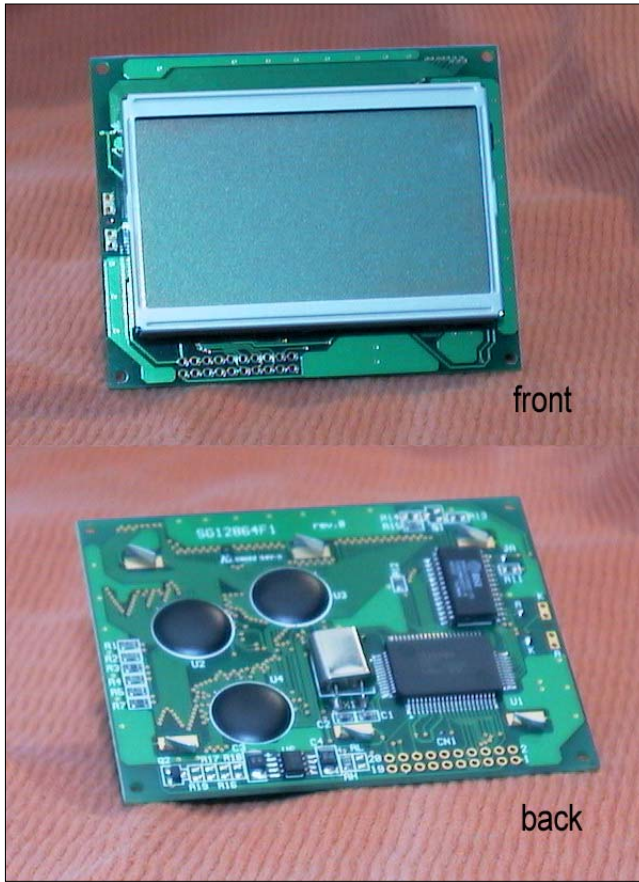




AND1264K GST-LED Intelligent Character Display



A AND1264WGST-LED 128 x 64 Dots Smart Graphic Display

Features

- 128 x 64 dot graphic display STN Gray, Transflective
- Built-in Controller
- +5 V Power Supply
- 1/64 Duty Cycle
- 8 Bit Parallel Interface
- 4.2 V LED Forward Voltage

• RoHS Compliant

- LED Backlight, Yellow-Green
- 6-O'Clock View Direction

Optical Definitions

Mechanical Characteristics

Item	Specification	Unit
Module Size	87 (W) x 70 (H) x 8.8 (D) (12.7 LED)	mm
Viewing Area	72.0 (W) x 40.0 (H)	mm
Dot Size	0.48 (W) x 0.48 (H)	mm
Dot Pitch	0.52 (W) x 0.52 (H)	mm
Controller	T6963C/Toshiba	—
DC/DC Controller	Optional	—

The AND1264GST-LED devices are compact, full dot matrix LCD modules that have built-in control functions. The AND1264GST-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.

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for Logic	$V_{DD}-V_{SS}$	—	4.5	5	5.5	V
Power Supply for LCD	$V_{EE}-V_{SS}$	—	-4.3	-4.8	-5.2	V
Input Voltage	V_{IL}	L Level	0	—	0.6	V
	V_{IH}	H Level	2.2	—	V_{DD}	V
	$V_{DD}-V_O$	$T_a = 0^\circ\text{C}$	—	—	—	—
$T_a = 25^\circ\text{C}$		7.6	8.3	9.2	V	
$T_a = 50^\circ\text{C}$		—	—	—	V	
Power Supply Current for LCM	I_{DD}	$V_{DD}=5.0\text{V}$	—	2.0	3.5	mA
	I_{EE}	$V_{DD}-V_O=8.3\text{V}$	—	2.4	—	
LED Forward Voltage	V_F	$I_f = 300\text{ mA}$	—	4.1	4.6	V
LED Forward Current	I_F	—	—	300	—	mA
LED Reverse Current	I_R	$V_R = 8\text{V}$	—	—	0.2	mA

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.

