

AND1263WGST-LED

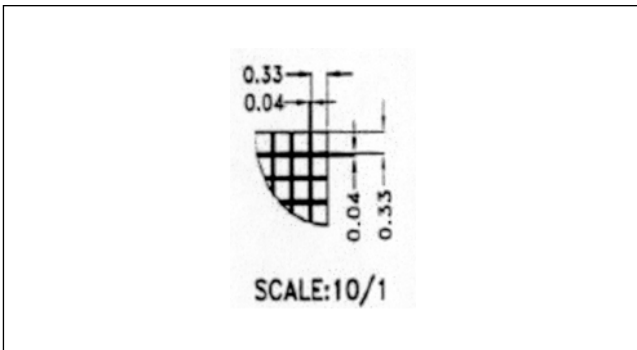
192 x 128 Dots Smart Graphic Display

The AND1263WGST-LED devices are compact, full dot matrix, LCD modules. The AND1263WGST-LED can display TEXT information, numerals, letters and symbols, as well as GRAPHIC patterns. These devices are suitable for medical and measurement equipment, point-of-sale terminals, portable equipment, and marine instrumentation.

Features

- λ 192 x 128 dot graphic display
- λ STN, gray, transfective, positive, extended temperature LCD type
- λ 1/128 duty, 1/12 bias driver condition
- λ 6 o'clock viewing direction
- λ YG LED B/L backlight
- λ 103 grams
- λ Available with LED backlighting (-LED option)

Dot Matrix Dimensions



Mechanical Characteristics

Item	Specification	Unit
Outline Dimensions	98.0 (H) x 86.0 (V) x 12.7 (D)	mm
# of Dots	192 x 128	
Viewing Area	77.5 (H) x 54.0 (V)	mm
Active Area	71.0(H) x 47.32 (V)	mm
Dot Size	0.33 (H) x 0.33 (V)	mm
Dot Pitch	0.37 (H) x 0.37 (V)	mm
Weight	103	gram

Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
Pwr Supply for Logic	$V_{DD} - V_{SS}$	-0.3	7.0	V
Pwr Supply for LCD	$V_{DD} - V_{EE}$	0	14.0	V
Input Voltage	V_I	-0.3	V_{DD}	V
LED Pwr Dissipation	P_{AD}	-	2.65	W
LED Forward Current	I_{AF}	-	660	mA
LED Reverse Voltage	V_{IN}		8	V
Operating Temperature	T_{op}	-20	+70	°C
Storage Temperature	T_{stg}	-30	+80	°C

Electrical Characteristics (TA = 25°C)

Item	Symbol	Min.	Max.	Unit
Pwr Supply Voltage	V_{DD}	-0.3	7.0	V
LCD Driver Supply Voltage	$V_{DD} - V_{EE}$	0	22.0	V
Input Voltage	V_{IN}	-0.3	$V_{DD} - 0.3$	
Operating Temperature (Excluded B/L)	T_{op}	-20	70	°C
Storage Temperature (Excluded B/L)	T_{ST}	-30	80	°C
Storage Humidity (Ta < 40 °C)	H_D	-	90	%RH

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.



AND1263WGST-LED Intelligent Character Display

Optical Characteristics

(LCD Panel: 1/128 Duty, 1/12 Bias, VLCD = 17.5V, Ta 5 = 25°C)

Item	Symbol	Min.	Typ.	Max.	Unit
View Angle ($C \geq 2.0, \phi = 0^\circ$)	θ	40°	-	-	degree
Contrast Ratio ($\theta = 5^\circ, \phi = 0^\circ$)	C	5	7	-	ms
Fall Time ($\theta = 5^\circ, \phi = 0^\circ$)	Tr	-	150 ms	-	
Frame Frequency ($\theta = 5^\circ, \phi = 0^\circ$)	Tf	-	300 ms	-	Hz

Connector Pin Assignment

Pin #	Signal	Function
1	DB3	Display Data input
2	DB2	Display Data input
3	FLM	One-frame timing signal
4	M	Liquid crystal AC drive control signal
5	CL1	One-common-line timing signal
6	CL2	Display Data shift clock
7	DB1	Display Data input
8	DB0	Display Data input
9	V _{DD}	Power Supply (V _{DD} > V _{SS})
10	V _{SS}	Power Supply (V _{SS} = 0)
11	V _{LC}	Operating voltage for LCD
12	FGND	Frame ground
13	K	Power supply LED backlight (-)
14	A	Power supply LED backlight (+)

DC Electrical Characteristics

(V_{DD} = 5.0V ± 10%, V_{SS} = 0V, Ta 5 = 25°C)

Item	Symbol	Condition	Min.	Typ.	Max	Unit
Logic Supply Voltage	V _{DD}	-	4.5	5.0	5.5	V
"H" Input Voltage	V _{IH}	-	0.8 V _{DD}	-	-	V
"L" Input Voltage	V _{IL}	-	0	-	0.2 V _{DD}	V
"H" Output Voltage	V _{OH}	-	V _{DD} - 0.4	-	-	V
"L" Output Voltage	V _{OL}	-	-	-	0.4	V
Supply Current	I _{DD}	V _{DD} = 5.0V f _{OSC} = 3.0 MHz	-	3.5	-	mA
LCM Driver Voltage	V _{OP}	V _{DD} - V _O (20 °C)	-	-	-	V
		V _{DD} - V _O (25 °C)	-	13.8	-	
		V _{DD} - V _O (70 °C)	-	-	-	

