



User's Guide

**C-25-0708**

**VFD**

(Vacuum Fluorescent Character Display Module)

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October 31, 2006

# Vacuum Fluorescent Display Specification

**PART NUMBER:** C-25-0708

**FEATURES:** 9 Digits, Alphanumeric, 7-Segments with fixed Icons – P.O.S

**APPLICATION:** Character Display (*Alpha + 7 Seg*)

**RATINGS:** Below

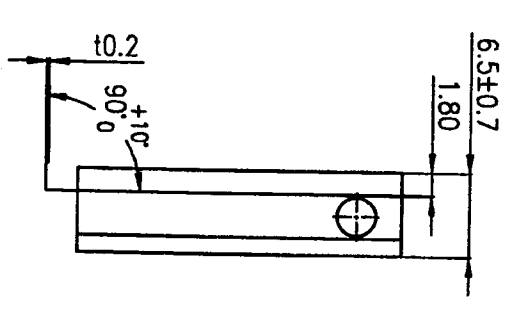
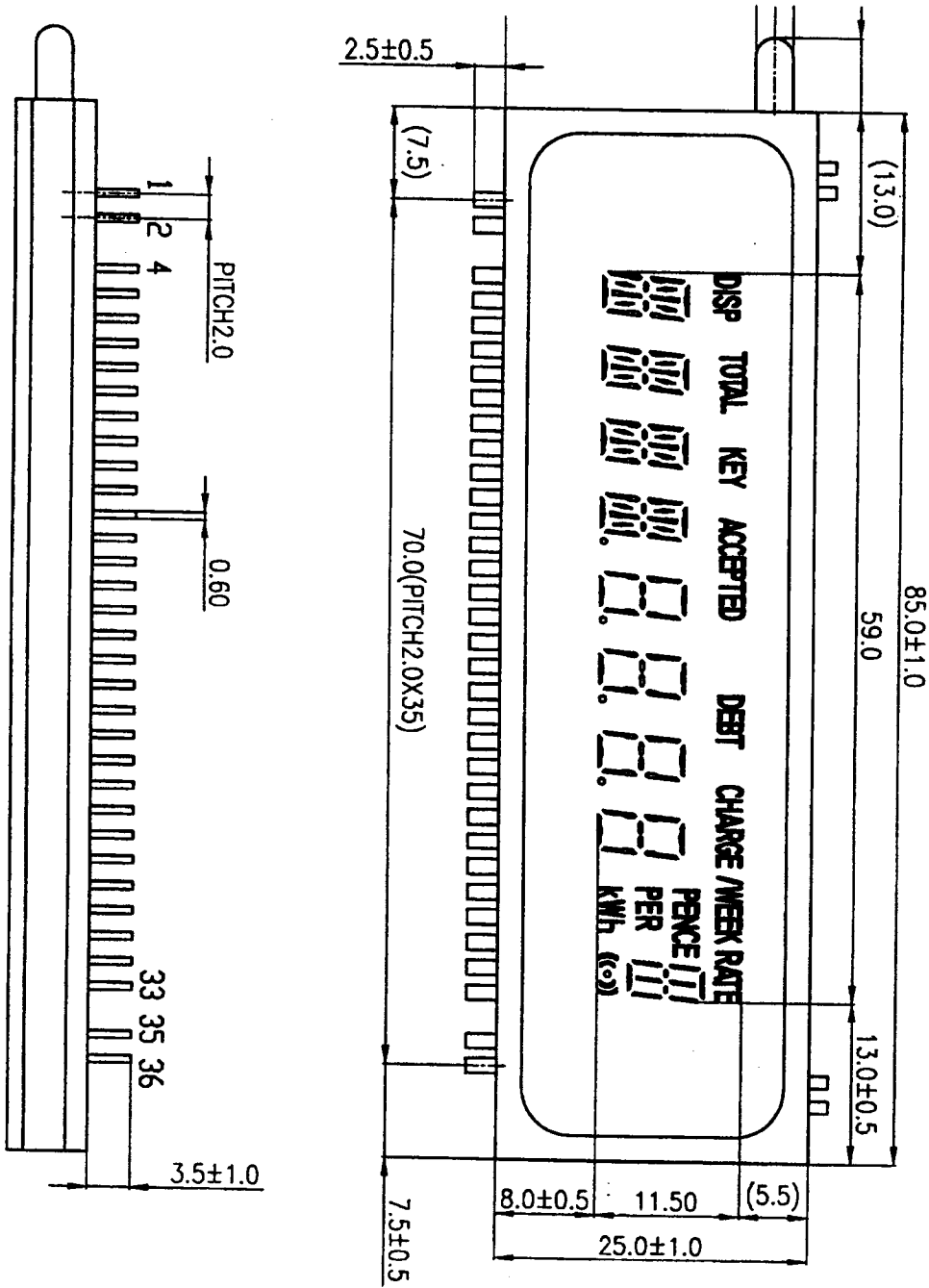
| <b>Outer Dimensions</b>      | Panel Length     | P.L.        | 85.0               | mm          |             |
|------------------------------|------------------|-------------|--------------------|-------------|-------------|
|                              | Panel Height     | P.H.        | 25.0               | mm          |             |
|                              | Panel Thickness  | P.T.        | 6.5                | mm          |             |
| <b>Leads</b>                 | Lead Pitch       | L.P.        | 2.0                | mm          |             |
|                              | Lead Out         | -           | SIL                |             |             |
| <b>Character Size</b>        | Character Height | C.H.        | 7.0                | mm          |             |
|                              | Character Width  | C.W.        | 4.3                | mm          |             |
| <b>Item</b>                  | <b>Symbol</b>    | <b>Min.</b> | <b>Recommended</b> | <b>Max.</b> | <b>Unit</b> |
| <b>Filament Voltage</b>      | Ef               | 2.79        | 3.1                | 3.41        | Vac         |
| <b>Peak Grid Voltage</b>     | ec               | -           | 27.0               | 30.0        | Vp-p        |
| <b>Peak Anode Voltage</b>    | eb               | -           | 27.0               | 30.0        | Vp-p        |
| -                            | -                | -           | -                  | -           | -           |
| <b>Duty Cycle</b>            | Du               | -           | 1/8                | -           | -           |
| <b>Pulse Width</b>           | tp               | -           | 140                | -           | uS          |
| <b>Operating Temperature</b> | Topr             | -20         | -                  | + 70        | C           |
| <b>Storage Temperature</b>   | Tstg             | -55         | -                  | + 80        | C           |
| <b>Color of Illumination</b> | Green            |             |                    |             |             |

