



T-41-33

**Electro-Optical, Environmental and Mechanical**

**Absolute Maximum Ratings (Polarizers Attached)**

| Parameter                    | Liquid Crystal Material |                      | Unit             |
|------------------------------|-------------------------|----------------------|------------------|
|                              | Standard Temperature    | "W" Wide Temperature |                  |
| Applied Voltage              | 10                      | 10                   | V <sub>RMS</sub> |
| DC Drive Component Allowable | 25                      | 50                   | mV               |
| Operating Temperature        | -20 to +60              | -30 to +85           | °C               |
| Storage Temperature          | -20 to +60              | -40 to +85           | °C               |
| Operating Frequency          | +30 to +100             | +30 to +100          | Hz               |

**Note:**

- A. Upper limits achieved with high temperature "U" sheet polarizers (not available with frosted reflector). With standard temperature polarizers, high temperature operation and storage is recommended not to exceed +60°C over extended periods of time.
- B. Flicker may occur below 30 Hz; power consumption increases above 100 Hz.

**Recommended Operating Conditions (Polarizers Attached)**

| Parameter             | Liquid Crystal Material |      |      |                      |      |      | Unit             |
|-----------------------|-------------------------|------|------|----------------------|------|------|------------------|
|                       | Standard Temperature    |      |      | "W" Wide Temperature |      |      |                  |
|                       | Min.                    | Typ. | Max. | Min.                 | Typ. | Max. |                  |
| Operating Voltage     | 3.0                     | 5.0  | 6.0  | 3.5                  | 5.0  | 6.0  | V <sub>RMS</sub> |
| Operating Frequency   | 30                      | 32   | 35   | 30                   | 32   | 100  | Hz               |
| Operating Temperature | -10                     | +25  | +60  | -30                  | +25  | +85  | °C               |

**Typical Operating Characteristics (5 VRMS, 32 Hz, 25°C)**

| Parameter               | Liquid Crystal Material |       |      |                      |        |      | Unit     |
|-------------------------|-------------------------|-------|------|----------------------|--------|------|----------|
|                         | Standard Temperature    |       |      | "W" Wide Temperature |        |      |          |
|                         | Min.                    | Typ.  | Max. | Min.                 | Typ.   | Max. |          |
| Operating Current       |                         |       |      |                      |        |      |          |
| 0.5" Character Height   | -                       | 1.0   |      |                      | 1.0    |      | µA/Digit |
| 0.7" Character Height   | -                       | 3.0   |      |                      | 3.0    |      | µA/Digit |
| 1.0" Character Height   | -                       | 6.0   |      |                      | 6.0    |      | µA/Digit |
| Optical Response Time   |                         |       |      |                      |        |      |          |
| Rise Time (Ta = 50%°C)  | -                       | 15    | -    |                      | 3      |      | mS       |
| Decay Time (Ta = 50%°C) | -                       | 60    | -    |                      | 10     |      | mS       |
| Rise Time (Ta = 25°C)   | -                       | 25    | -    |                      | 5      |      | mS       |
| Decay Time (Ta = 25°C)  | -                       | 90    | -    |                      | 25     |      | mS       |
| Rise Time (Ta = 0°C)    | -                       | 120   | -    |                      | 15     |      | mS       |
| Decay Time (Ta = 0°C)   | -                       | 400   | -    |                      | 65     |      | mS       |
| Contrast Ratio          | -                       | 20:1  | -    |                      | 18:1   |      | -        |
| Viewing Angle           | -                       | ±60°  | -    |                      | ±60°   |      |          |
| DC Resistance           | -                       | 100   | -    |                      | 100    |      | MΩ       |
| Expected Life           |                         | 50000 |      |                      | 100000 |      | Hours    |

All AND LCDs will meet or exceed the above electro/optical, environmental and mechanical specifications.

**Environmental Test Specifications**

| Parameter   | Standard Temperature                        | "W" Wide Temperature                        |
|---|---|---|
| High Temperature Storage<br>RH < 30%                                  | 60°C, 500 Hours                             | 60°C, 500 Hours                             |
| Low Temperature Storage   | -20°C, 500 Hours                            | -20°C, 500 Hours                            |
| Moisture Resistant<br>80°C, 95%                                       | 100 Hours<br>without polarizer<br>500 Hours | 100 Hours<br>without polarizer<br>500 Hours |
| 60°C, 70% without polarizer<br>60°C, 70% with polarizer               | 240 Hours                                   | 500 Hours                                   |
| High Temperature Operation<br>10 V <sub>RMS</sub> , 32 Hz Square Wave | 60°C, 500 Hours                             | 80°C, 500 Hours                             |
| Temperature Cycling<br>(air to air, 10 cycles)                        | -20°C, 20 Minutes<br>60°C, 20 Minutes       | 20°C, 20 Minutes<br>85°C, 20 Minutes        |

Note: High stability "U" Polarizer not available with reflective silver bead backing.

**Mechanical Specifications**

| Parameter  | Min. | Typ. | Max. | Unit   |
|--|------|------|------|--------|
| Mechanical Shock:<br>Mechanical shock consisting of 300 Gs @ .5 milliseconds in three mutually perpendicular axes. The LCD is fixed in position on its front surface.  |      | 1    |      | Cycle  |
| Thermal Shock<br>(without polarizer) 2 minutes @ °C, 2 minutes @ 80°C (in the water) transfer time not to exceed 15 seconds.   |      | 5    |      | Cycles |
| Vibration<br>One Logarithmic frequency sweep from 10 to 2000 Hz (sinusoidal) at 20 Gs, or 1.5 mm amplitude (whichever is smaller) during a 20 minute time period. One sweep is required in each of three mutually perpendicular axes. The LCD is fixed in position on its front surface. |      | 1    |      | Sweep  |
| Connector Pin Bend Test<br>(Exceeds MIL-STND-883):<br>With an 8 ounce weight attached to the pins, the pin must exceed three 90° bends before breaking.  |      | 3    |      | Bends  |
| UV Radiation:<br>1.5 mW/cm <sup>2</sup> UV Radiation (3650 black light) 1 all ≤200%  |      | 240  |      | Hours  |



**Electro-Optical, Environmental and Mechanical**

T-41-33

**Absolute Maximum Ratings (Polarizers Attached)**

| Parameter                    | Standard Temperature | Unit             |
|------------------------------|----------------------|------------------|
| Applied Voltage              | 10                   | V <sub>rms</sub> |
| DC Drive Component Allowable | 50                   | mV               |
| Operating Temperature        | 0 to +60             | °C               |
| Storage Temperature          | -20 to +60           | °C               |
| Frame Frequency              | 200                  | Hz               |

**Recommended Operating Conditions**

| Parameter             | Min.     | Typ. | Max. | Unit             |
|-----------------------|----------|------|------|------------------|
| Operating Voltage     | 5.0±0.25 |      |      | V <sub>rms</sub> |
| Frame Frequency       | 100      | -    | 200  | Hz               |
| Operating Temperature | 0        | 25   | 50   | C                |

**Typical Operating Characteristics**

| Parameter                         | Min. | Typ.  | Max. | Unit    |
|-----------------------------------|------|-------|------|---------|
| Operating Current                 |      |       |      |         |
| 0.5" Character Height             | -    | 4.0   | 8.0  | µA/Cell |
| Optical Response Time             |      |       |      |         |
| Rise Time (T <sub>a</sub> =25°C)  | -    | 300   | -    | ms      |
| Decay Time (T <sub>a</sub> =25°C) | -    | 300   | -    | ms      |
| Rise Time (T <sub>a</sub> =0°C)   | -    | 1000  | -    | ms      |
| Decay Time (T <sub>a</sub> =0°C)  | -    | 1000  | -    | ms      |
| Contrast Ratio                    | -    | 20:1  | -    | -       |
| Viewing Angle                     | -    | *     | -    | -       |
| DC Resistance                     | -    | 10    | -    | MΩ      |
| Expected Life                     | -    | 50000 | -    | Hours   |

