

AND501WGST/WGST-LED

20 Characters x 2 Lines

Intelligent Alphanumeric Displays

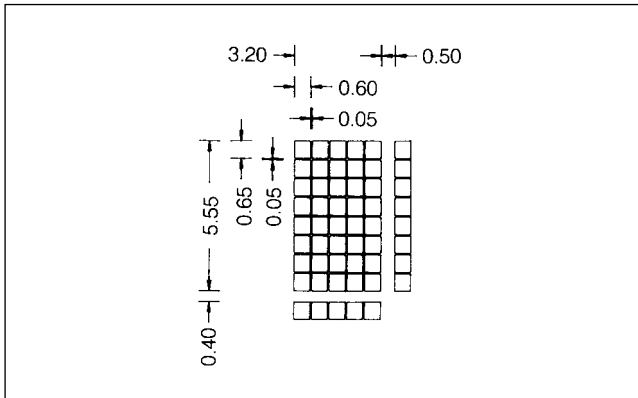
The AND501WGST/WGST-LED devices are compact, LCD modules that have an on-board LCD controller and driver circuit and wide operating temperature STN fluid. These devices can display 160 characters (numerals, letters, symbols and Kana letters).

Features

• RoHS Compliant

- AND501WGST: Wide Temp. Super Twist Technology
- AND501WGST-LED: WTSTN with LED backlight
- Low voltage, $\pm 5V$ power supply
- Controller on board (HD44780)
- RoHS compliant
- 11 commands for control

Dot Matrix Dimensions



Mechanical Characteristics

| Item | Specification | Unit |
|--------------------|---------------------------|------|
| Outline Dimensions | 116 (W) x 37 (H) x 11 (D) | mm |
| Character Size | 3.2 (W) x 5.55 (H) | mm |
| Viewing Area | 83.0 (W) x 18.6 (H) | mm |
| Dot Size | 0.60 (W) x 0.65 (H) | mm |
| Dot Pitch | 0.65 (W) x 0.70 (H) | mm |

Absolute Maximum Ratings

| Item | Symbol | Rating | Unit |
|-----------------------|----------|-----------------------------|------|
| Supply Voltage | V_{DD} | 7.0 | V |
| Input Voltage | V_{IN} | $0 \leq V_{IN} \leq V_{DD}$ | V |
| LED Forward Current | I_F | 275 | mA |
| LED Reverse Voltage | V_R | 8 | V |
| LED Power Dissipation | P_D | 1270 | mW |

Absolute Maximum Ratings (Continued)

| Item | Symbol | Rating | Unit |
|-----------------------|-----------|------------|-------------|
| Operating Temperature | T_{op} | -20 to +70 | $^{\circ}C$ |
| Storage Temperature | T_{stg} | -30 to +80 | $^{\circ}C$ |

Electrical Characteristics (TA = 25°C)

| Item | Symbol | Min. | Typ. | Max. | Unit |
|--|----------|------|------|------|------|
| Supply Voltage | V_{DD} | 4.75 | 5.0 | 5.25 | V |
| | GND | — | 0 | — | |
| High Level In Voltage ($V_{DD} = 5.0V$) | V_{IH} | 2.2 | — | — | V |
| Low Level In Voltage ($I_{OH} = 0.2 mA$) | V_{IL} | 0 | — | 0.6 | V |
| High Level Output Volt. ($-I_{OH} = 0.2 mA$) | V_{OH} | 2.4 | — | — | V |
| Low Level Output Volt. ($I_{OL} = 1.2 mA$) | V_{OL} | — | — | 0.6 | V |
| LED Forward Voltage ($I_F = 200 mA$) | V_F | 3.8 | 4.1 | 4.4 | V |
| LED Reverse Current ($V_R = 8 V$) | I_R | — | — | 2.2 | mA |

Optical Characteristics (TA = 25°C, $\phi = 0^{\circ}C$, $\theta = 0$)

| Item | Symbol | Min. | Typ. | Max. | Unit |
|---------------|-----------|------|------|------|--------|
| Viewing Angle | ϕ | -10 | 25 | 40 | degree |
| Contrast | K | — | 3.0 | — | — |
| Turn On | T_{on} | — | 200 | 400 | ms |
| Turn Off | T_{off} | — | 250 | 400 | ms |

Connector Pin Assignment

| Pin No. | Signal | Function |
|---------|----------|-------------------|
| 1 | GND | Ground |
| 2 | V_{DD} | +5 Power Supply |
| 3 | V_O | LCD Drive Voltage |

Product specifications contained herein may be changed without prior notice.

