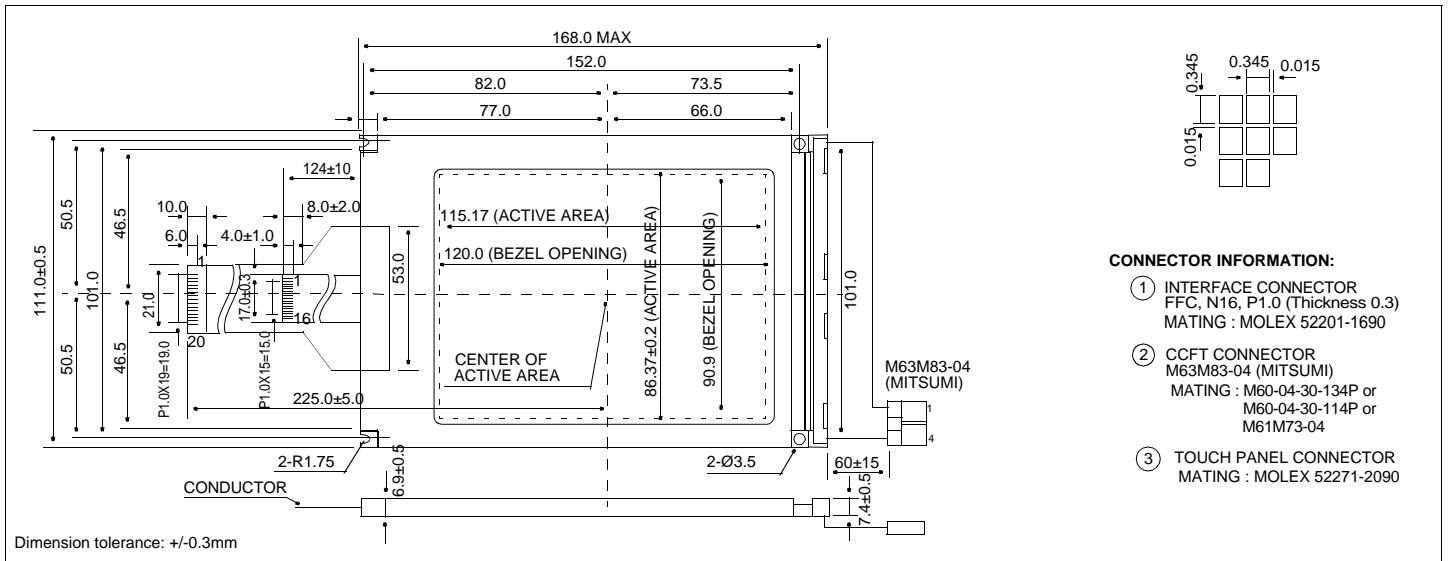


# HDM3224TS-2

320 X 240 Dots Graphic CCFL Backlight w/Touch Screen

## Dimensional Drawing



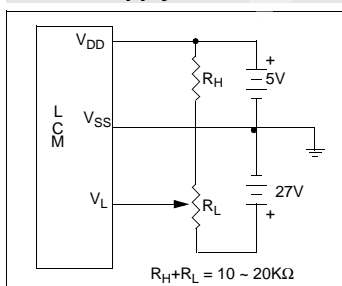
### Features

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

### Physical Data

Module Size.....168.0W x 111.0H x 9.0T mm  
 Viewing Area Size.....120.0W x 90.0H mm  
 Dot Pitch.....0.36W x 0.36H mm  
 Dot Size.....0.345W x 0.345H mm  
 Weight.....230g

### Power Supply



### Electrical Characteristics ( $V_{DD}=5.0\pm 0.25V$ , $T_a=25^\circ C$ )

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}$	-	4.75	5.0	5.25	V
	$V_{LCD}$	-	22.1	22.5	22.9	V
SUPPLY CURRENT	$I_{DD}$	FLM=70 Hz	-	0.6	0.9	mA
	$I_{LCD}$	$V_{LCD}=22.5V$	-	6.0	10.4	mA
CCFL OP. VOLTAGE	$V_{FL}$	-	-	260	-	Vrms
CCFL OP. CURRENT	$I_{FL}$	-	2	5	6	mA
CCFL OP. FREQUENCY	$F_L$	-	20	35	50	KhZ
DRIVE METHOD	1/240 DUTY					

### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{EE}-V_{SS}$	0	30.0	V
INPUT VOLTAGE	$V_{IN}$	-0.3	$V_{DD}$	V
OPERATING TEMPERATURE	$T_{OP}$	0	50	$^\circ C$
STORAGE TEMPERATURE	$T_{STG}$	-20	70	$^\circ C$

### 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 - 11	D0 - D3	H/L	Data Bus
12 - 15	D4 - D7	-	No Connection
16	$V_{SS}$	0V	Ground
<b>CCFL CONNECTOR</b>			
1	$V_{CFL}$	-	Power supply for CCFL
2	NC	-	No Connection
3	NC	-	No Connection
4	$V_{CFL}$	-	CCFL Ground

### Touch Panel Connector

PIN	SYM	PIN	SYM	PIN	SYM	PIN	SYM	PIN	SYM
1	N.C	5	C7	9	R2	13	R6	17	C2
2	C10	6	C6	10	R3	14	R7	18	C3
3	C9	7	N.C.	11	R4	15	N.C.	19	C4
4	C8	8	R1	12	R5	16	C1	20	C5