L | L | L | L | L | L | L | L1 |
| | | L | L | L | L | H | L | L | L | L | L | L | L | L | L | L | L | L | L | L2 |
| | | | | | : | | | | | | : | | | | | | : | | | L3~L60 |
| | | | | | : | | | | | | : | | | | | | : | | | |
| | | H | H | H | H | L | H | L | L | L | L | L | L | L | L | L | L | L | L | L61 |
| | Light | H | H | H | H | H | L | L | L | L | L | L | L | L | L | L | L | L | L | L62 |
| | Red | H | H | H | H | H | H | L | L | L | L | L | L | L | L | L | L | L | L | Green L63 |
| Gray Scale of Green | Black | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L0 |
| | Dark | L | L | L | L | L | L | L | L | L | L | L | H | L | L | L | L | L | L | L1 |
| | | L | L | L | L | L | L | L | L | L | L | H | L | L | L | L | L | L | L | L2 |
| | | | | | : | | | | | | : | | | | | | : | | | L3~L60 |
| | | | | | : | | | | | | : | | | | | | : | | | |
| | | L | L | L | L | L | L | H | H | H | H | L | H | L | L | L | L | L | L | L61 |
| | Light | L | L | L | L | L | L | H | H | H | H | H | L | L | L | L | L | L | L | L62 |
| | Green | L | L | L | L | L | L | H | H | H | H | H | H | L | L | L | L | L | L | Green L63 |
| Gray Scale of Blue | Black | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L0 |
| | Dark | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | H | L1 |
| | | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | H | L | L2 |
| | | | | | : | | | | | | : | | | | | | : | | | L3~L60 |
| | | | | | : | | | | | | : | | | | | | : | | | |
| | | L | L | L | L | L | L | L | L | L | L | L | L | H | H | H | H | L | H | L61 |
| | Light | L | L | L | L | L | L | L | L | L | L | L | L | H | H | H | H | H | L | L62 |
| | Blue | L | L | L | L | L | L | L | L | L | L | L | L | H | H | H | H | H | H | Blue L63 |
| Gray Scale of White & Black | Black | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L | L0 |
| | Dark | L | L | L | L | L | H | L | L | L | L | L | H | L | L | L | L | L | H | L1 |
| | | L | L | L | L | H | L | L | L | L | L | H | L | L | L | L | L | H | L | L2 |
| | | | | | : | | | | | | : | | | | | | : | | | L3~L60 |
| | | | | | : | | | | | | : | | | | | | : | | | |
| | | H | H | H | H | L | H | H | H | H | H | L | H | H | H | H | H | L | H | L61 |
| | Light | H | H | H | H | H | L | H | H | H | H | H | L | H | H | H | H | H | L | L62 |
| | White | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | White L63 |