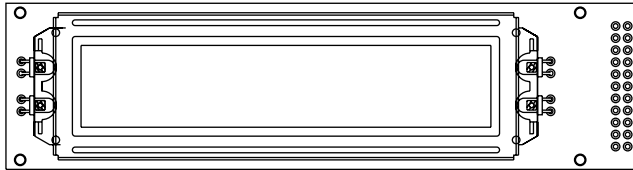


## 240 x 48 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 240 x 48 dots
- Built-in controller: Samsung KS 0107/KS 0108 (or equivalent)
- Duty cycle: 1/48
- + 5 V power supply
- Built-in N.V.
- LED can be driver by pin 21, pin 22, or A and K
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	133.0 x 35.0	mm
Viewing Area	90.0 x 21.0	
Dot Size	0.32 x 0.32	
Dot Pitch	0.36 x 0.36	
Mounting Hole	118.0 x 31.0	
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	5.25	V
Input Voltage	$V_I$	- 0.3	-	$V_{DD}$	

#### Note

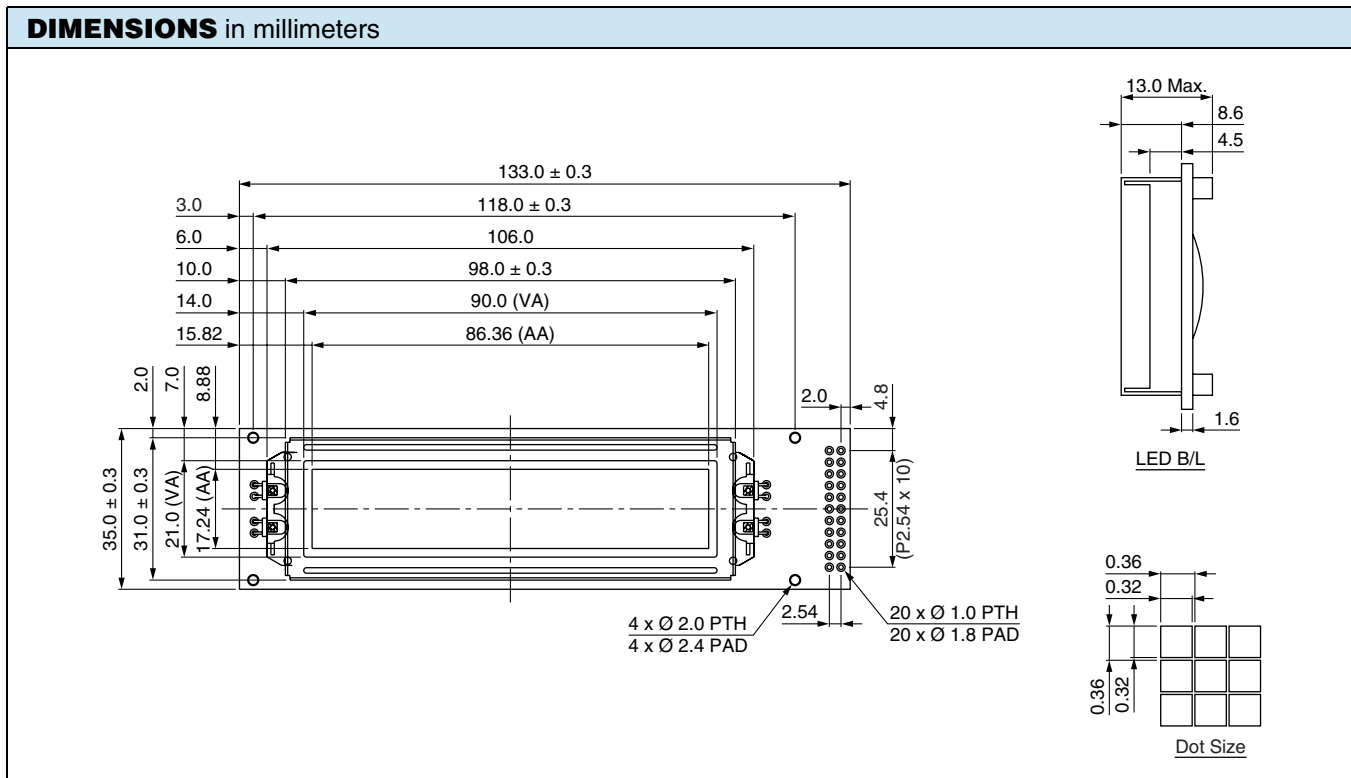
- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

ELECTRICAL CHARACTERISTICS						
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	$V_{DD}$	-	4.5	5.0	5.5	V
Supply Current	$I_{DD}$	$V_{DD} = + 5$ V	6.0	8.0	12.0	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	- 20 °C	-	-	11.3	V
		25 °C	-	11.0	-	
		70 °C	10.7	-	-	
CCFL Starting Voltage	$V_{FLS}$	25 °C	-	-	-	$V_{RMS}$
CCFL Driving Voltage	$V_{FLD}$	25 °C	-	-	-	$V_{RMS}$
CCFL Driving Current	$I_{FLD}$	$V_{FQ} = 450 V_{RMS}, 30$ kHz	-	-	-	$mA_{RMS}$
LED Forward Voltage	$V_F$	25 °C	3.4	3.5	3.6	V
LED Forward Current	$I_F$	25 °C	64.0	80.0	120.0	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	PIN NO.	FUNCTION
1	V <sub>SS</sub>		Ground
2	V <sub>DD</sub>		Power supply for logic
3	V <sub>0</sub>		Power supply for LCD
4	D/I		H: Data/L: Instruction
5	R/W		H: Read data/L: Write data
6	E		Enable signal for chip
7	RESET		Reset signal
8	DB0		Data bus line
9	DB1		Data bus line
10	DB2		Data bus line
11	DB3		Data bus line
12	DB4		Data bus line
13	DB5		Data bus line
14	DB6		Data bus line
15	DB7		Data bus line
16	CS1		Chip select signal for IC1
17	CS2		Chip select signal for IC2
18	CS3		Chip select signal for IC3
19	CS4		Chip select signal for IC4
20	V <sub>EE</sub>		Negative voltage output
21	A		Power supply for backlight
22	K		Power supply for backlight





## Disclaimer

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