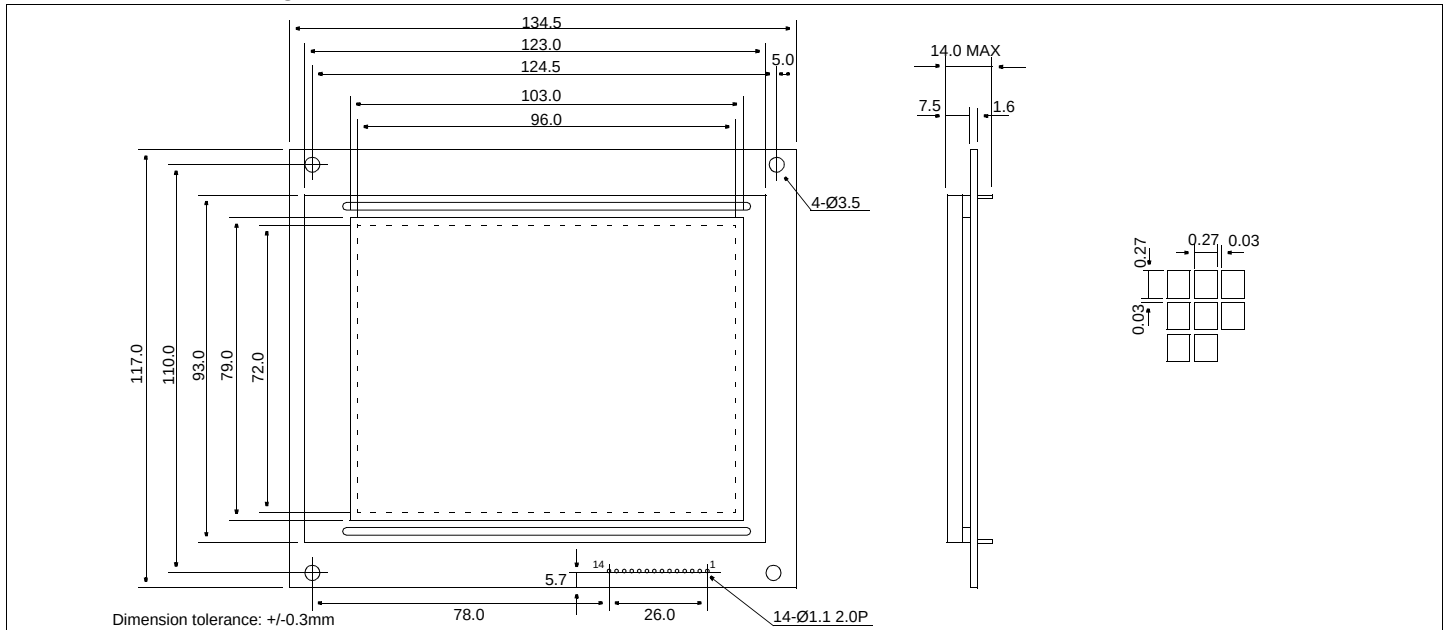


HDM3224-5

Dimensional Drawing

320 X 240 Dots Graphics LED Backlight



Features

Backlight.....LED
Options.....Gray STN / Yellow STN / FSTN
Normal/Extended Temperature
Bottom / Top Viewing
Built-in Controller.....None

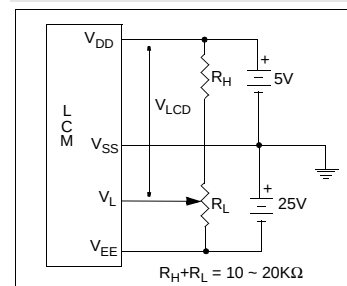
Physical Data

Module Size.....134.5W x 117.0H x 14.0T mm
Viewing Area Size.....103.0W x 79.0H mm
Dot Pitch.....0.30W x 0.30H mm
Dot Size.....0.27W x 0.27H mm
Weight.....190g

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{DD}-V_L$	0	26.0	V
INPUT VOLTAGE	V_{IN}	-	7.0	V
OPERATING TEMPERATURE	T_{OP}	0	50	$^{\circ}\text{C}$
STORAGE TEMPERATURE	T_{STG}	-20	70	$^{\circ}\text{C}$

Power Supply



Electrical Characteristics (VDD=5.0 $\pm$ 0.25V 25 $^{\circ}\text{C}$)

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}	$I_{OH}=0.4\text{mA}$	$V_{DD}-0.4$	-	-	V
OUTPUT LOW VOLTAGE	V_{OL}	$I_{OL}=0.4\text{mA}$	-	-	0.4	V
SUPPLY VOLTAGE	V_{DD}	-	4.5	5.0	5.5	V
	$-V_{EE}$	-	-	22.7	-	V
POWER SUPPLY CURRENT	I_{DD}	$V_{DD}=5.0\text{V}$	-	9.0	18.0	mA
	$-I_{EE}$	$V_{EE}=-22.7\text{V}$	-	10.0	20.0	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25^{\circ}\text{C}$	-	22.7	-	V
LED POWER SUPPLY	V_{LED}		21.0	24.0	27.0	V
BRIGHTNESS	L		-	-	-	NIT
LED CURRENT	I_{LED}	$V_{LED}=24\text{V}$	-	40	50	mA
WHITE LED POWER SUPPLY	V_{LED}		-	9.8	-	V
WHITE LED CURRENT	I_{LED}	$V_{LED}=9.8\text{V}$	-	35.0	-	mA
BRIGHTNESS (WHITE LED)	L		-	9.4	-	NIT
FRAME FREQUENCY	f_{FP}	-	65	72	80	Hz
DRIVE METHOD	1/240 DUTY					

Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	V_L	-	Operating voltage for LC
2	V_{EE}	-	Power supply voltage for LC
3	DB3	H/L	Data bus
4	DB2	H/L	
5	DB1	H/L	
6	DB0	H/L	
7	V_{SS}	-	Ground
8	V_{DD}	+5v	Logic Power Supply
9	CL2	H/H $\rightarrow$ L	Data Shift
10	CL1	H/H $\rightarrow$ L	Data latch signal
11	FLM	H/L	Frame Pulse
12	K	-	Cathode, LED Back light
13	A	-	Anode, LED Back light
14	NC	-	No Connection