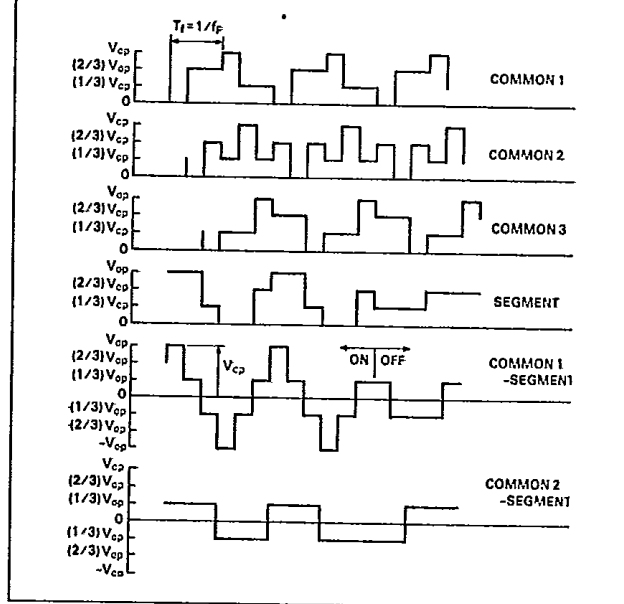
**Environmental Test Specifications**

| Parameter  | Min. | Typ.  | Max. | Unit   |
|--|------|-------|------|--------|
| Temperature/Humidity:  |      |       |      |        |
| A. No Polarizers   |      |       |      |        |
| 80°C, 95% Relative Humidity  |      | > 100 |      | Hours  |
| 60°C, 70% Relative Humidity  |      | > 500 |      | Hours  |
| B. Polarizers Attached   |      |       |      |        |
| 60°C, 70% Relative Humidity  |      | > 240 |      | Hours  |
| 40°C, 95% Relative Humidity  |      | > 500 |      | Hours  |
| Thermal Shock (No Polarizers):   |      |       |      |        |
| Liquid to Liquid   |      |       |      |        |
| 2 Minutes @ 0°C, 2 minutes @ +80°C and a transfer time from one extreme to the other not to exceed 15 seconds.       |      | 5     |      | Cycles |
| Temperature Cycling (Air to Air):  |      |       |      |        |
| Air to Air   |      |       |      |        |
| 20 minutes @ -20°C to 20 minutes @ +60°C and a transfer time from one extreme to the other not to exceed 10 minutes. |      | 10    |      | Cycles |

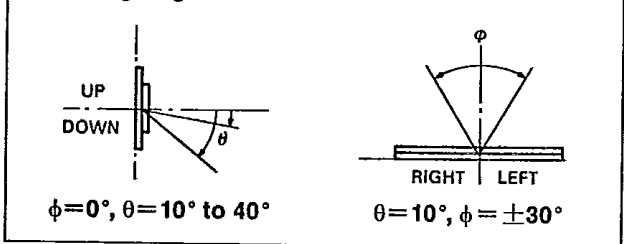
**Mechanical Specifications**

| Parameter   | Min. | Typ. | Max. | Unit  |
|---|------|------|------|-------|
| Mechanical Shock:   |      |      |      |       |
| Mechanical shock consisting of 300 Gs @ .5 milliseconds in three mutually perpendicular axes. The LCD is fixed in position on its front surface.  |      | 1    |      | Cycle |
| Vibration   |      |      |      |       |
| One Logarithmic frequency sweep from 10 to 2000 Hz (sinusoidal) at 20 Gs, or 1.5 mm amplitude (whichever is smaller) during a 20 minute time period. One sweep is required in each of three mutually perpendicular axes. The LCD is fixed in position on its front surface. |      | 1    |      | Sweep |
| Connector Pin Bend Test (Exceeds MIL-STND-883):   |      |      |      |       |
| With an 8 ounce weight attached to the pins, the pin must exceed three 90° bends before breaking.   |      | 3    |      | Bends |

**Driving Wave Form**



**\*Viewing Angle**





T.41-33

**ACTUAL SIZE**

**FE0101\***

**4 DIGITS,**  
**0.3 inch (7.6 mm) CHARACTER HEIGHT**

\* See page 3-3 for complete part number

**PINLESS CONFIGURATION**

**NOTES:**

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions: Inches (mm)
- 3 Only available in the pinless versions

|          |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |    |    |    |    |    |    |
|----------|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 1  | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Segment  | BP | - | P2 | E1 | D1 | C1 | dp | E2 | D2 | C2 | dp | E3 | D3 | C3 | dp | E4 | D4 | C4 | P5 | P4 | P3 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | COL | B2 | A2 | F2 | G2 | B1 | A1 | F1 | G1 | P1 | BP |

**ACTUAL SIZE**

**MINIMUM VIEWING AREA: 1.800 x .700 (45,72mm x 17,78mm)**

**FE0201\***

**3½ DIGITS**  
**0.5 Inch (12.7mm) CHARACTER HEIGHT**

\* See page 3-3 for complete part number

**PINLESS CONFIGURATION      PINNED CONFIGURATION**

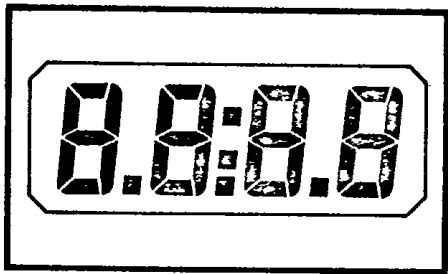
**NOTES:**

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions: Inches (mm)

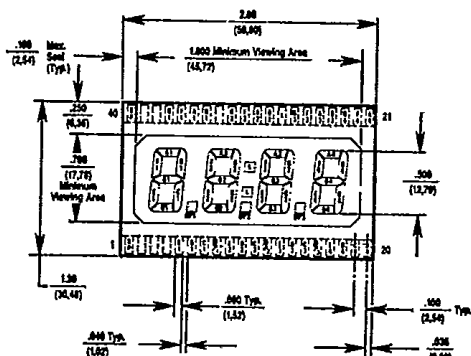
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|----------|----|---|---|-----|-----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|----|----|----|
| Pin. No. | 1  | 2 | 3 | 4   | 5   | 6   | 7   | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34  | 35  | 36  | 37  | 38 | 39 | 40 |
| Segment  | BP | Y | K | N/C | N/C | N/C | N/C | dp1 | E1 | D1 | C1 | dp2 | E2 | D2 | C2 | dp3 | E3 | D3 | C3 | B3 | A3 | F3 | G3 | B2 | A2 | F2 | G2 | L  | B1 | A1 | F1 | G1 | N/C | N/C | N/C | N/C | N/C | Z  | X  | BP |



T-41-33



ACTUAL SIZE

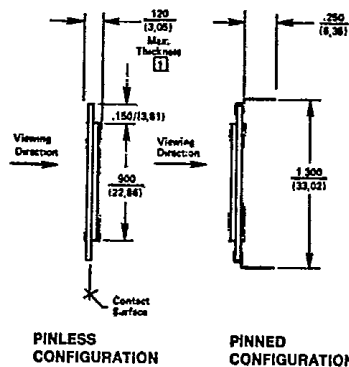


MINIMUM VIEWING AREA: 1.800 x .700 (45,72mm x 17,78mm)

FE0202\*

4 DIGITS,  
0.5 inch (12.7 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number

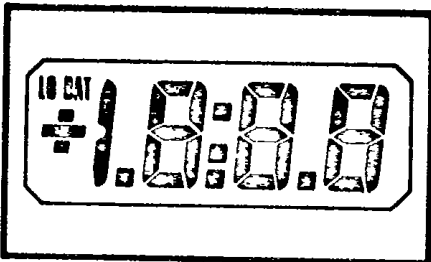


NOTES:

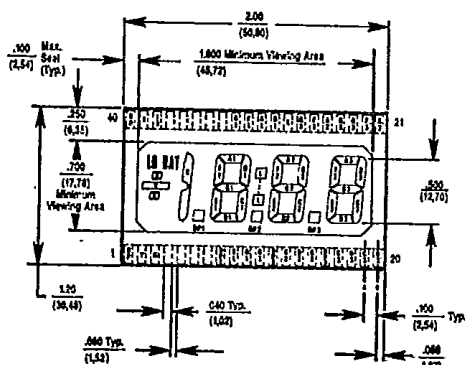
1 Maximum thickness includes front and back polarizers plus reflector attached.

