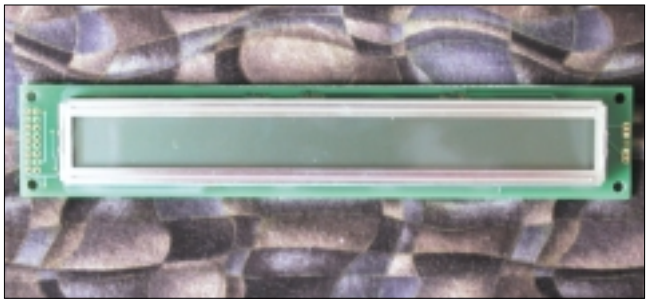
AND Displays



AND591GST/GST-LED

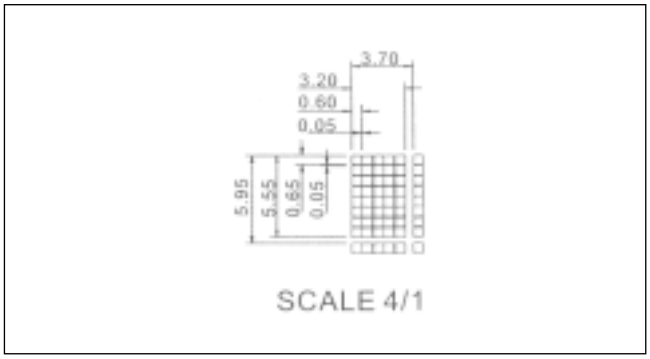
2 Lines x 40 Characters
Intelligent Character Display

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
- 1/16 Duty cycle)
- 4.2V LED Forward Voltage

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}	$0 \le V_{IN} \le V_{DD}$	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_{DD}	V
	"Low" Level	V_{IL}	–	0	–	0.6	
Output Voltage	"High" Level	V_{OH}	–	2.4	–	–	V
	"Low" Level	V_{OL}	–	–	–	0.4	

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

Connector Pin Assignment

Pin No.	Signal	Function
1	V_{SS}	0V
2	V_{DD}	5V
3	V_O	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

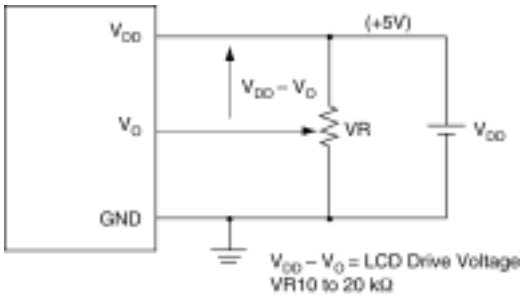
Power Supply

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

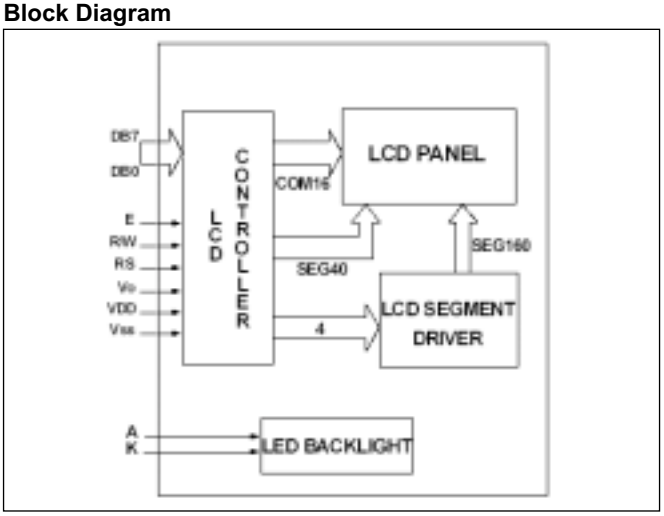
Temperature Variations

Temperature	V_{DD}–V_O
0°C	5.00
+25°C	4.75
+50°C	4.50

Power Supply Block Diagram



Block Diagram



Dimensional Outline