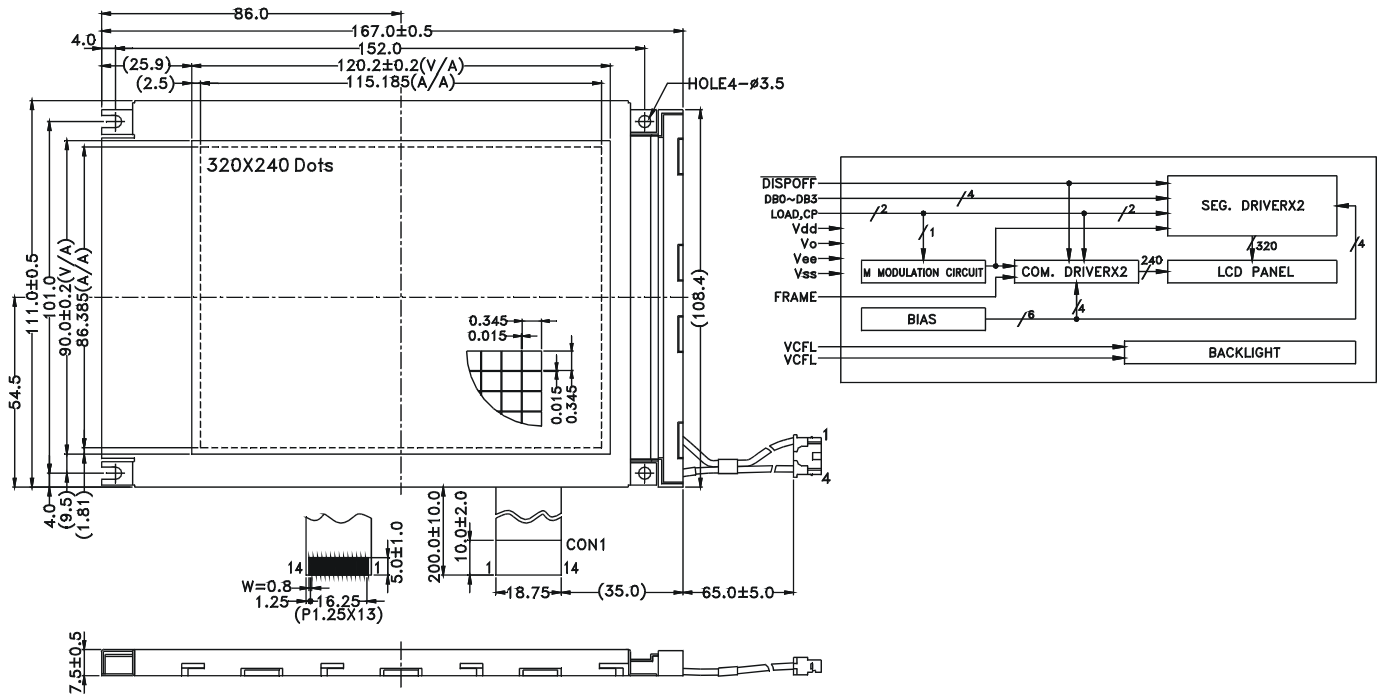


## OUTLINE DIMENSION & BLOCK DIAGRAM



### MECHANICAL SPECIFICATION

Overall Size	167.0 x 111.0 mm	Module	H2 / H1
View Area	120.2 x 90.0 mm	W/O B/L	- / -
Dot Size	0.345 x 0.345 mm	EL B/L	- / -
Dot Pitch	0.360 x 0.360 mm	CCFL B/L	- / 7.5 mm

### PIN ASSIGNMENT

Pin No.	Symbol	Function
1	DB0	Data input
2	DB1	Data input
3	DB2	Data input
4	DB3	Data input
5	/DISPOFF	Driver on(H)/off(L) enable
6	FRAME	First line mark
7	NC	No connection
8	LOAD	Input data latch signal
9	CP	Data input shift signal
10	V <sub>DD</sub>	Logic power supply
11	V <sub>SS</sub>	Ground
12	V <sub>EE</sub>	Negative voltage
13	V <sub>0</sub>	Contrast adjust
14	V <sub>SS</sub>	Ground

### ABSOLUTE MAXIMUM RATING

Item	Symbol	Condition	Min.	Max.	Units
Supply for logic voltage	V <sub>DD</sub> -V <sub>SS</sub>	25°C	4.75	5.25	V
LCD driving supply voltage	V <sub>DD</sub> -V <sub>EE</sub>	25°C	22.0	23.4	V
Input Voltage	V <sub>IN</sub>	25°C	-0.4	V <sub>DD</sub> +0.3	V

### ELECTRICAL CHARACTERISTICS

Item	Symbol	Condition	Min.	Typical	Max.	Units			
Power supply voltage	V <sub>DD</sub> -V <sub>SS</sub>	25°C	2.7	5.0	5.5	V			
LCD operation voltage (V <sub>DD</sub> =5v)	V <sub>OP</sub>	T <sub>OP</sub>	N	W	N	W	V		
		-20°C	-	23.5	-	24.0	-	24.5	V
		0°C	-	-	-	-	-	-	V
		25°C	-	22.5	-	23.0	-	23.5	V
		50°C	-	-	-	-	-	-	V
		70°C	-	20.5	-	21.0	-	21.5	V
LCM current consumption (No B/L)	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	1.0	2.0	mA			
	I <sub>EE</sub>	V <sub>DD</sub> =5V	-	4.0	10.0	mA			
Backlight current consumption	White LED	B/L=3.3V	-	160	--	mA			

### REMARK

LCD option: STN, FSTN

Backlight Option: CCFL, white LED backlight