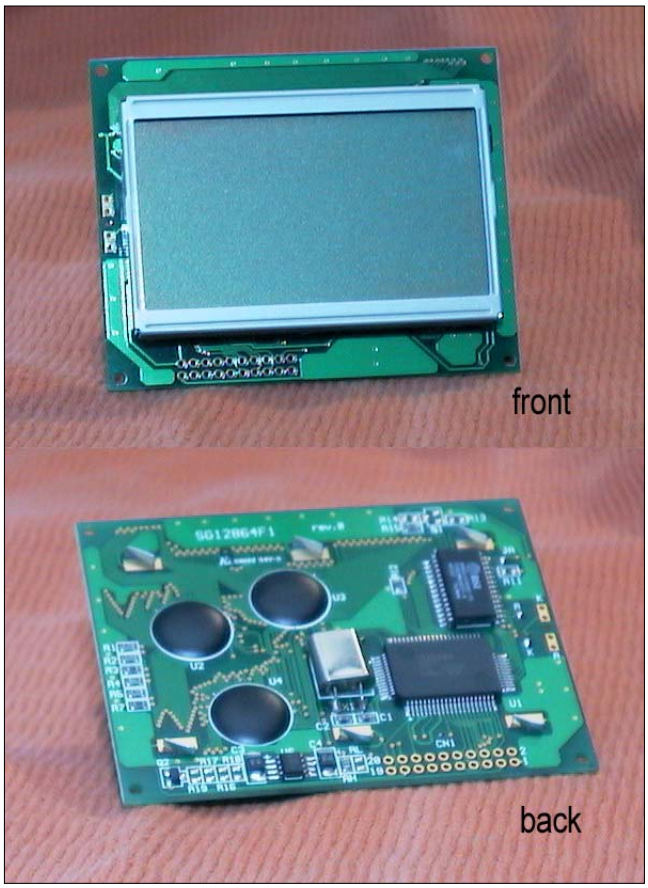


AND1264GST-LED

128 x 64 Dots
Smart Graphic Display

Features

- 128 x 64 dot graphic display
- Built-in Controller
- +5 V Power Supply
- 1/64 Duty Cycle
- 8 Bit Parallel Interface
- 4.2 V LED Forward Voltage
- STN Gray, Transflective
- LED Backlight, Yellow-Green
- 6-O'Clock View Direction

• RoHS Compliant

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, leters and symbols, as well as GRAPHIC patterns. These devices are suitable for medical and measurement equipment, point-of-sale terminals, protable equipment, and marine instrumentation.

Electrical Characteristics

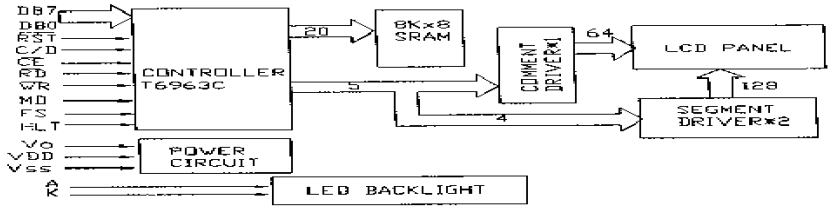
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for Logic	V_{DD}-V_{SS}	—	4.5	5	5.5	V
Power Supply for LCD	V_{EE}-V_{SS}	—	-4.3	-4.8	-5.2	V
Input Voltage	V_{IL}	L Level	0	–	0.6	V
	V_{IH}	H Level	2.2	–	V_{DD}	V
	V_{DD}-V_O	Ta = 0ºC	–	–	–	V
		Ta = 25ºC	7.6	8.3	9.2	V
		Ta = 50ºC	–	–	–	V
Power Supply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

Interface Pin Connections

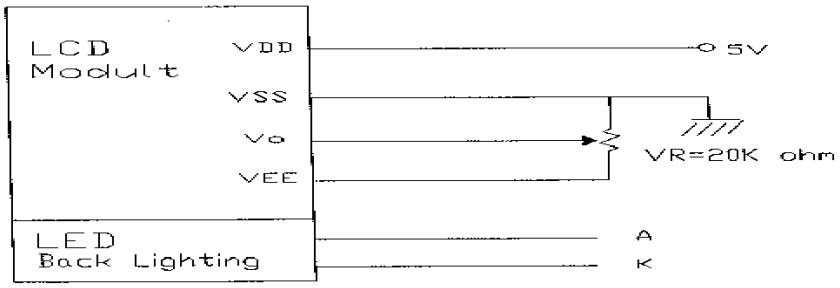
No	Symbol	Level	Function
1	V_{SS}	0V	Power Supply Ground
2	V_{DD}	5V	Power Supply Voltage
3	V_O	–	Contrast Adjustment Voltage
4	C/D	H/L	H : Data, L : Instruction Code
5	/RD	L	Read
6	/WR	L	Write
7~14	DBO~DB7	H/L	Data Bus Line
15	/CE	L	Enable Signal
16	/RST	L	Reset Signal
17	V_{EE}	–	Power Supply Voltage 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



Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle Range	ϕ f (12 o'clock)	When Cr ≥ 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 = 25ºC	–	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

