



AND081GST/GST-LED

1 Lines x 8 Characters Intelligent Character Display

The AND081GST/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

• RoHS Compliant

- AND081GST: Super Twist Technology (Yellow Green Positive)
- AND081GST-LED: STN with Yellow Green LED backlight
- Transflective Rear Voltage
- Built-in Controller (KS0066 or equivalent)
- 6 O'clock Viewing Angle
- RoHS compliant
- 5V Driving Voltage
- 8 Characters (W) x 1 Lines (H)

Mechanical Characteristics

Item	Specification	Unit
Module Size	60.0 (W) x 36.0 (H) x 10.0 (D) (13.0 LED)	mm
Viewing Area	48.0 (W) x 13.0 (H)	mm
Display Format	8 charcters (W) x 1 Lines (H)	–
Duty Ratio	1/16 Duty	–
Dot Size	0.85 (W) x 1.0 (H)	mm
Dot Pitch	0.90 (W) x 1.05 (H)	mm

Absolute Maximum Ratings - Electrical

Item	Symbol	Min.	Max.	Unit
Power Supply for Logic	$V_{DD} - V_{SS}$	-0.3	7.0	V
Power Supply for LCD	$V_{DD} - V_O$	-0.3	12.0	V
Input Voltage	V_I	-0.3	V_{DD}	V
LED Power Dissipation	P_{AD}	–	0.5	W
LED Forward Current	I_{AF}	–	105	mA
LED Reverse Voltage	V_R	–	8	V

Electrical Characteristics (TA = 25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for Logic	$V_{DD} - V_{SS}$	–	4.5	5.0	5.5	V
Input Voltage	V_{IL}	L level	0	–	0.6	V
	V_{IH}	H level	2.2	–	V_{DD}	V
LCM Recommend LCD Module Driving Voltage	$V_{DD} - V_O$	Ta=0°C	–	–	–	V
		Ta=25°C	4.2	4.5	4.8	
		Ta=50°C	–	–	–	
Power Supply Current for LCM	I_{DD}	$V_{DD} = 5V$ $V_{DD} - V_O = 4.5V$	–	1.5	2.0	mA
LED Forward Voltage	V_{IF}	If = 80 mA	–	4.2	4.6	V
LED Forward Current	I_F	–	–	80	–	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.



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Absolute Maximum Ratings - Environmental

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 ≤ 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 70%.

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

Note 5: Ta ≤ 70°C: 75RH 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 70%.

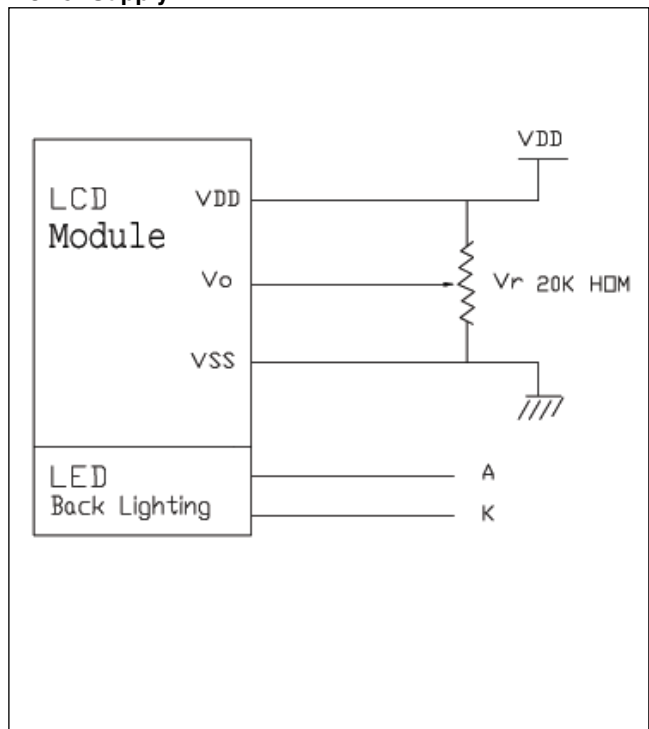
Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Viewing Angle Range	Φ f (12 o'clock)	When CR ≥ 1.4	—	10	—	Degree
	Φ b (6 o'clock)		—	30	—	
	Φ l (9 o'clock)		—	30	—	
	Φ r (3 o'clock)		—	30	—	
Rise Time	Tr	V _{DD} - V _O = 4.5V Ta = 25°C	—	100	200	ms
Fall Time	Tf		—	200	350	
Frame Frequency	Frm		—	64	—	Hz
Contrast	Cr		—	3.0	—	—
Brightness of Backlight	L	IF = 80 mA	80	110	—	cs/m ²
Peak Emission Wavelength	λ P		—	570	—	nm

Connector Pin Assignment

Pin No.	Pin Out	Level	Description
1	VSS	0V	Power Supply Ground
2	VDD	5V	Power Supply Voltage
3	VO	—	Contrast Adj.
4	RS	H/L	Register Select
5	R/W	H/L	Read / Write
6	E	H, H → L	Enable Signal
7	DB ₀	H/L	Data Bit 0
8	DB ₁		Data Bit 1
9	DB ₂		Data Bit 2
10	DB ₃		Data Bit 3
11	DB ₄		Data Bit 4
12	DB ₅		Data Bit 5
13	DB ₆		Data Bit 6
14	DB ₇		Data Bit 7
15	A	+4.2V	LED (+)
16	K	0V	LED (-)

Power Supply





The diagram illustrates the internal connections of the LCD module. It features three main components: an LCD CONTROLLER, an LCD PANEL, and an LED BACKLIGHT. The LCD CONTROLLER is connected to the LCD PANEL via COM8 and SEG40 signals. The LCD CONTROLLER also receives data (DB7, DB0) and control signals (E, R/W, RS, V₀, VDD, VSS) from the external system. The LED BACKLIGHT is powered by the A and K lines from the external system.

[illegible]