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PRODUCT SPECIFICATION

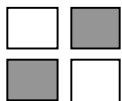
MONOCHROME LCD MODULE

PART NUMBER : FGD192032B

DESCRIPTION : 32x192Graphic

REVISION : Rev A

<input type="checkbox"/>	Approval for Specification only	<input type="checkbox"/>	Approval for Sample Only
<input type="checkbox"/>	Approval for Pre-production	<input checked="" type="checkbox"/>	Approval for Mass Production



FGD192032B (192 DOTS X 32 DOTS)

FEATURES

- ◆ BUILT-IN CONTROLLER (SED1520 OR EQUIVALENT)
- ◆ +5 V POWER SUPPLY
- ◆ 1/32 DUTY CYCLE
- ◆ 8-BIT PARALLEL INTERFACE
- ◆ 4.2 V LED FORWARD VOLTAGE

MECHANICAL DATA

ITEM	DIMENSIONS	UNIT
Module Size (W x H x T)	116.0 x 37.0 x 9.4 (10.8 LED)	mm
Viewing Area (W x H)	88.0 x 19.0	mm
Active Area (W x H)	80.6 x 16.28	mm
Dot Size (W x H)	0.38 x 0.47	mm
Dot Pitch (W x H)	0.42 x 0.51	mm

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	A _o	H/L	Data Type Select Signal
5	R/W	H/L	H : Read / L : Write
6	E	H→L	Enable Signal
7-14	DB0-DB7	H/L	Data Bus Line
15	A	4.2V	LED Power (+)
16	K	0V	LED Power (-)
17	CS1	H	Chip Select Signal For IC1
18	CS2	H	Chip Select Signal For IC2
19	CS3	H	Chip Select Signal For IC3
20	CL	H/L	Clock Input (2 KHz)