LCD Module with LED Backlight Maximum Ratings

Item	Symbol	Min.	Max	Unit
Forward Current (Ta = 25 °C)	IF	-	350	mA
Reverse Voltage (Ta = 25 °C)	VR	-	8	V
Power Dissipation (Ta = 25 °C)	PO	-	1.54	W
Operating Temperature	T _{OP}	-20	70	°C
Storage Temperature	T _{ST}	-40	80	°C
Solder Temp. for 3 seconds	-	-	260	°C

LCD Module with LED Backlight Electrical/Optical Characteristics (Ta 5 = 25°C)

Item	Symbol	Min.	Typ.	Max	Unit
Forward Voltage (IF=140 mA)	VF	-	4.0	4.4	V
Reverse Current (VR=8V)	IR	-	-	0.2	mA
Avg. Brightness (w/ LCD) (IF=140 mA)	IV	-	-	-	cd/m ²
Wavelength (IF=140 mA)	λ_p	571	-	576	nm
Luminous Intensity (w/out LCD) (IF=140 mA)	IV	14.4	18	-	cd/m ²
Color	Yellow-green				



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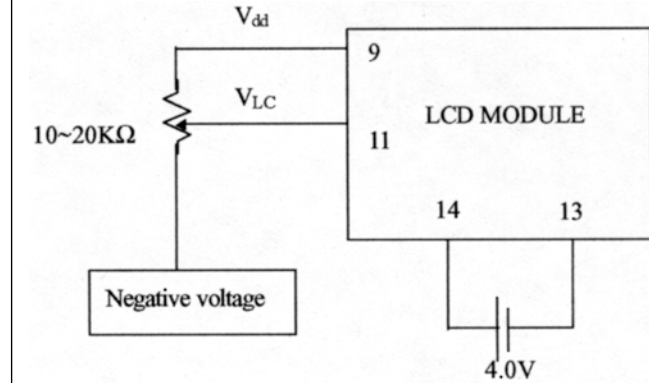
Power Supply

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

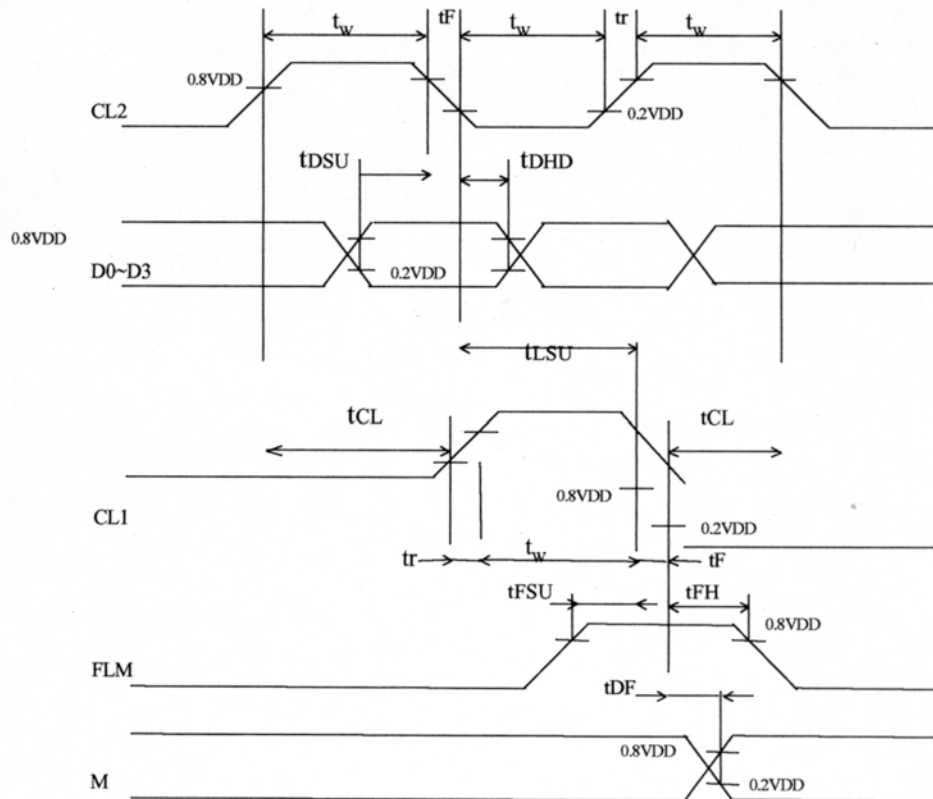
Temperature Variations

Temperature	$V_{DD}-V_O$
-20°C	5.00
+25°C	13.8
+70°C	4.50

Power Supply Block Diagram



Timing Chart





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Dimensional Outline

