

# LCG-240M64, LCD Graphic Module 240 x 64



## ■ FEATURES

- ◆ BUILT-IN CONTROLLER (T6963C OR EQUIVALENT)
- ◆ +5 V POWER SUPPLY
- ◆ 1/64 DUTY CYCLE
- ◆ EDGE LIGHTING TYPE LED BACKLIGHT
- ◆ EDGE LIGHTING TYPE CCFL BACKLIGHT

## ■ MECHANICAL DATA

ITEM	DIMENSIONS	UNIT
Module Size (W x H x T)	180.0 x 65.0 x 9.7 ( 13.8 LED )	mm
Viewing Area ( W x H )	134.0 x 40.4	mm
Active Area ( W x H )	127.16 x 33.88	mm
Dot Size ( W x H )	0.49 x 0.49	mm
Dot Pitch ( W x H )	0.53 x 0.53	mm

## ■ INTERFACE PIN CONNECTIONS

NO.	SYMBOL	LEVEL	FUNCTION
1	FGND	-	For GND
2	V <sub>SS</sub>	0V	Power Supply Ground
3	V <sub>DD</sub>	5V	Power Supply Voltage
4	V <sub>o</sub>	-	Contrast Adjustment Voltage
5	/WR	L	Read Signal
6	/RD	L	Write Signal
7	/CE	L	Enable Signal
8	C/D	H/L	H : Data, L : Instruction Code
9	NC	-	No Connection
10	/RST	L	Reset Signal
11~18	DB0~DB7	H/L	Data Bus Line
19	FS	H/L	H : 6*8, L : 8*8 Select Of Columns
20	NC	-	No Connection

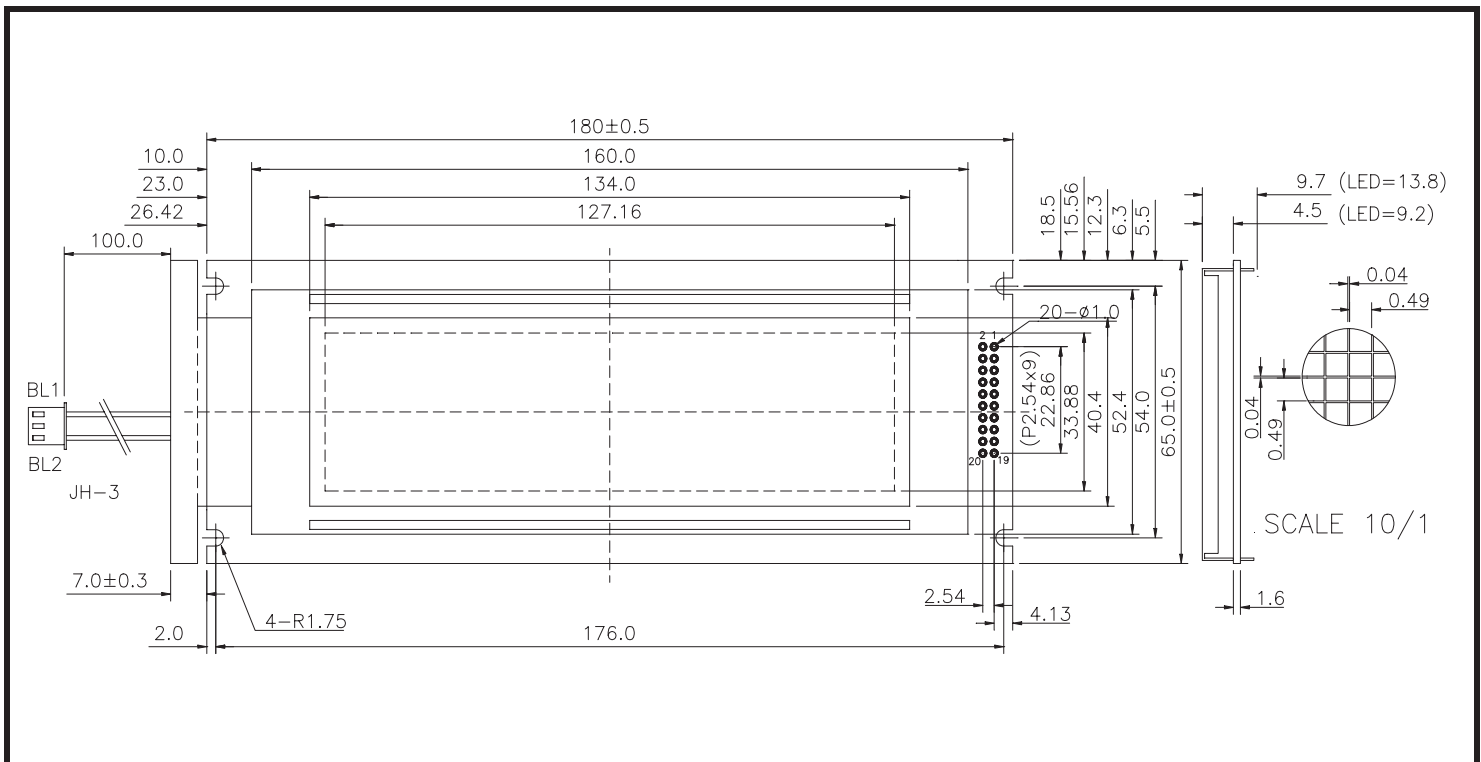
## ■ ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage For Logic	V <sub>DD</sub> -V <sub>SS</sub>	0	-	7	V
Supply Voltage For LCD Drive	V <sub>DD</sub> -V <sub>o</sub>	0	-	21	V
Input Voltage	V <sub>i</sub>	V <sub>SS</sub>	-	V <sub>DD</sub>	V