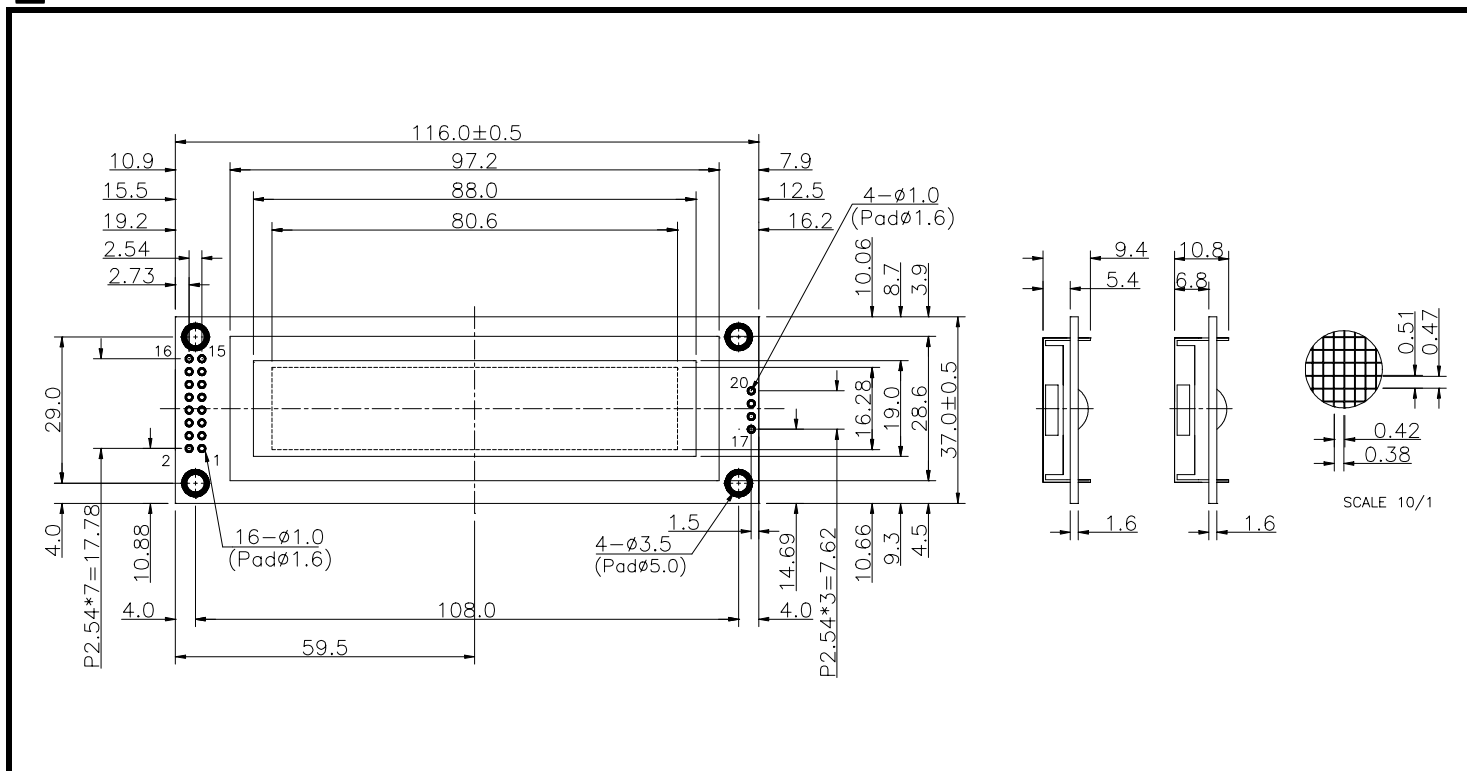
ABSOLUTE MAXIMUM RATINGS

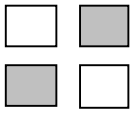
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage For Logic	V _{DD} -V _{SS}	0	-	7	V
Supply Voltage For LCD Drive	V _{DD} -V _o	0	-	12	V
Input Voltage	V _I	V _{SS}	-	V _{DD}	V

ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
Supply Voltage For Logic	V _{DD} -V _{SS}	-	4.5	5	5.5	V	
Supply Voltage For LCD	V _{DD} -V _o	V _{DD} =5V Ta=25°C	4.4	4.8	5.2	V	
Supply Current	I _{DD}	V _{DD} =5V	-	3	4.5	mA	
Input Voltage	"HIGH" Level	V _{IH}	-	2.2	-	V _{DD}	V
	"LOW" Level	V _{IL}	-	-	-	0.6	V
Output Voltage	"HIGH" Level	V _{OH}	-	2.4	-	V	V
	"LOW" Level	V _{OL}	-	-	-	0.4	V

EXTERNAL DIMENSIONS

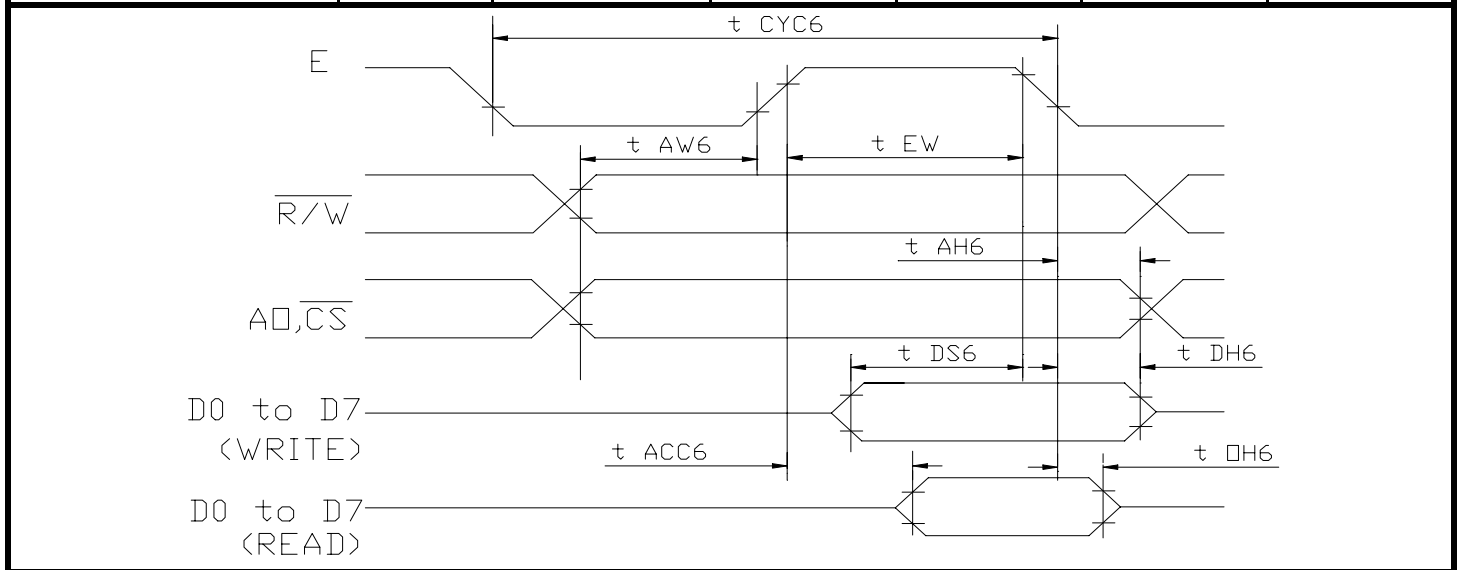




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■ TIMING CHARACTERISTICS

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT.
System Cycle Time	t_{CYC6}	1000	-	-	ns
Address Set-up Time	t_{AW6}	20	-	-	ns
Address Hold Time	t_{AH6}	10	-	-	ns
Data Set-up Time	t_{DS6}	80	-	-	ns
Data Hold Time	t_{DH6}	10	-	-	ns
Output Disable Time	t_{OH6}	10	-	60	ns
Access Time	t_{ACC6}	-	-	90	ns
Enable Pulse Width	Read	t_{EW}	-	-	ns
	Write				80



■ BLOCK DIAGRAM