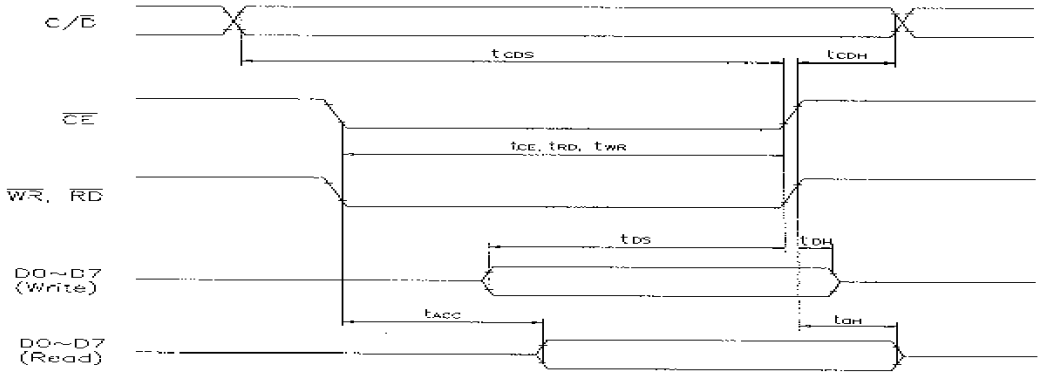
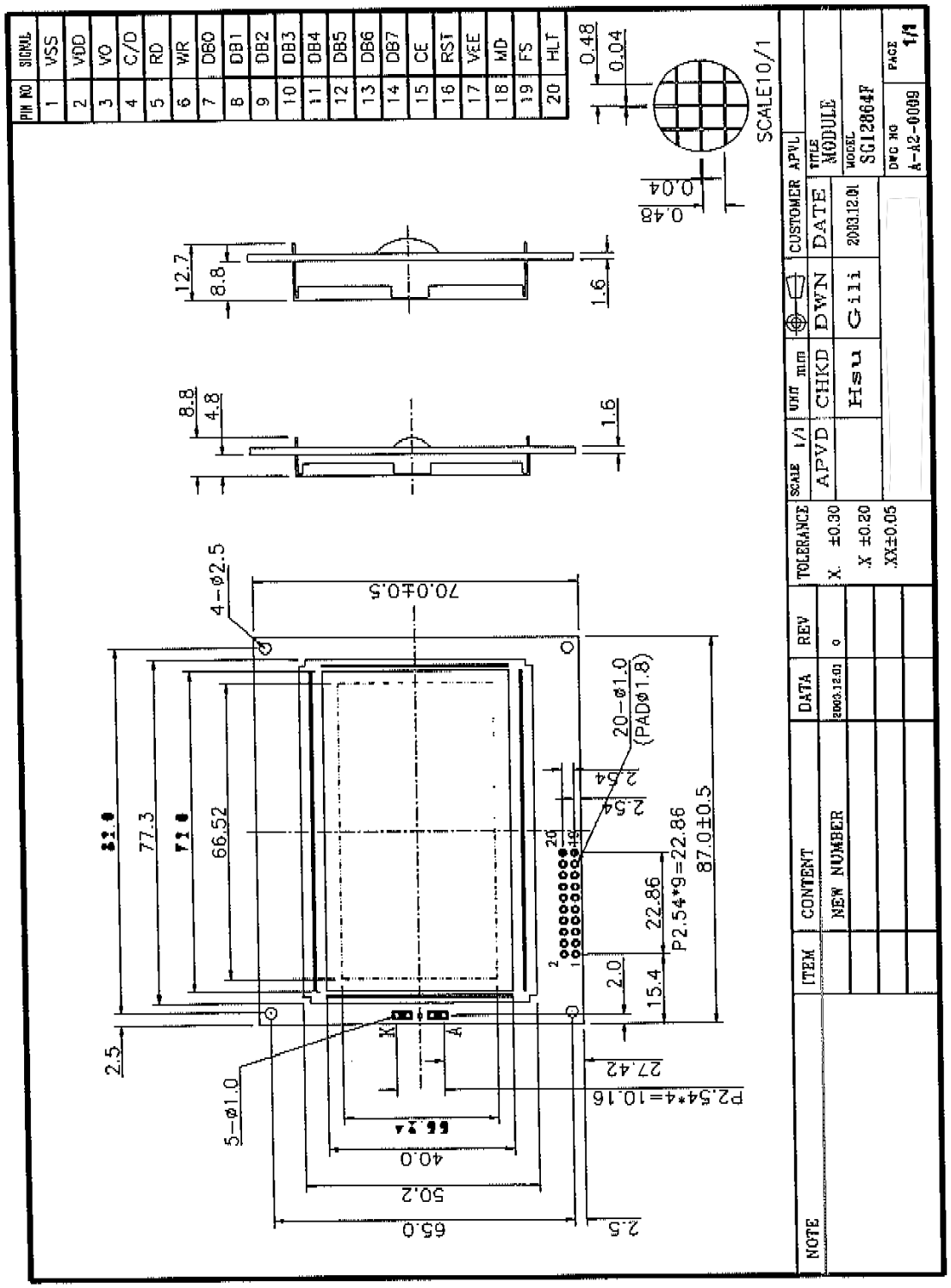
Item	Normal Temperature				Wide Temperature			
	Operating		Storage		Operating		Storage	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Ambient Temperature	0ºC	+50ºC	-20ºC	+70ºC	-20ºC	+70ºC	-30ºC	+80ºC
Humidity (without condensation)	Note 2, 4		Note 3, 5		Note 4, 5		Note 4, 6	

Note 2 Ta ≤ 50ºC: 80% RH max
Ta > 50ºC: Absolute humidity must be lower than the humidity of 85% RH at 50ºC.
Note 3 Ta at -20ºC will be < 48 hrs; at 70ºC 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 ≤ 70ºC: 75 RH max
Ta > 70ºC: absolute humidity must be lower than the humidity of 75% RH at 70ºC
Note 6 Ta at -30ºC will be < 48 hrs; at 80ºC will be <120 hrs when humidity is higher than 75%

AC Characteristic - (V_{DD} = 5.0V ± 10%, V_{SS} = 0V, Ta = 0 to 50ºC)

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



Mechanical Drawing