## ■ ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
Supply Voltage For Logic	V <sub>DD</sub> -V <sub>SS</sub>	-	4.5	5	5.5	V	
Supply Voltage For LCD	V <sub>DD</sub> -V <sub>o</sub>	V <sub>DD</sub> =5V Ta=25°C	10.8	12.2	13.1	V	
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	12	23	mA	
Input Voltage	"HIGH" Level	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub>	V
	"LOW" Level	V <sub>IL</sub>	-	-	-	0.6	V
Output Voltage	"HIGH" Level	V <sub>OH</sub>	-	2.4	-	-	V
	"LOW" Level	V <sub>OL</sub>	-	-	-	0.4	V

## ■ EXTERNAL DIMENSIONS

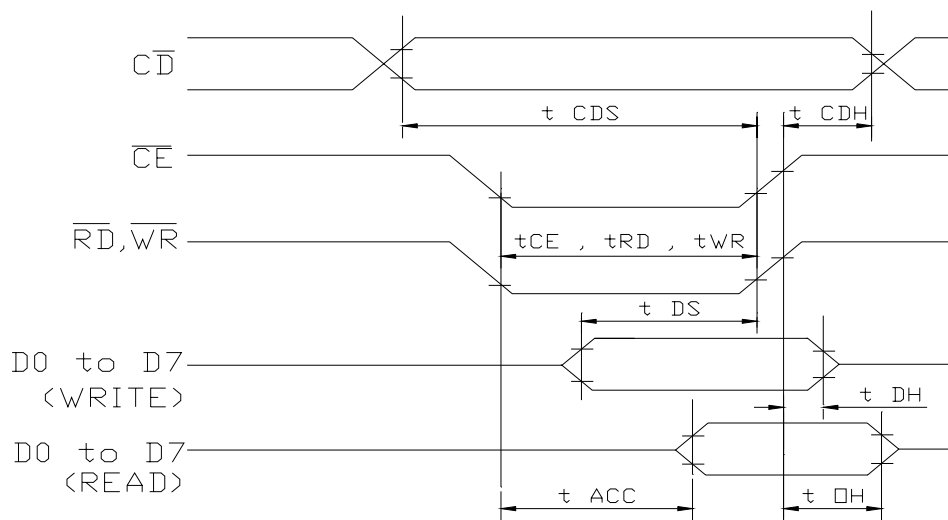


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## ■ TIMING CHARACTERISTICS

ITEM	SYMBOL	MIN.	MAX.	UNIT.
C/D Setup Time	$t_{CDS}$	100	-	ns
C/D Hold Time	$t_{CDH}$	10	-	ns
CE, RD,WR Pulse Width	$t_{CE}, t_{RD}, t_{WR}$	80	-	ns
Data Setup Time	$t_{DS}$	80	-	ns
Data Hold Time	$t_{DH}$	40	-	ns
Access Time	$t_{ACC}$	-	150	ns
Output Hold Time	$t_{OH}$	10	50	ns

Bus Timing



## ■ BLOCK DIAGRAM

