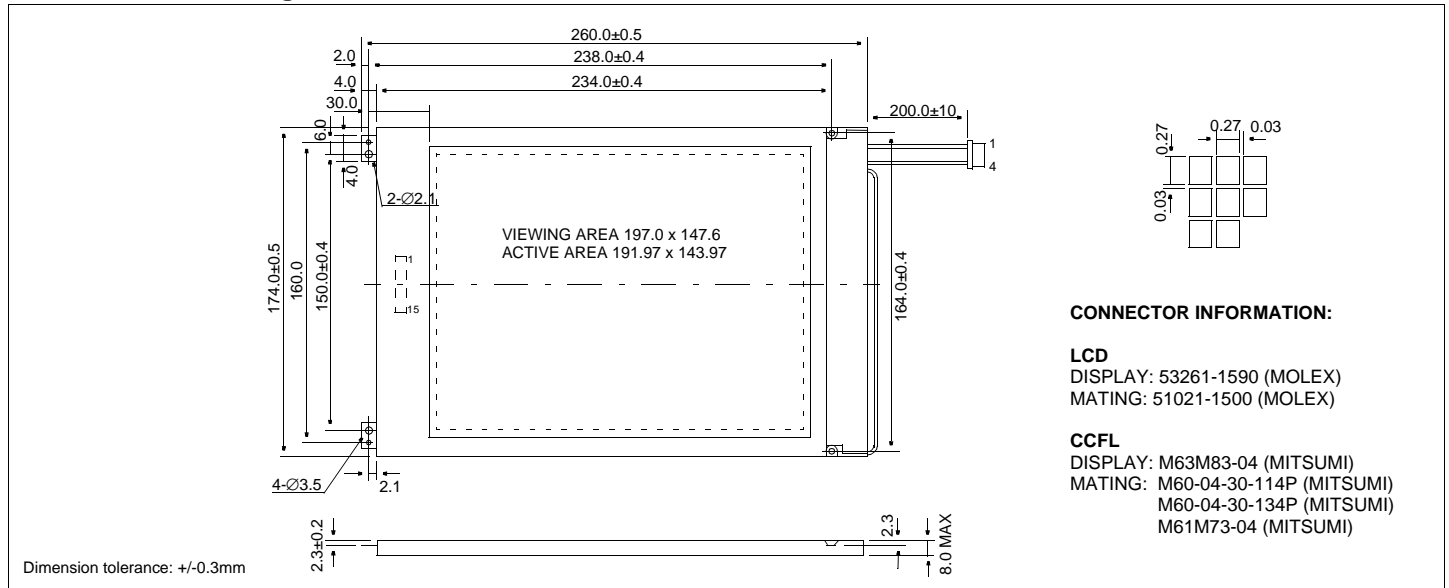


HDM6448-1

Dimensional Drawing

640 X 480 9.5" VGA Monochrome



CONNECTOR INFORMATION:

LCD

DISPLAY: 53261-1590 (MOLEX)
MATING: 51021-1500 (MOLEX)

CCFL

DISPLAY: M63M83-04 (MITSUMI)
MATING: M60-04-30-114P (MITSUMI)
M60-04-30-134P (MITSUMI)
M61M73-04 (MITSUMI)

Features

Backlight.....CCFL
Options.....Black and White FSTN
Built-in Controller.....None

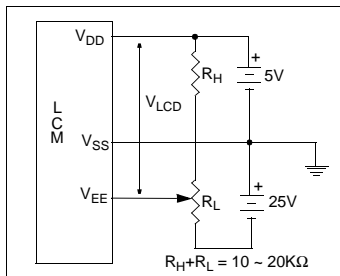
Physical Data

Module Size.....260.0W x 174.0H x 8.0T mm
Viewing Area Size.....197.0W x 147.6H mm
Dot Pitch.....0.30W x 0.30H mm
Dot Size.....0.27W x 0.27H mm
Weight.....354g

Absolute Maximum Ratings

| PARAMETER | SYMBOL | MIN | MAX | UNIT |
|----------------------------|-----------------|------|--------------|-------|
| SUPPLY VOLTAGE | $V_{DD}-V_{SS}$ | -0.3 | 6.5 | V |
| SUPPLY VOLTAGE FOR LCD | $V_{DD}-V_{EE}$ | 0 | 27.0 | V |
| INPUT VOLTAGE | V_{IN} | -0.3 | $V_{DD}+0.3$ | V |
| CCFL OPERATING VOLTAGE | V_{FL} | - | 1500 | Vrms |
| CCFL OPERATING CURRENT | I_{FL} | - | 10 | mArms |
| OPERATING TEMPERATURE | T_{OP} | 0 | 50 | °C |
| STORAGE TEMPERATURE | T_{STG} | -25 | 60 | °C |
| HUMIDITY (NO CONDENSATION) | - | 10 | 85 | %RH |

Power Supply



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

| PARAMETER | SYM | CONDITION | MIN | TYP | MAX | UNIT |
|----------------------|------------|-----------------|------|------|----------|------|
| SUPPLY VOLTAGE | V_{DD} | - | 4.75 | 5.0 | 5.25 | V |
| | $-V_{EE}$ | - | 13.6 | 17.0 | 19.8 | V |
| POWER SUPPLY CURRENT | I_{DD} | $V_{DD}=5.0V$ | - | 30.0 | - | mA |
| | $-I_{EE}$ | $V_{EE}=-17.0V$ | - | 20.0 | - | mA |
| INPUT HIGH VOLTAGE | V_{IH} | - | 4.5 | - | V_{DD} | V |
| INPUT LOW VOLTAGE | V_{IL} | - | 0.3 | - | 0.5 | V |
| CCFL OP. VOLTAGE | V_{FL} | $I_{FL}=5mArms$ | - | 450 | - | Vrms |
| CCFL OP. CURRENT | I_{FL} | $V_{FL}=360V$ | - | 5.0 | - | mA |
| CCFL START VOLTAGE | V_{FLS} | $T_a=0°C$ | - | - | - | Vrms |
| CCFL FREQUENCY | f_{FL} | - | - | 30 | - | kHz |
| FRAME FREQUENCY | f_{FP} | - | 65 | 72 | 80 | Hz |
| DRIVE METHOD | 1/240 DUTY | | | | | |

Pin Connections

| PIN NO. | SYMBOL | LEVEL | FUNCTION |
|-----------------------|-----------|-------|--------------------------|
| DATA CONNECTOR | | | |
| 1 | FP | H | First Line Marker |
| 2 | LP | H/L | Data Latch |
| 3 | SCP | H/L | Shift clock |
| 4 | DISPOFF | H/L | H=On, L=Off |
| 5 | V_{DD} | 5V | Power supply for logic |
| 6 | V_{SS} | 0V | Ground |
| 7 | V_{EE} | - | Operating voltage for LC |
| 8 | UD0 | H/L | Upper screen data input |
| 9 | UD1 | H/L | Upper screen data input |
| 10 | UD2 | H/L | Upper screen data input |
| 11 | UD3 | H/L | Upper screen data input |
| 12 | LD0 | H/L | Lower screen data input |
| 13 | LD1 | H/L | Lower screen data input |
| 14 | LD2 | H/L | Lower screen data input |
| 15 | LD3 | H/L | Lower screen data input |
| CCFL CONNECTOR | | | |
| 1 | V_{FLG} | - | Ground |
| 2 | NC | - | No Connection |
| 3 | NC | - | No Connection |
| 4 | V_{FL} | - | Power supply for CCFL |