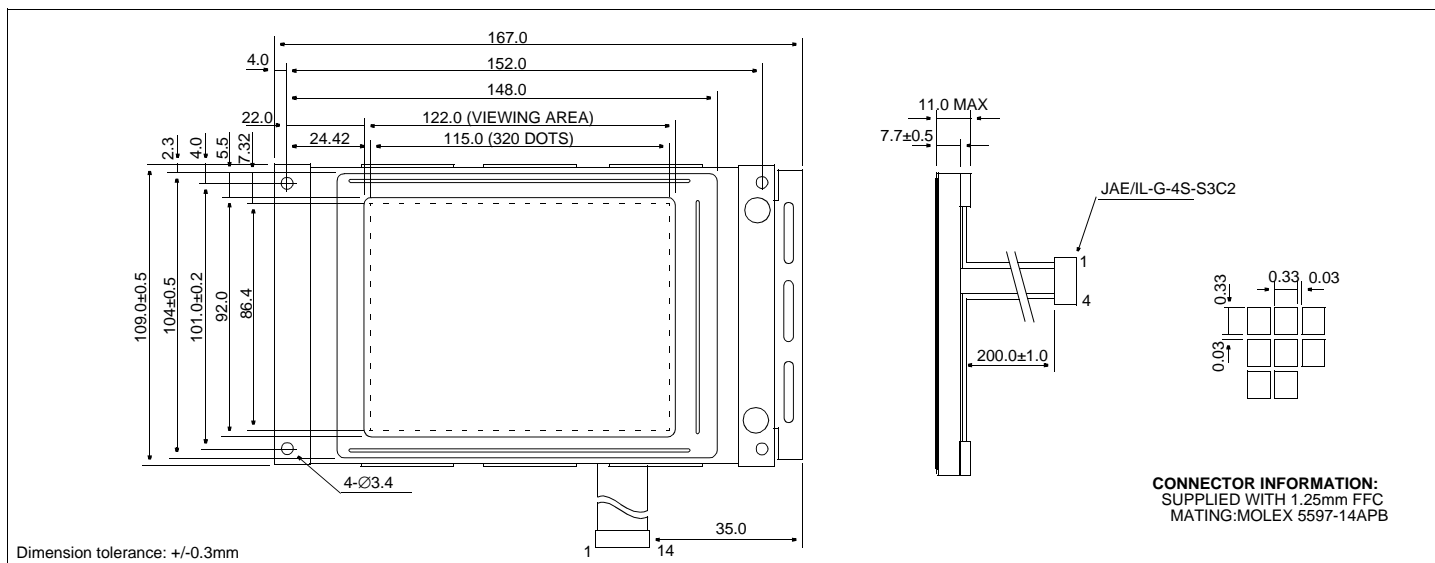


HDM3224-1

320 X 240 Dots Graphic CCFL Backlight

Dimensional Drawing



Features

- Backlight.....CCFL
- Options.....STN/Black and White FSTN
- Normal/Extended Temperature
- Bottom / Top Viewing
- Built-in Controller.....None

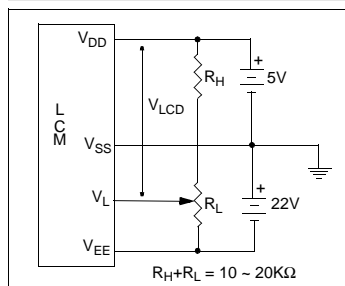
Physical Data

- Module Size.....167.0W x 109.0H x 11.0T mm
- Viewing Area Size.....122.0W x 92.0H mm
- Dot Pitch.....0.36W x 0.36H mm
- Dot Size.....0.33W x 0.33H mm
- Weight.....205g

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{DD}-V_{EE}$	0	30.0	V
INPUT VOLTAGE	V_{IN}	-	7.0	V
OPERATING TEMPERATURE	T_{OP}	0	50	°C
STORAGE TEMPERATURE	T_{STG}	-20	70	°C
CCFL OPERATING VOLTAGE	V_{FL}	-	1000	Vrms
CCFL OPERATING CURRENT	I_{FL}	-	10	mA
CCFL OPERATING FREQUENCY	f_{FL}	15	50	KHz

Power Supply



Electrical Characteristics (VDD=5.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT HIGH VOLTAGE	V_{IH}	-	0.7 V_{DD}	-	-	V
INPUT LOW VOLTAGE	V_{IL}	-	-	-	0.3 V_{DD}	V
OUTPUT HIGH VOLTAGE	V_{OH}	$I_{OH}=0.4mA$	$V_{DD}-0.4$	-	-	V
OUTPUT LOW VOLTAGE	V_{OL}	$I_{OL}=0.4mA$	-	-	0.4	V
SUPPLY VOLTAGE	V_{DD}	-	4.5	5.0	5.5	V
	$-V_L$	-	19.5	18.5	17.8	V
DRIVE METHOD	1/240 DUTY					

Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
DATA CONNECTOR			
1	D0	H/L	Display Data
2	D1		
3	D2		
4	D3		
5	DISPOFF	H/L	H=On, L=Off
6	FRAME	H	First Line Marker
7	NC	-	No Connection
8	LOAD	H/L	Data Latch
9	CP	H/L	Data shift
10	vDD	5V	Power supply for logic
11	V_{SS}	0V	Ground
12	V_{EE}	-22V	Power supply for LCD
13	V_L	-	Operating voltage for LC
14	FGND	-	Front panel ground
CCFL CONNECTOR			
1	V_{CFL}	-	Power supply for CCFL
2	NC	-	No Connection
3	NC	-	No Connection
4	V_{CFL}	-	CCFL Ground