



## AND591GST/GST-LED

### 2 Lines x 40 Characters

### Intelligent Character Display

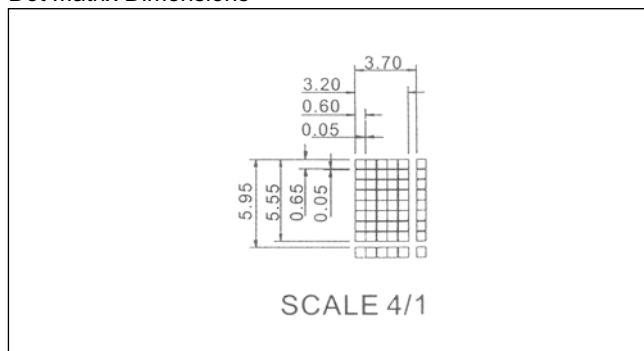
The AND591GST/GST-LED devices are compact, LCD modules that have an on-board LCD controller and driver circuit. These devices can display 160 characters (numerals, letters, symbols and Kana letters), as well as eight custom characters.

#### Features

- 5 x 7 dots with cursor
- Built-in controller (KS0066 or equivalent)
- 5V Power supply
- RoHS compliant
- 4.2V LED Forward Voltage

• RoHS Compliant

#### Dot Matrix Dimensions



#### Mechanical Characteristics

Item	Specification	Unit
Outline Dimensions	182 (H) x 33.5 (V) x 8.8 (D) (12.7 LED)	mm
Character Size	3.20 (H) x 5.55 (V)	mm
Character Pitch	3.70 (H) x 5.95 (V)	mm
Viewing Area	154 (H) x 15.3 (V)	mm
Dot Size	0.60 (H) x 0.65 (V)	mm
Dot Pitch	0.65 (H) x 0.70 (V)	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	$I_F$	520	mA

#### Absolute Maximum Ratings (Continued)

Item	Symbol	Rating	Unit
LED Reverse Voltage	$V_R$	4	V
LED Power Dissipation	$P_D$	2240	mW
Operating Temperature	$T_{op}$	0 to +50	°C
Storage Temperature	$T_{stg}$	-20 to +60	°C

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

Item	Symbol	Cond.	Min.	Typ.	Max.	Unit
LCD Operating Voltage	$V_{DD}-V_O$	T=0 °C	-	4.8	-	V
		T=25 °C	-	4.5	-	
		T=50 °C	-	4.2	-	
Supply Voltage	$V_{DD}-V_{SS}$	-	4.7	5	5.3	V
Supply Current	$I_{DD}$	-	-	3.2	6	mA
Input Voltage	"High" Level	$V_{IH}$	-	2.2	-	V
	"Low" Level	$V_{IL}$	-	0	-	
Output Voltage	"High" Level	$V_{OH}$	-	2.4	-	V
	"Low" Level	$V_{OL}$	-	-	-	

#### Optical Characteristics (TA = 25°C, f = 0°, q = 0°)

Item	Symbol	Min.	Typ.	Max.	Unit
Viewing Angle	f	-	50	-	degree
Contrast	K	-	6.0	-	-
Turn On	$T_{on}$	-	200	400	ms
Turn Off	$T_{off}$	-	100	400	ms

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

Pin No.	Signal	Function
1	V <sub>SS</sub>	0V
2	V <sub>DD</sub>	5V
3	V <sub>O</sub>	Contrast Adj.
4	RS	Register Select
5	R/W	Read/Write
6	E	Enable Signal
7	DB0	Data Bit 0
8	DB1	Data Bit 1
9	DB2	Data Bit 2
10	DB3	Data Bit 3
11	DB4	Data Bit 4
12	DB5	Data Bit 5
13	DB6	Data Bit 6
14	DB7	Data Bit 7
15	A	LED Power
16	K	LED Power

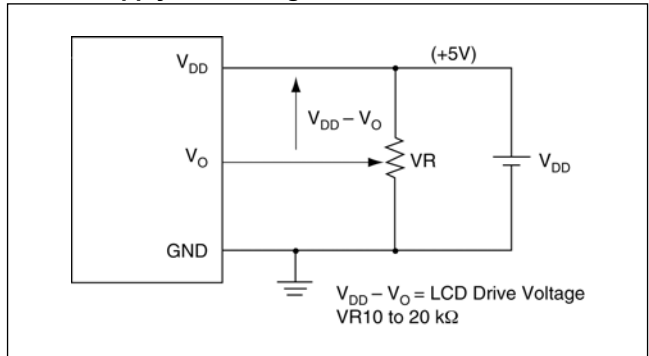
## Power Supply

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

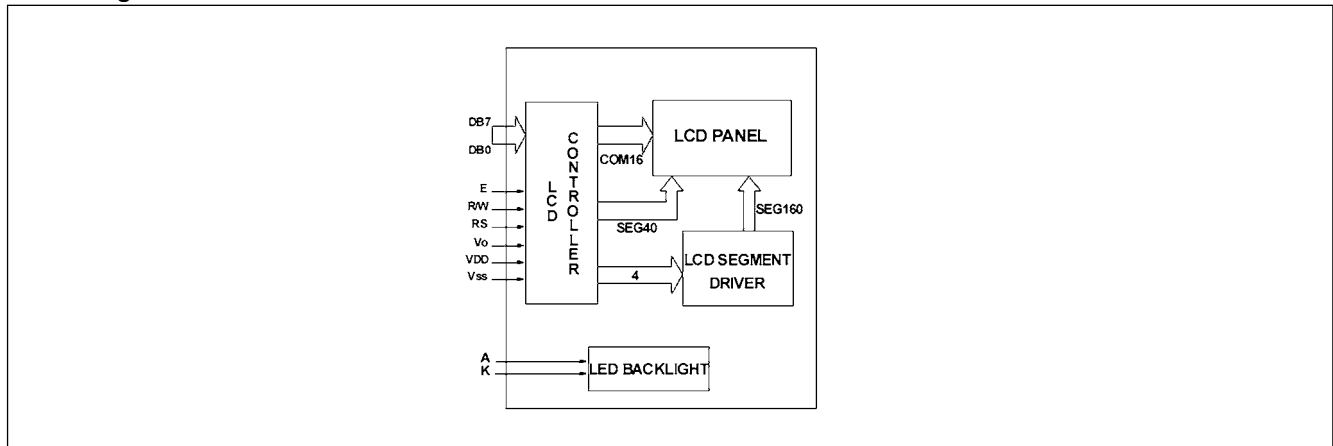
## Temperature Variations

Temperature	V <sub>DD</sub> -V <sub>O</sub>
0°C	5.00
+25°C	4.75
+50°C	4.50

## Power Supply Block Diagram



## Block Diagram



## Dimensional Outline