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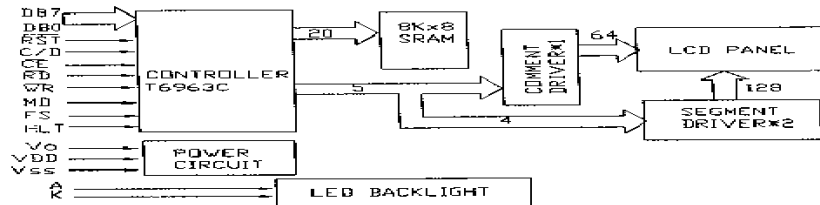


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Interface Pin Connections

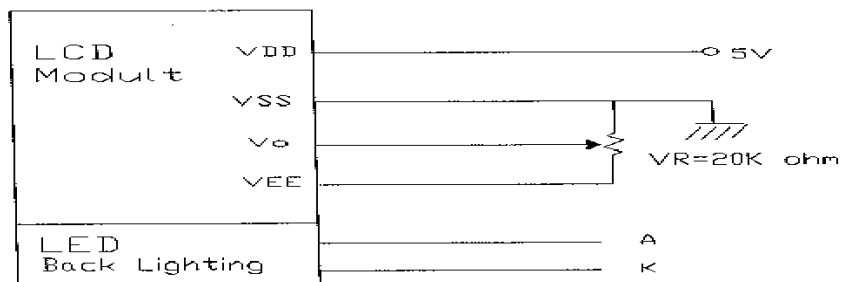
No	Symbol	Level	Function
1	V _{SS}	0V	Power Supply Ground
2	V _{DD}	5V	Power Supply Voltage
3	V _O	-	Contrast Adjustment Voltage
4	C/D	H/L	H : Data, L : Instruction Code
5	/RD	L	Read
6	/WR	L	Write
7~14	DB0~DB7	H/L	Data Bus Line
15	/CE	L	Enable Signal
16	/RST	L	Reset Signal
17	V _{EE}	-	Power Supply Voltage for LCD
18	MD	H/L	H : 32 / L : 4- Select Of Columns
19	FS	H/L	H : 6*8 / L : 8*8 Select Of Font
20	/HLT	L	Stop The Oscillation Of Clock

Block Diagram



* Built-in M-clock generating circuit, User does not have to supply M-clock.

Power Supply





AND1264WGST-LED Intelligent Character Display

Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle Range	ϕ f (12 o'clock)	When Cr \geq 1.4	-	20	-	Degree
	ϕ b (6 o'clock)		-	40	-	
	ϕ l (9 o'clock)		-	30	-	
	ϕ r (3 o'clock)		-	30	-	
Rise Time	Tr	$V_{DD}-V_O=8.3V$ Ta = 25°C	-	200	-	ms
Fall Time	Tf		-	250	-	
Frame Frequency	Frm		-	64	-	Hz
Contrast	Cr		-	4.5	-	
The Brightness of Backlight	L	If = 300 mA	140	180	-	cd/m ²
Peak Emission Wavelength	λ P		567	570	577	nm

Absolute Maximum Ratings - Electrical Absolute Ratings

Item	Symbol	Min.	Max.	Unit
Power Supply for Logic	$V_{DD}-V_{SS}$	-0.3	7.0	V
Power Supply for LCD	$V_{DD}-V_{EE}$	0	14.0	V
Input Voltage	V_I	-0.3	V_{DD}	V
LED Power Dissipation	P_{AD}	-	2070	mW
LED Forward Current	I_{AF}	-	450	mA
LED Reverse Voltage	V_R	-	8	V

Absolute Maximum Ratings - Environmental Absolute Maximum Ratings

Item	Normal Temperature				Wide Temperature			
	Operating		Storage		Operating		Storage	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Ambient Temperature	0°C	+50°C	-20°C	+70°C	-20°C	+70°C	-30°C	+80°C
Humidity (without condensation)	Note 2, 4		Note 3, 5		Note 4, 5		Note 4, 6	

Note 2 Ta \leq 50°C: 80% RH max

Ta > 50°C: Absolute humidity must be lower than the humidity of 85% RH at 50°C.

Note 3 Ta at -20°C will be < 48 hrs; at 70°C will be < 120 hrs when humidity is higher than 75%.

Note 4 Background color changes slightly depending on ambient temperature. This phenomenon is reversible.

Note 5 Ta \leq 70°C: 75 RH max

Ta > 70°C: absolute humidity must be lower than the humidity of 75% RH at 70°C

Note 6 Ta at -30°C will be < 48 hrs; at 80°C will be < 120 hrs when humidity is higher than 75%



AND1264WGST-LED Intelligent Character Display

AC Characteristic - ($V_{DD} = 5.0V \pm 10\%$, $V_{SS} = 0V$, $T_a = 0$ to $50^\circ C$)

Item	Test Condition	Symbol	Min.	Max.	Unit
C/D Setup Time	—	t_{CDS}	100	—	nS
C/D Hold Time	—	t_{CDH}	10	—	
CE, RD, WR Pulse Width	—	t_{CDS} , t_{CDS} , t_{CDS}	80	—	
Data Setup Time	—	t_{DS}	80	—	
Data Hold Time	—	t_{DH}	40	—	
Access Time	—	t_{ACC}	—	150	
Output Hold Time	—	t_{OH}	10	50	

Timing Chart

