

AND501WGST/WGST-LED

20 Characters x 2 Lines

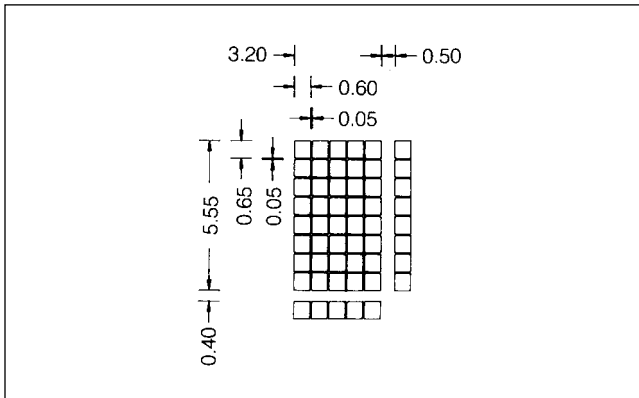
Intelligent Alphanumeric Displays

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

- AND501WGST: Wide Temp. Super Twist Technology
- AND501WGST-LED: WTSTN with LED backlight
- Low voltage, $\pm 5V$ power supply
- Controller on board (HD44780)
- Direct interface to 4- or 8-bit CPU
- 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 $^{\circ}C$)

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 $^{\circ}C$, $\phi = 0^{\circ}C$, $\theta = 0$)

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



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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	

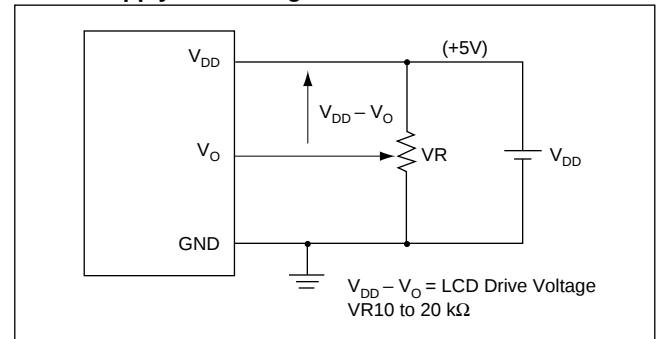
Power Supply

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

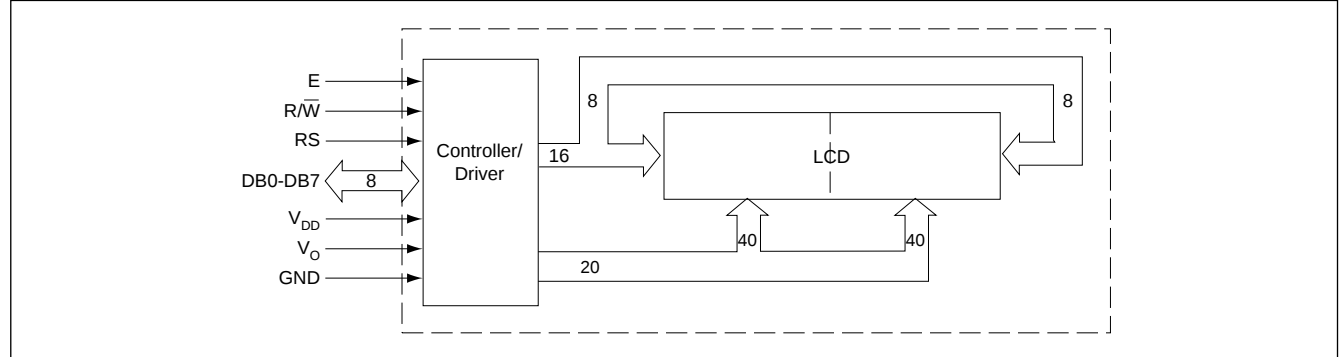
Temperature Variations

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

