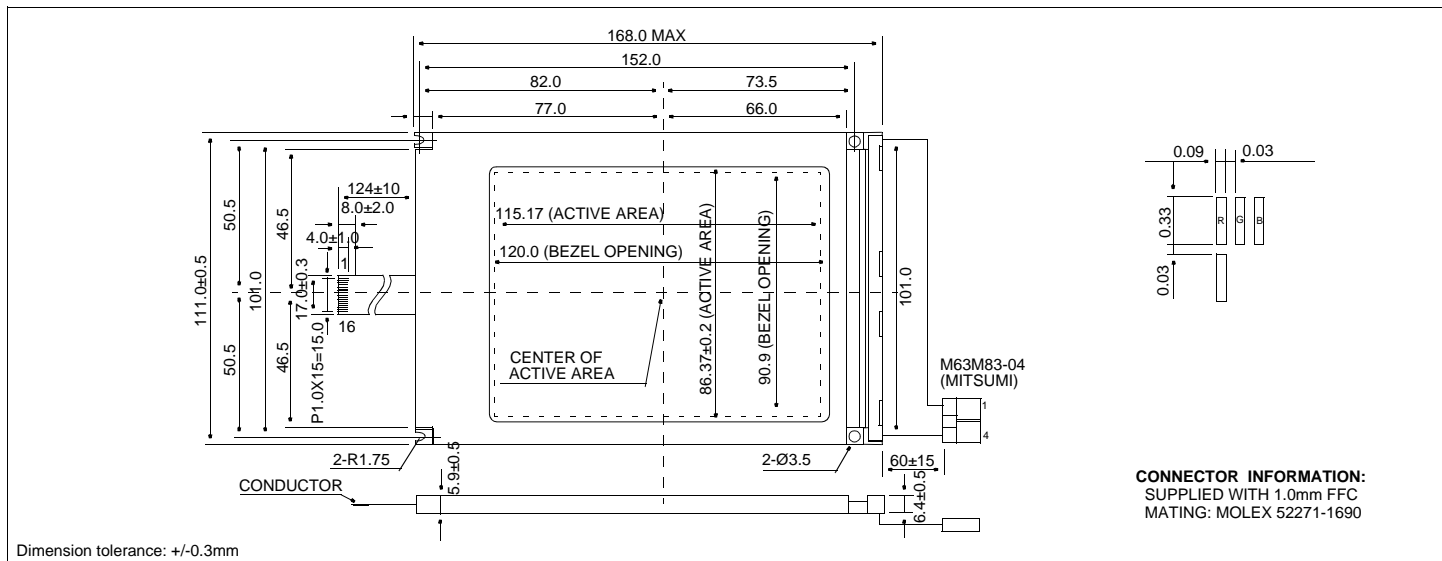


# HDM3224-C

## Dimensional Drawing

320 X 240 Dots Color Graphic CCFL Backlight



### Features

- Backlight.....CCFL
- Options.....Color RGB
- Normal/Extended Temperature
- Bottom Viewing
- Built-in Controller.....None

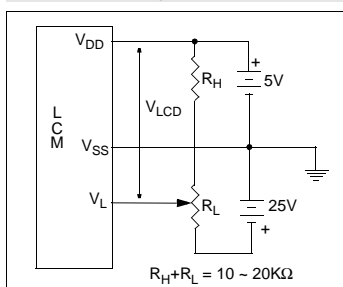
### Physical Data

- Module Size.....168.0W x 111.0H x 6.4T mm
- Viewing Area Size.....120.0W x 90.0H mm
- Dot Pitch.....0.36W x 0.36H mm
- Dot Size.....0.09W x 0.33H mm
- Weight.....280g

### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{EE}$	0	42.0	V
INPUT VOLTAGE	$V_{IN}$	-0.3	7.0	V
OPERATING TEMPERATURE	$T_{OP}$	0	50	°C
STORAGE TEMPERATURE	$T_{STG}$	-20	70	°C
OPERATING TEMPERATURE (WT)	$T_{OP}$	-20	70	°C
STORAGE TEMPERATURE (WT)	$T_{STG}$	-30	80	°C

### Power Supply



### Electrical Characteristics ( $V_{DD}=5.0\pm 0.25V$ 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}$	-	4.5	5.0	5.5	V
	$V_L$	-	23.3	23.5	23.6	V
INPUT HIGH VOLTAGE	$V_{IH}$	-	.8 $V_{DD}$	-	$V_{DD}$	V
INPUT LOW VOLTAGE	$V_{IL}$	-	0	-	.2 $V_{DD}$	V
CCFL OP. VOLTAGE	$V_{FL}$	-	-	320	-	$V_{rms}$
CCFL OP. CURRENT	$I_{FL}$	-	4	5	6	$mA_{rms}$
CCFL START VOLTAGE	$V_{FLS}$	$T_A = 0^\circ C$	-	455	-	$V_{rms}$
CCFL FREQUENCY	$F_{FL}$	-	20	35	50	KHZ
DRIVE METHOD	1/240 DUTY					

### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
<b>DATA CONNECTOR</b>			
1	FRAME	H	First Line Marker
2	LOAD	H/L	Data Latch
3	CP	H/L	Data shift
4	DISPOFF	H/L	H=On, L=Off
5	$V_{DD}$	5V	Power supply for logic
6	$V_{SS}$	0V	Ground
7	$V_L$	-	Operating voltage for LC
8	D0	H/L	Data bus
9	D1	H/L	
10	D2	H/L	
11	D3	H/L	
12	D4	H/L	
13	D5	H/L	
14	D6	H/L	
15	D7	H/L	
16	$V_{SS}$	0V	
<b>CCFL CONNECTOR</b>			
1	$V_{CFL}$	-	Power supply for CCFL
2	NC	-	No Connection
3	NC	-	No Connection
4	$V_{CFL}$	-	CCFL Ground