2 Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

|          |    |     |     |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |     |    |
|----------|----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|-----|-----|----|
| Pin. No. | 1  | 2   | 3   | 4   | 5  | 6  | 7  | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34 | 35 | 36 | 37 | 38  | 39  | 40 |
| Segment  | BP | N/C | N/C | N/C | E1 | D1 | C1 | dp1 | E2 | D2 | C2 | dp2 | E3 | D3 | C3 | dp3 | E4 | D4 | C4 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | L  | B2 | A2 | F2 | G2 | N/C | B1 | A1 | F1 | G1 | N/C | N/C | BP |



ACTUAL SIZE

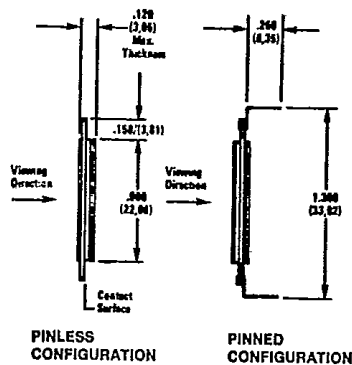


MINIMUM VIEWING AREA: 1.800 x .700 (45,72mm x 17,78mm)

FE0203\*

3 1/2 DIGITS  
0.5 inch (12.7mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



NOTES:

1 Maximum thickness includes front and back polarizers plus reflector attached.

2 Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

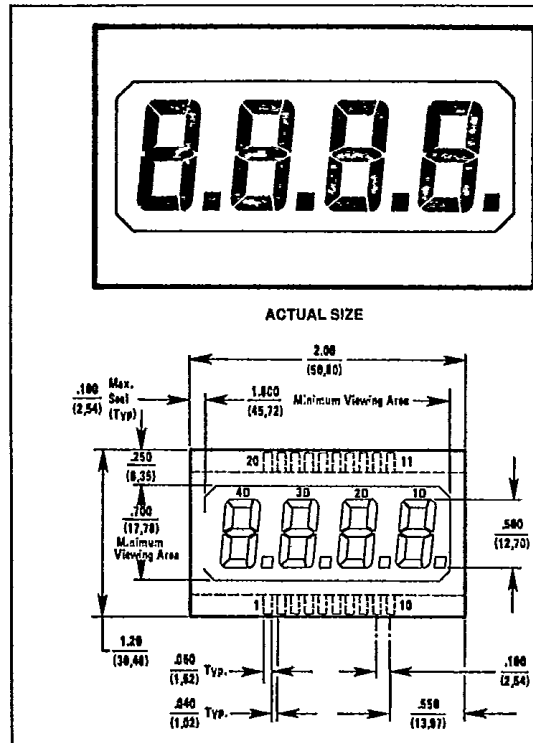
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|----------|----|---|---|-----|-----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|----|----|----|
| Pin. No. | 1  | 2 | 3 | 4   | 5   | 6   | 7   | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34  | 35  | 36  | 37  | 38  | 39 | 40 |    |
| Segment  | BP | Y | K | N/C | N/C | N/C | N/C | dp1 | E1 | D1 | C1 | dp2 | E2 | D2 | C2 | dp3 | E3 | D3 | C3 | B3 | A3 | F3 | G3 | B2 | A2 | F2 | G2 | L  | B1 | A1 | F1 | G1 | N/C | N/C | N/C | N/C | N/C | N/C | LO | X  | BP |



LCD Panel Displays

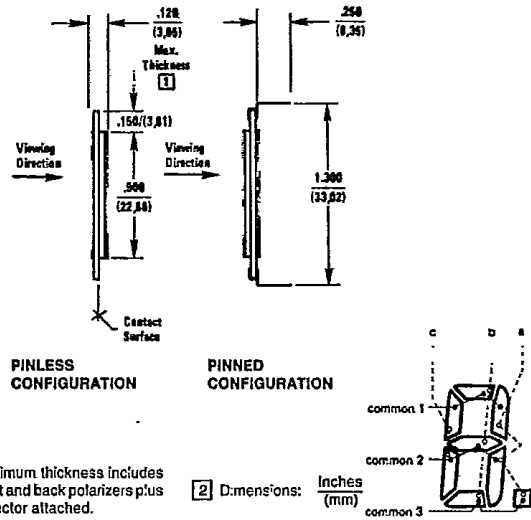
FE0204M/FE0205

T-41-33



**FE0204M\***  
**4 DIGITS,**  
**0.5 Inch (12.7 mm) CHARACTER HEIGHT**

\* See page 3-3 for complete part number

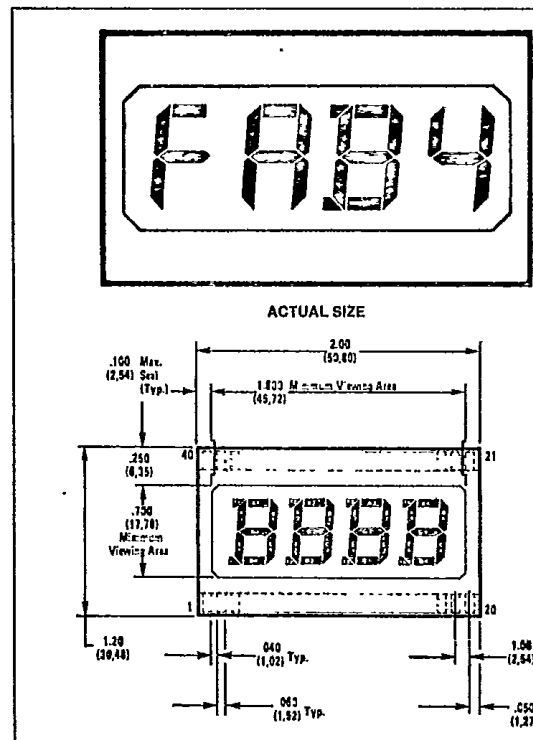


**NOTES:**

**1** Maximum thickness includes front and back polarizers plus reflector attached.

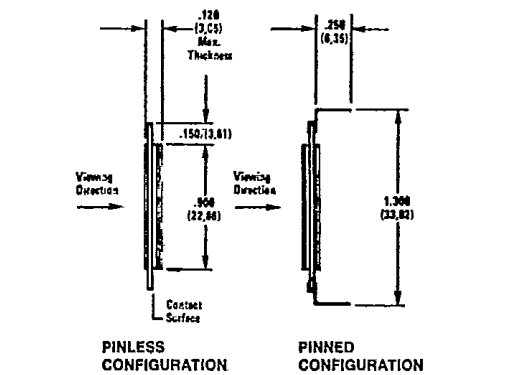
**2** Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

|          |    |    |    |      |      |      |      |     |    |    |     |      |      |      |      |      |      |      |      |     |
|----------|----|----|----|------|------|------|------|-----|----|----|-----|------|------|------|------|------|------|------|------|-----|
| Pin. No. | 1  | 2  | 3  | 4    | 5    | 6    | 7    | 8   | 9  | 10 | 11  | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20  |
| Segment  | NC | NC | NC | 4D-a | 3D-a | 2D-a | 1D-a | BP3 | NC | NC | BP1 | 1D-b | 1D-c | 2D-b | 2D-c | 3D-b | 3D-c | 4D-b | 4D-c | BP2 |