It is therefore advisable to contact Purdy Electronics before proceeding with the design of equipment incorporating this product.

Connector Pin Assignment (Continued)

| Pin No. | Signal | Function |
|---------|--------|--|
| 4 | RS | "H" Data Input "L" Command Input |
| 5 | R/W | Read/Write |
| 6 | E | Enable |
| 7 | DB0 | Data Bus DB0-DB7 are for 8-bit operation DB4-DB7 are for 4-bit operation |
| 8 | DB1 | |
| 9 | DB2 | |
| 10 | DB3 | |
| 11 | DB4 | |
| 12 | DB5 | |
| 13 | DB6 | |
| 14 | DB7 | |

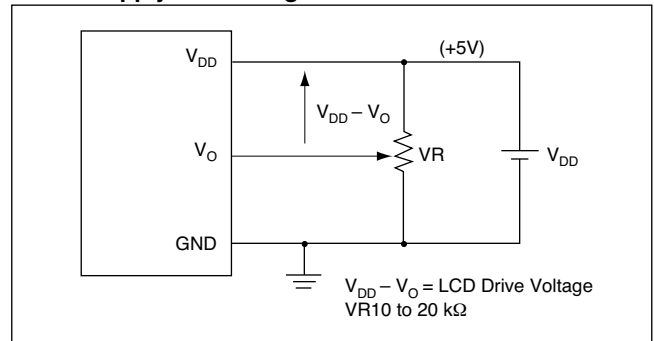
Power Supply

The LCD panel is driven by the voltage $V_{DD}-V_O$, so adjustable V_O is required for contrast control and temperature compensation.

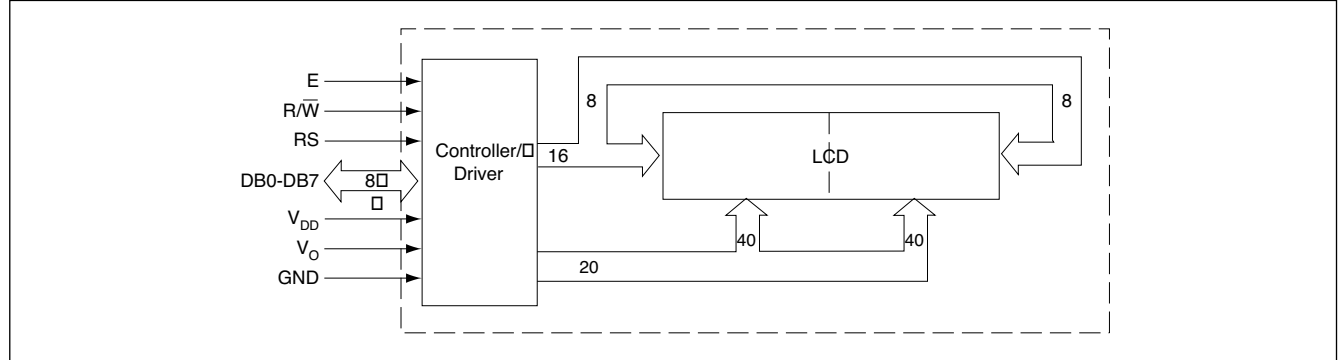
Temperature Variations

| Temperature | $V_{DD}-V_{EE}$ |
|-------------|-----------------|
| -20°C | 6.20 |
| +25°C | 5.60 |
| +70°C | 5.20 |

Power Supply Block Diagram



Block Diagram



Dimensional Outline

