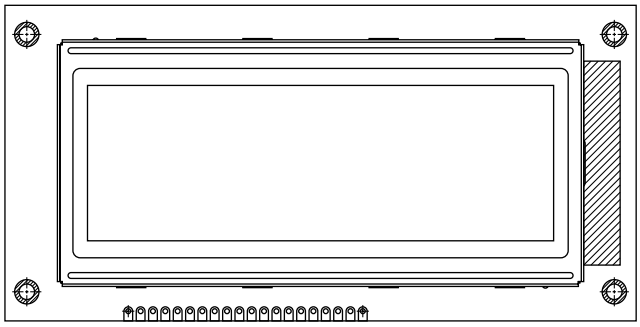
192 x 64 Graphic LCD



FEATURES

- Type: Graphic
- Display format: 192 x 64 dots
- Built-in controller: Samsung KS 0107/KS 0108 (or equivalent)
- Duty cycle: 1/64
- + 5 V power supply
- Optional N.V.
- Compliant to RoHS directive 2002/95/EC

Pb-free RoHS COMPLIANT

MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module Dimension	130.0 x 65.0	mm
Viewing Area	102.0 x 39.0	
Dot Size	0.458 x 0.458	
Dot Pitch	0.508 x 0.508	
Mounting Hole	121.0 x 53.0	
Character Size	N/a	

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	STANDARD VALUE			UNIT
		MIN.	TYP.	MAX.	
Power Supply	V_{DD} to V_{SS}	4.75	5.0	5.5	V
Input Voltage	V_I	0	-	V_{DD}	

Note

- V_{SS} = 0 V, V_{DD} = 5.0 V

ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	V_{DD}	V_{DD} = + 5 V	4.5	5.0	5.5	V
Supply Current	I_{DD}	V_{DD} = + 5 V	3.1	3.6	4.5	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	V_{DD} to V_0	- 20 °C	-	-	9.6	V
		0 °C	-	-	-	
		25 °C	-	-	-	
		50 °C	-	8.4	-	
		70 °C	7.6	-	-	
LED Forward Voltage	V_F	25 °C	3.4	4.2	4.6	V
LED Forward Current	I_F	25 °C	70	540	90	mA
EL Power Supply Current	I_{EL}	V_{EL} = 110 V_{AC}, 400 Hz	-	-	5.0	mA

OPTIONS

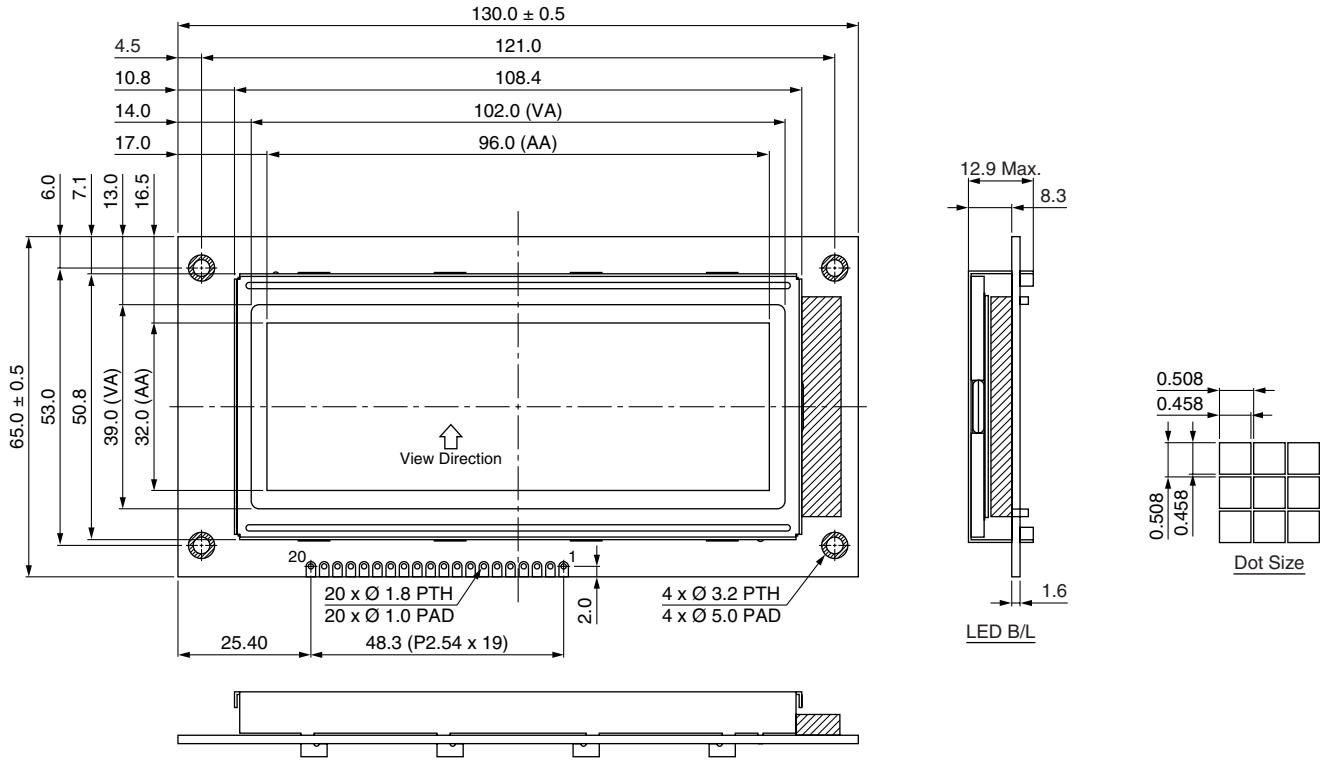
PROCESS COLOR						BACKLIGHT			
TN	STN Gray	STN Yellow	STN Blue	FSTN B&W	STN Color	None	LED	EL	CCFL
	x	x		x		x	x		

For detailed information, please see the “Product Numbering System” document.

INTERFACE PIN FUNCTION

PIN NO.	SYMBOL	FUNCTION
1	V_{SS}	Ground
2	V_{DD}	Supply voltage for logic
3	V_0/NC	Operating voltage for LCD/NC
4	R/S	H: Data/L: Instruction
5	R/W	H: Read data/L: Write data
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	CS1	Chip select IC1
16	RES	Reset signal
17	CS2	Chip select IC2
18	CS3	Chip select IC3
19	V_{EE}	Negative voltage output
20	A	+ 5.0 V for LED

DIMENSIONS in millimeters



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