**FE0205\***  
**4 FULL HEXADECIMAL CHARACTERS**  
**0.5 Inch (12.7mm) CHARACTER HEIGHT**

\* See page 3-3 for complete part number



**NOTES:**

**1** Maximum thickness includes front and back polarizers plus reflector attached.

**2** Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

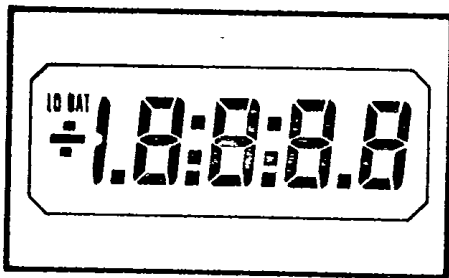
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|----------|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|-----|-----|-----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|-----|----|
| Pin. No. | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19  | 20  | 21  | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39  | 40 |
| Segment  | BP | T1 | E1 | D1 | C1 | T2 | E2 | D2 | C2 | N/C | T3 | E3 | D3 | C3 | T4 | E4 | D4 | C4 | N/C | N/C | N/C | G4 | B4 | A4 | F4 | G3 | B3 | A3 | F3 | N/C | G2 | B2 | A2 | F2 | G1 | B1 | A1 | F1 | N/C | BP |



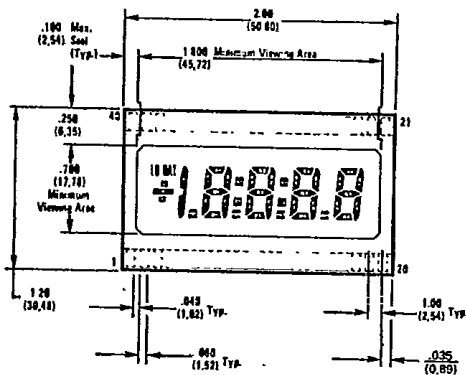
LCD Panel Displays

FE0206 / FE0208

T-41-33

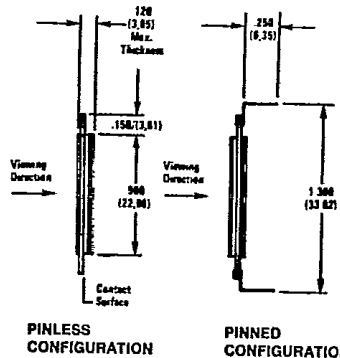


ACTUAL SIZE



**FE0206\***  
4 1/2 DIGITS,  
0.4 inch (10.2 mm) CHARACTER HEIGHT

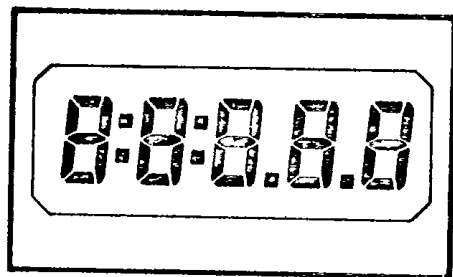
\* See page 3-3 for complete part number



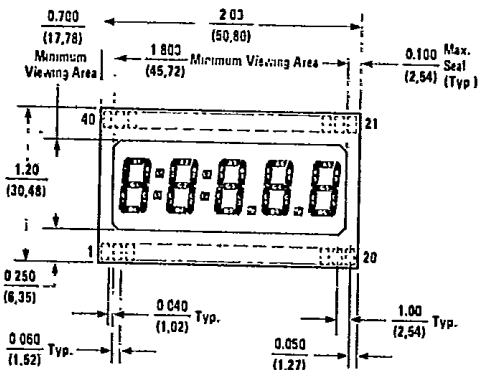
NOTES:

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions: Inches (mm)

|          |    |   |   |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |
|----------|----|---|---|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|
| Pin. No. | 1  | 2 | 3 | 4   | 5  | 6  | 7  | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38  | 39 | 40 |
| Segment  | BP | Y | K | DP1 | E1 | D1 | C1 | DP2 | E2 | D2 | C2 | DP3 | E3 | D3 | C3 | DP4 | E4 | D4 | C4 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | L2 | B2 | A2 | F2 | G2 | L1 | B1 | A1 | F1 | G1 | BAT | X  | BP |

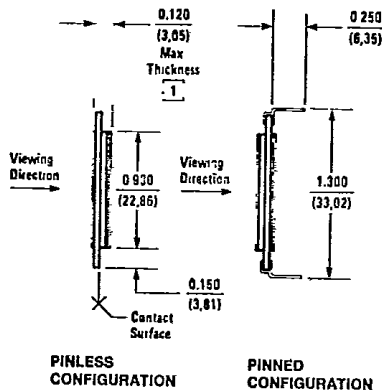


ACTUAL SIZE



**FE0208\***  
5 DIGITS  
0.4 Inch (10.2mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



NOTES:

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions: Inches (mm)

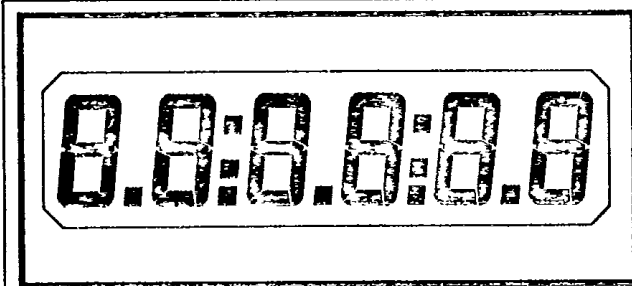
|          |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Segment  | BP | G1 | E1 | D1 | C1 | E2 | D2 | C2 | E3 | D3 | C3 | DP1 | E4 | D4 | C4 | DP2 | E5 | D5 | C5 | B5 | A5 | F5 | G5 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | L2 | B2 | A2 | F2 | G2 | L1 | B1 | A1 | F1 |



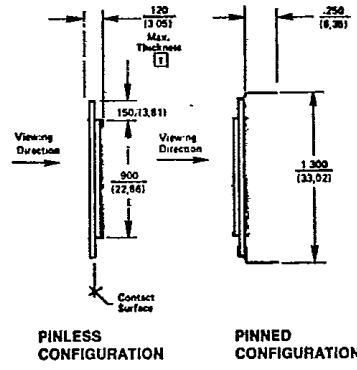
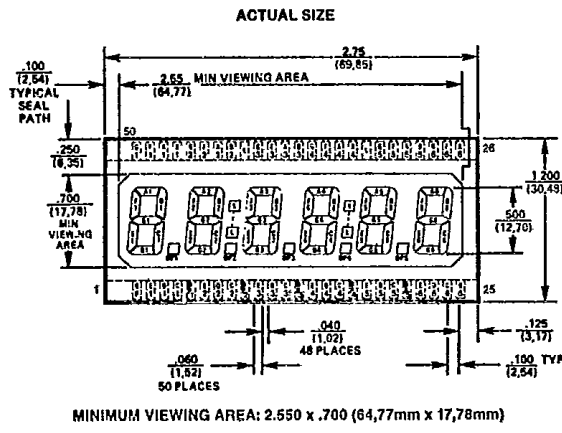
LCD Panel Displays

