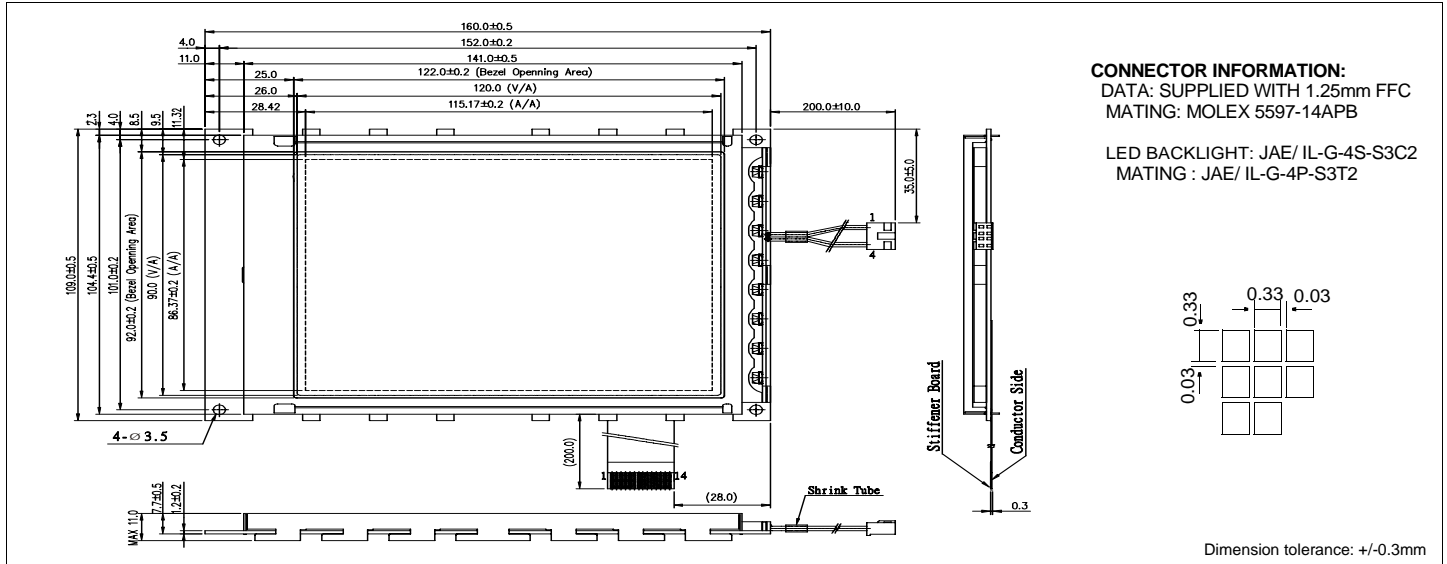


HDM 3224L-1

Dimensional Drawing

320 X 240 Dots Graphic LED Backlight



Features

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

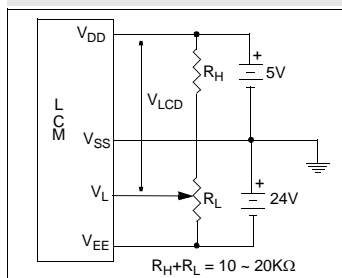
Physical Data

- Module Size.....160.0W 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.....199g

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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
SUPPLY VOLTAGE	V _{DD}	-	4.5	5.0	5.5	V
	V _{LCD}	-	22.8	23.1	23.4	V
SUPPLY CURRENT	I _{DD}	FLM= 70Hz V _{LCD} =23.1V	-	4.51	6.77	mA
	I _{EE}	-	-	3.85	5.78	mA
BRIGHTNESS	L	All Dots on	-	4.51	6.77	cd/m ²
		All Dots off	-	3.85	5.78	
LED FORWARD VOLTAGE	V _{AK}	I _{AK} =150mA	4.6	5	5.4	V
LED FORWARD CURRENT	I _{AK}	V _{AK} =5V	-	150	160	mA
DRIVE METHOD	1/240 DUTY					

Power Supply



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	V _{DD}	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
LED Backlight CONNECTOR			
1	A	-	Power supply for LED
2	NC	-	No Connection
3	NC	-	No Connection
4	K	-	Ground

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}	-	V _{DD} +0.3	V
OPERATING TEMPERATURE	T _{OP}	0	50	°C
STORAGE TEMPERATURE	T _{STG}	-20	70	°C