FE0401/FE0405

T-41-33



**FE0401\***  
**6 DIGITS,**  
**0.5 inch (12.7 mm) CHARACTER HEIGHT**  
 \* See page 3-3 for complete part number

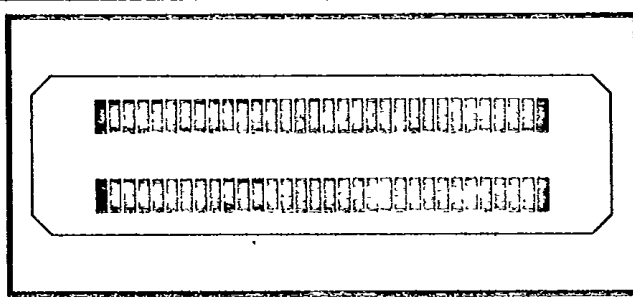


**NOTES:**

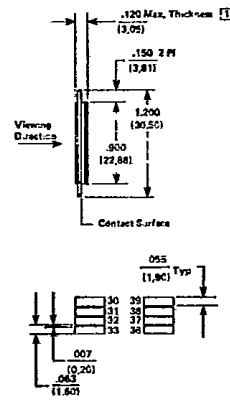
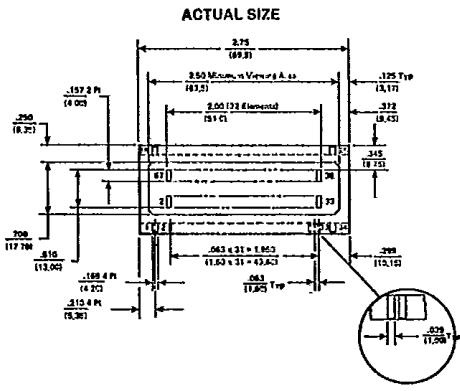
1 Maximum thickness includes front and back polarizers plus reflector attached.

2 Dimensions: Inches (mm)

|          |    |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 1  | 2  | 3  | 4  | 5   | 6  | 7  | 8  | 9   | 10 | 11 | 12 | 13  | 14 | 15 | 16 | 17  | 18 | 19 | 20 | 21  | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Segment  | BP | E1 | D1 | C1 | dp1 | E2 | D2 | C2 | dp2 | E3 | D3 | C3 | dp3 | E4 | D4 | C4 | dp4 | E5 | D5 | C5 | dp5 | E6 | D6 | C6 | B6 | A6 | F6 | G6 | B5 | A5 | F5 | G5 | L  | B4 | A4 | F4 | G4 | B3 | A3 | F3 |
| Pin. No. | 41 | 42 | 43 | 44 | 45  | 46 | 47 | 48 | 49  | 50 |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Segment  | G3 | L  | B2 | A2 | F2  | G2 | B1 | A1 | F1  | G1 |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |



**FE0405\***  
**64 POSITION BAR GRAPH**  
**(2 ROWS OF 32 POSITIONS)**  
 \* See page 3-3 for complete part number



**NOTES:**

1 Maximum thickness includes front and back polarizers plus reflector attached.

2 Dimensions: Inches (mm)

3 Pads 1, 34, 35 and 68 are backplane connections. All four are internally tied together. One or all may be used if it is recommended to use at least two.

4 Display orientation is not critical (no specific left of right side).

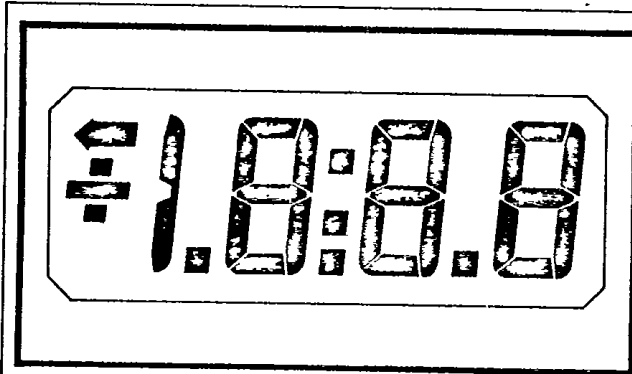
5 Only available in pinless versions.



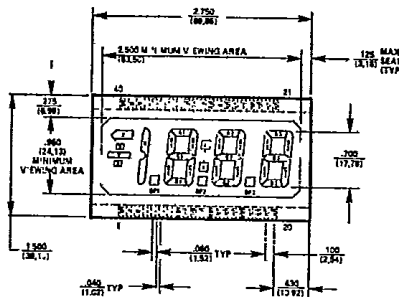
LCD Panel Displays

FE0501/FE0502

T-41-33



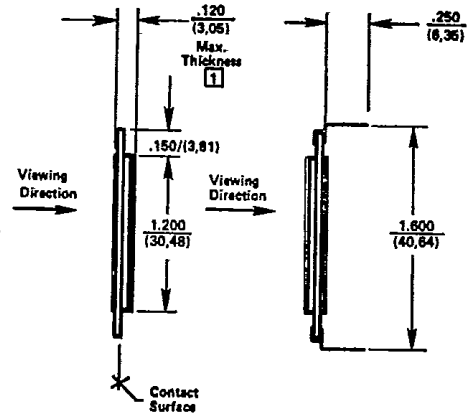
ACTUAL SIZE



MINIMUM VIEWING AREA: 2,500" x .950" (63.50 mm x 24.13 mm)

**FE0501\***  
3 1/2 DIGITS,  
0.7 inch (17.8 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



PINLESS CONFIGURATION

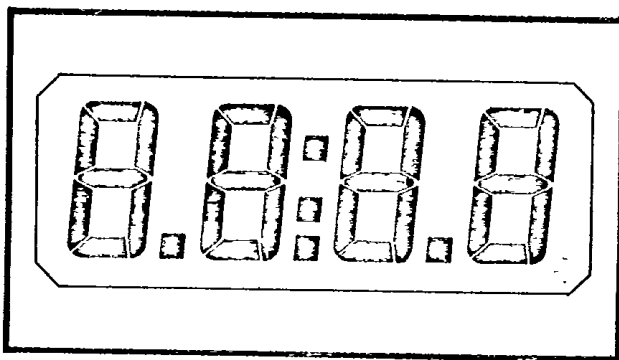
PINNED CONFIGURATION

NOTES:

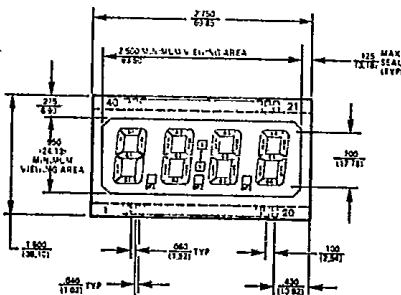
1 Maximum thickness includes front and back polarizers plus reflector attached.

2 Dimensions: Inches (mm)

|          |    |   |   |     |     |     |     |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |    |    |    |
|----------|----|---|---|-----|-----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|----|----|----|
| Pin. No. | 1  | 2 | 3 | 4   | 5   | 6   | 7   | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34  | 35  | 36  | 37  | 38 | 39 | 40 |
| Segment  | BP | Y | K | N/C | N/C | N/C | N/C | dp1 | E1 | D1 | C1 | dp2 | E2 | D2 | C2 | dp3 | E3 | D3 | C3 | B3 | A3 | F3 | G3 | B2 | A2 | F2 | G2 | L  | B1 | A1 | F1 | G1 | N/C | N/C | N/C | N/C | N/C | Z  | X  | BP |

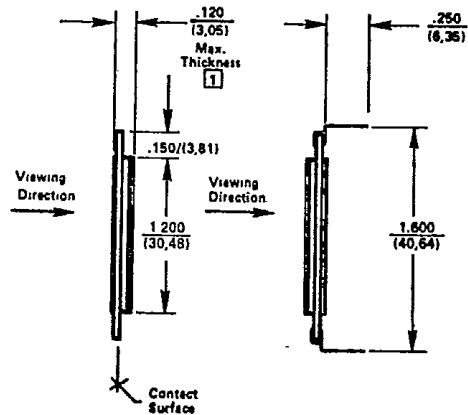


ACTUAL SIZE



**FE0502\***  
4 DIGITS,  
0.7 inch (17.8 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



PINLESS CONFIGURATION

PINNED CONFIGURATION

NOTES:

1 Maximum thickness includes front and back polarizers plus reflector attached.

2 Dimensions: Inches (mm)

|          |    |     |     |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |     |    |
|----------|----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|-----|-----|----|
| Pin. No. | 1  | 2   | 3   | 4   | 5  | 6  | 7  | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34 | 35 | 36 | 37 | 38  | 39  | 40 |
| Segment  | BP | N/C | N/C | N/C | E1 | D1 | C1 | dp1 | E2 | D2 | C2 | dp2 | E3 | D3 | C3 | dp3 | E4 | D4 | C4 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | L  | B2 | A2 | F2 | G2 | N/C | B1 | A1 | F1 | G1 | N/C | N/C | BP |

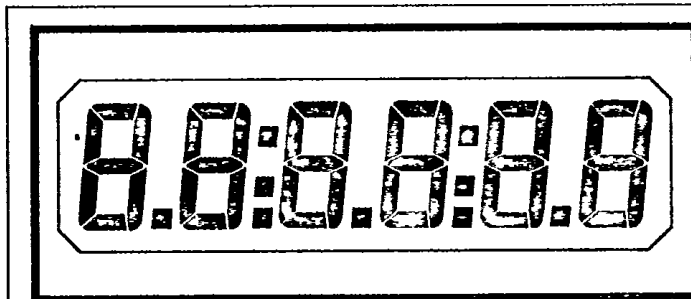




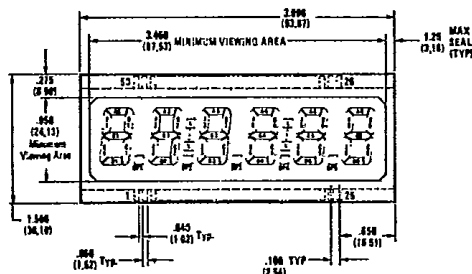
LCD Panel Displays

FE0601/FE0701

T-41-33

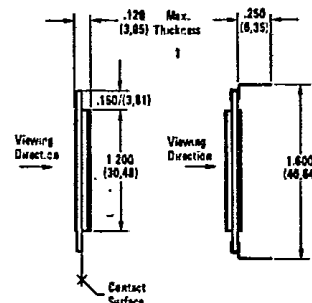


ACTUAL SIZE



**FE0601\***  
6 DIGITS,  
0.7 inch (17.8 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



PINLESS CONFIGURATION

PINNED CONFIGURATION

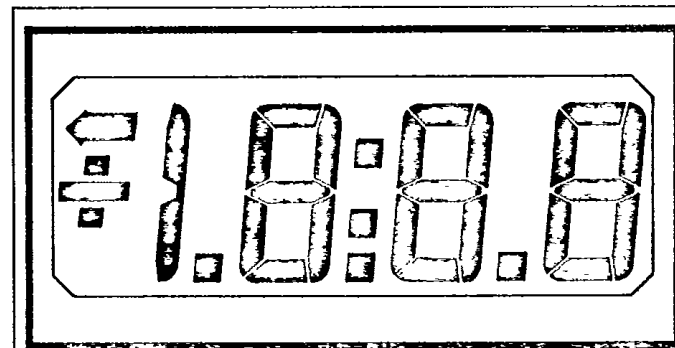
NOTES:

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions: Inches (mm)

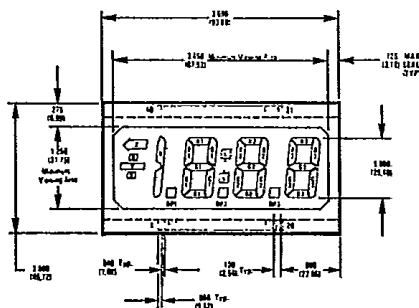
|          |    |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 1  | 2  | 3  | 4  | 5   | 6  | 7  | 8  | 9   | 10 | 11 | 12 | 13  | 14 | 15 | 16 | 17  | 18 | 19 | 20 | 21  | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Segment  | BP | E1 | D1 | G1 | dp1 | E2 | D2 | C2 | dp2 | E3 | D3 | C3 | dp3 | E4 | D4 | C4 | dp4 | E5 | D5 | C5 | dp5 | E6 | D6 | C6 | B6 | A6 | F6 | G6 | B5 | A5 | F5 | G5 | L  | B4 | A4 | F4 | G4 | B3 | A3 | F3 |

|          |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
|----------|----|----|----|----|----|----|----|----|----|----|

|         |    |   |    |    |    |    |    |    |    |    |
|---------|----|---|----|----|----|----|----|----|----|----|
| Segment | G3 | L | B2 | A2 | F2 | G2 | B1 | A1 | F1 | G1 |
|---------|----|---|----|----|----|----|----|----|----|----|

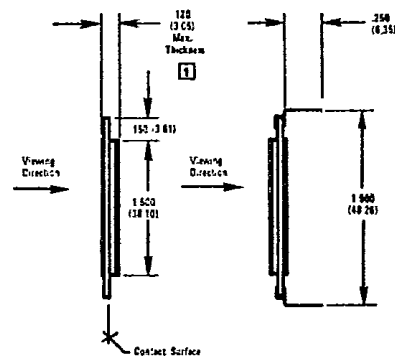


ACTUAL SIZE



**FE0701\***  
3½ DIGITS,  
1.0 inch (25.4 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



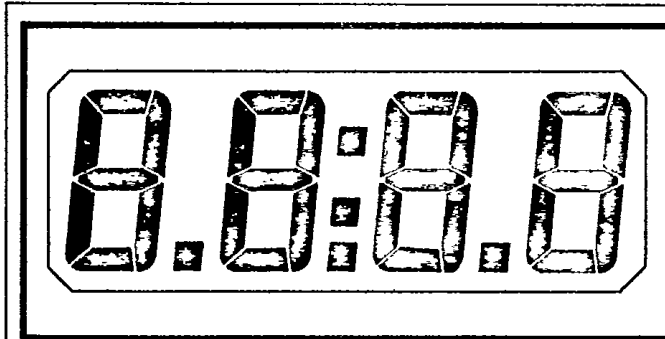
PINNED CONFIGURATION

PINLESS CONFIGURATION

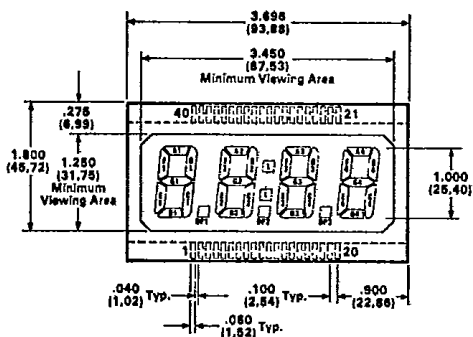
NOTES:

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions: Inches (mm)

|          |    |   |   |     |     |     |     |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |    |    |    |
|----------|----|---|---|-----|-----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|----|----|----|
| Pin. No. | 1  | 2 | 3 | 4   | 5   | 6   | 7   | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34  | 35  | 36  | 37  | 38  | 39 | 40 |    |
| Segment  | BP | Y | K | N/C | N/C | N/C | N/C | dp1 | E1 | D1 | C1 | dp2 | E2 | D2 | C2 | dp3 | E3 | D3 | C3 | B3 | A3 | F3 | G3 | B2 | A2 | F2 | G2 | L  | B1 | A1 | F1 | G1 | N/C | N/C | N/C | N/C | N/C | N/C | Z  | Y  | BP |



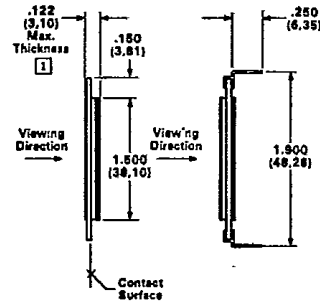
ACTUAL SIZE



**FE0703\***

**4 DIGITS,  
1.0 inch (25.4 mm) CHARACTER HEIGHT**

\* See page 3-3 for complete part number



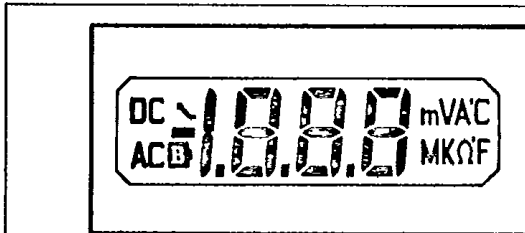
PINLESS CONFIGURATION

PINNED CONFIGURATION

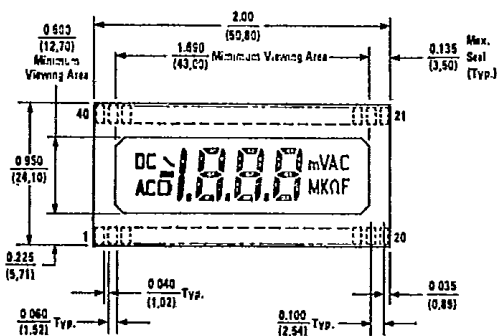
NOTES:

- 1 Glass thickness (non-accumulative) is .043 (1.1) ± .006 (.15) Total thickness of bare cell (front and rear glass) is .087 (2.2) ± .008 (.2)
- 2 Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

|          |    |     |     |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |     |    |
|----------|----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|-----|-----|----|
| Pin. No. | 1  | 2   | 3   | 4   | 5  | 6  | 7  | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33  | 34 | 35 | 36 | 37 | 38  | 39  | 40 |
| Segment  | BP | N/C | N/C | N/C | E1 | D1 | C1 | dp1 | E2 | D2 | C2 | dp2 | E3 | D3 | C3 | dp3 | E4 | D4 | C4 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | L  | B2 | A2 | F2 | G2 | N/C | B1 | A1 | F1 | G1 | N/C | N/C | BP |



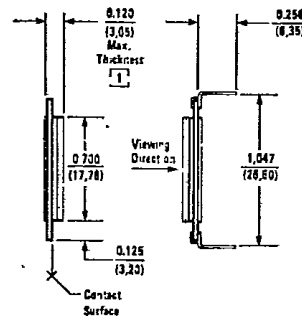
ACTUAL SIZE



**FE0801\***

**3 1/2 DIGITS,  
0.4 inch (10.2 mm) CHARACTER HEIGHT**

\* See page 3-3 for complete part number



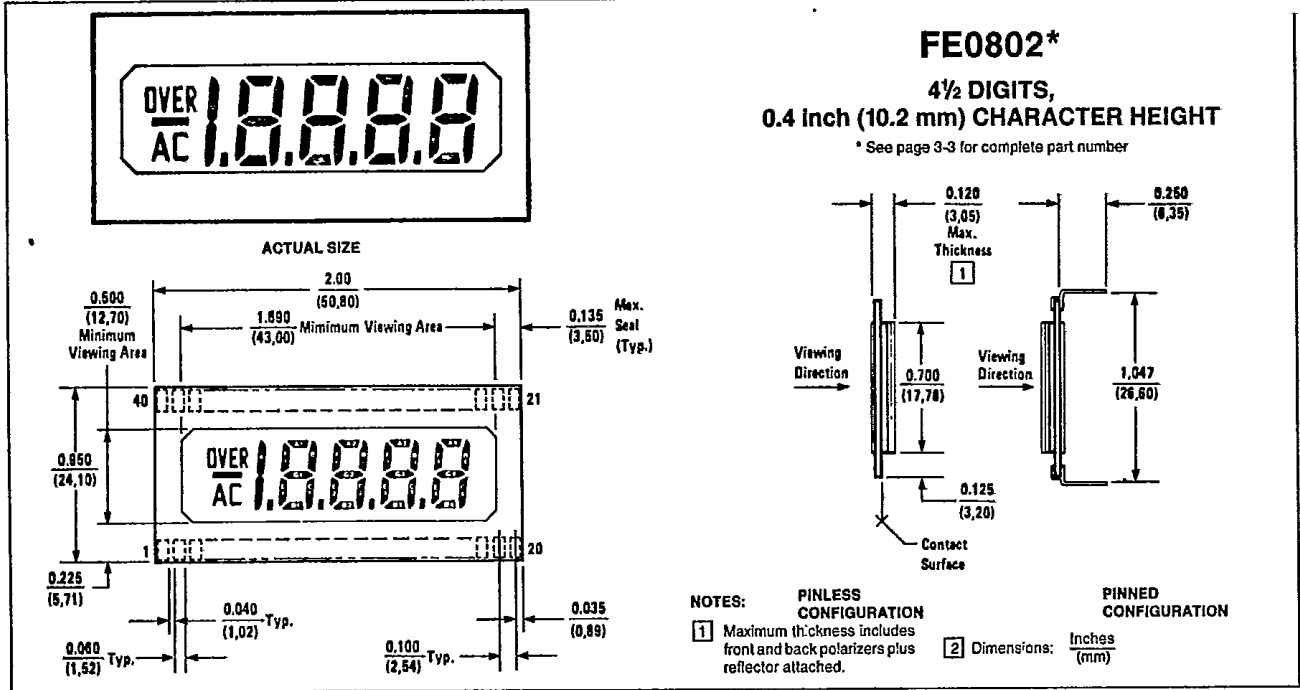
PINLESS CONFIGURATION

PINNED CONFIGURATION

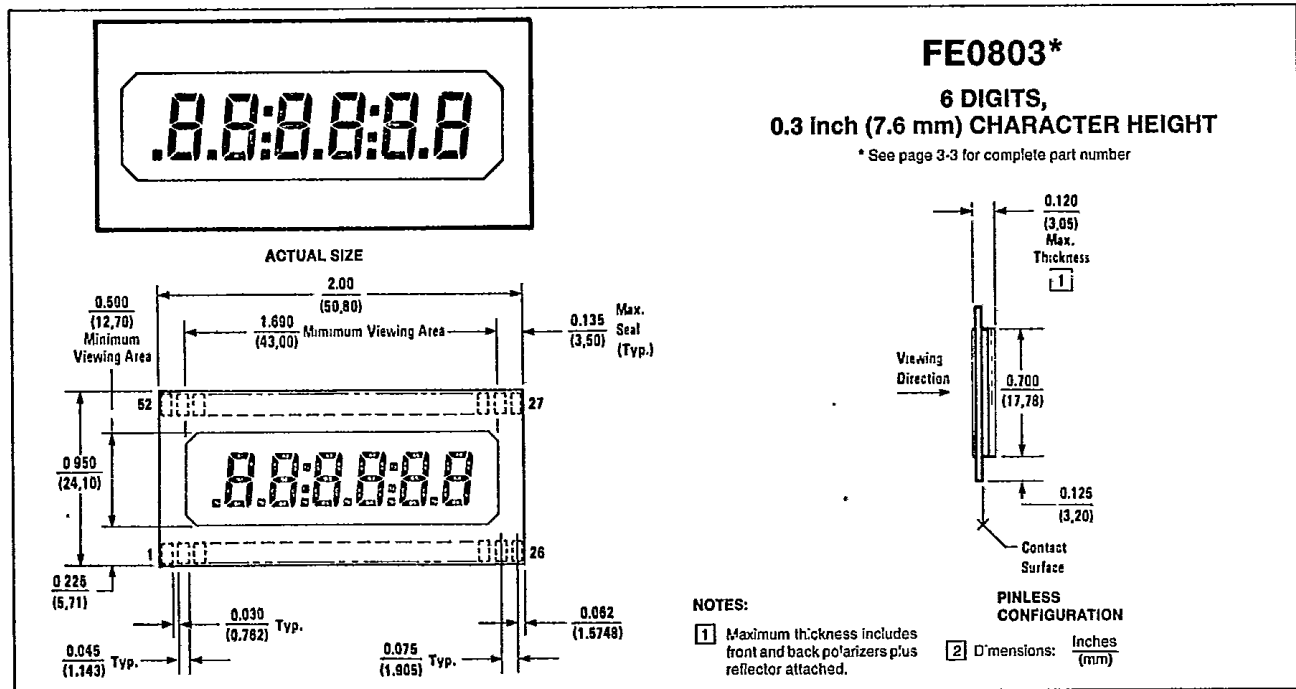
NOTES:

- 1 Maximum thickness includes front and back polarizers plus reflector attached.
- 2 Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

|          |    |     |    |     |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |    |
|----------|----|-----|----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|
| Pin. No. | 1  | 2   | 3  | 4   | 5 | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |   |    |
| Segment  | BP | N/C | AC | BAT | K | dp | E1 | D1 | C1 | dp | E2 | D2 | C2 | dp | E3 | D3 | C3 | M  | K  | Ω  | °  | F  | °  | C  | A  | V  | m  | B3 | A3 | F3 | G3 | B2 | A2 | F2 | G2 | B1 | A1 | F1 | G1 | OV | - | DC |



|          |    |     |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |    |     |
|----------|----|-----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|-----|
| Pin. No. | 1  | 2   | 3  | 4 | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37  | 38 | 39 | 40  |
| Segment  | BP | N/C | AG | K | dp | E1 | D1 | C1 | dp | E2 | D2 | C2 | dp | E3 | D3 | C3 | dp | E4 | D4 | C4 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | B2 | A2 | F2 | G2 | B1 | A1 | F1 | G1 | N/C | OV | -  | N/C |



|          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Segment  | BP | dp | E1 | D1 | C1 | dp | E2 | D2 | C2 | dp | E3 | D3 | C3 | dp | E4 | D4 | C4 | dp | E5 | D5 | C5 | dp | E6 | D6 | C6 | B6 | A6 | F6 | G6 | B5 | A5 | F5 | G5 | L2 | B4 | A4 | F4 | G4 | B3 | A3 |

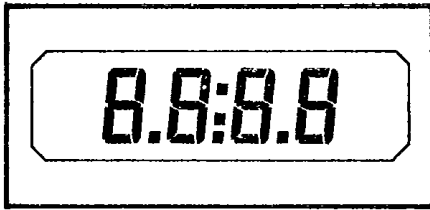
|          |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 |
| Segment  | F3 | G3 | L1 | B2 | A2 | F2 | G2 | B1 | A1 | F1 | G1 | BP |



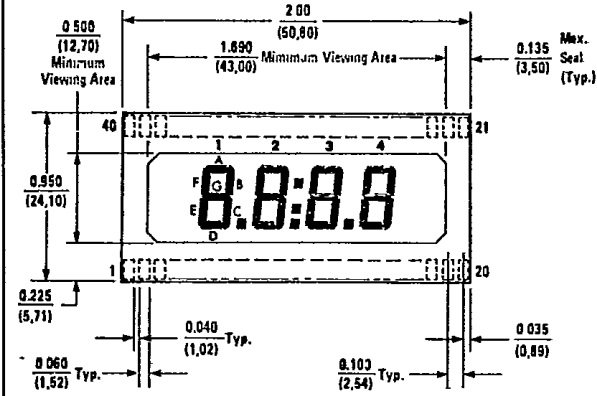
LCD Panel Displays

FE0804/FE1001

T-41-33

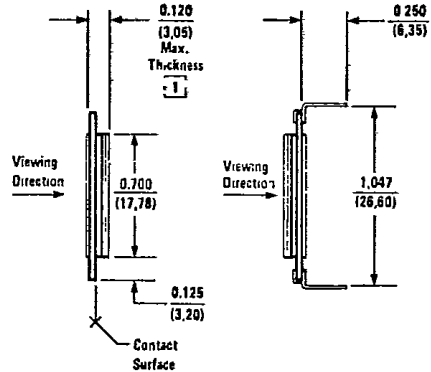


ACTUAL SIZE



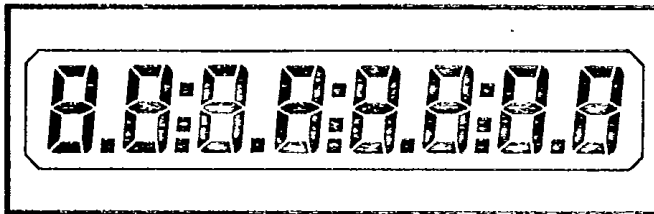
**FE0804\***  
4 DIGITS,  
0.35 inch (8.9 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number

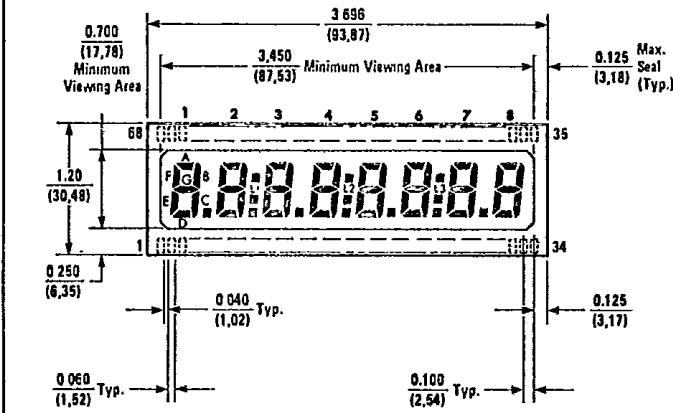


NOTES:  
**1** Maximum thickness includes front and back polarizers plus reflector attached.  
**2** Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

|          |    |     |     |     |    |    |    |     |    |    |    |     |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |    |    |    |    |     |     |    |
|----------|----|-----|-----|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|-----|-----|----|
| Pin. No. | 1  | 2   | 3   | 4   | 5  | 6  | 7  | 8   | 9  | 10 | 11 | 12  | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28  | 29 | 30 | 31 | 32 | 33  | 34 | 35 | 36 | 37 | 38  | 39  | 40 |
| Segment  | BP | N/C | N/C | N/C | E1 | D1 | C1 | DP1 | E2 | D2 | C2 | DP2 | E3 | D3 | C3 | DP3 | E4 | D4 | C4 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | COL | B2 | A2 | F2 | G2 | N/C | B1 | A1 | F1 | G1 | N/C | N/C | BP |

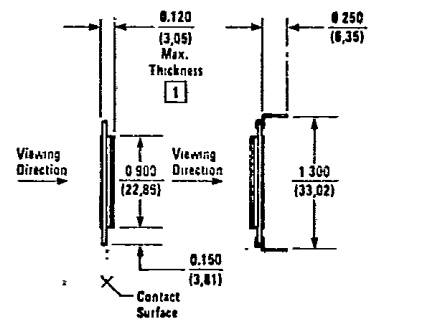


ACTUAL SIZE



**FE1001\***  
8 DIGITS,  
0.5 inch (12.7 mm) CHARACTER HEIGHT

\* See page 3-3 for complete part number



NOTES:  
**1** Maximum thickness includes front and back polarizers plus reflector attached.  
**2** Dimensions:  $\frac{\text{Inches}}{\text{(mm)}}$

|          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Segment  | BP | E1 | D1 | C1 | dp | E2 | D2 | C2 | dp | BP | E3 | D3 | C3 | dp | E4 | D4 | C4 | dp | E5 | D5 | C5 | dp | E6 | D6 | C6 | dp | E7 | D7 | C7 | dp | E8 | D8 | C8 | B8 | A8 | F8 | G8 | B7 | A7 | F7 |

|          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Pin. No. | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |
| Segment  | G7 | L3 | B6 | A6 | F6 | G6 | B5 | A5 | F5 | G5 | L2 | B4 | A4 | F4 | G4 | B3 | A3 | F3 | G3 | L1 | B2 | A2 | F2 | G2 | B1 | A1 | F1 | G1 |