## Electrical Characteristics

| Item                  | Symbol    | Test Condition  | Min.  | Typical | Max.  | Unit              |
|-----------------------|-----------|---|-------|---------|-------|-------------------|
| Filament Current      | lf        | Ef = 3.1 Vac  | 96.0  | 107.0   | 118.0 | mAac              |
|                       | -         | eb = ec = 0   | -     | -       | -     | -                 |
| Anode Current         | ib/1G     | Ef = 3.1 Vac<br>eb = 27.0 Vp-p<br>ec = 27.0 Vp-p<br>Du = 1/8<br>tp = 140 uS | -     | 12.0    | 24.0  | mAp-p             |
|                       | ib/2,3,4G |   | -     | 8.0     | 16.0  | mAp-p             |
|                       | ib/5,6,7G |   | -     | 5.0     | 10.0  | mAp-p             |
|                       | -         |   | -     | -       | -     | mAp-p             |
|                       | -         |   | -     | -       | -     | mAp-p             |
| Grid Current          | ic/1G     |   | -     | 12.0    | 24.0  | mAp-p             |
|                       | ic/2,3,4G |   | -     | 8.0     | 16.0  | mAp-p             |
|                       | ic/5,6,7G |   | -     | 5.0     | 10.0  | mAp-p             |
|                       | -         |   | -     | -       | mAp-p |                   |
|                       | -         |   | -     | -       | mAp-p |                   |
| Luminance             | L(G)      |   | 500   | 1000    | -     | cd/m <sup>2</sup> |
|                       | -         |   | (146) | (292)   | -     | fL                |
| Luminance Ratio       | Lmin/Lmax |   | 50    | -       | -     | %                 |
| Grid Cut-off Voltage  | Ecco      | Ef = 3.1 Vac<br>Eb = 27.0 Vdc   | -5.0  | -       | -     | Vdc               |
| Anode Cut-off Voltage | Ebco      | Ef = 3.1 Vac<br>ec = 27.0 Vp-p<br>Du = 1/8<br>tp = 140 uS                   | -2.5  | -       | -     | Vdc               |

\* Drive Mode is Dynamic State

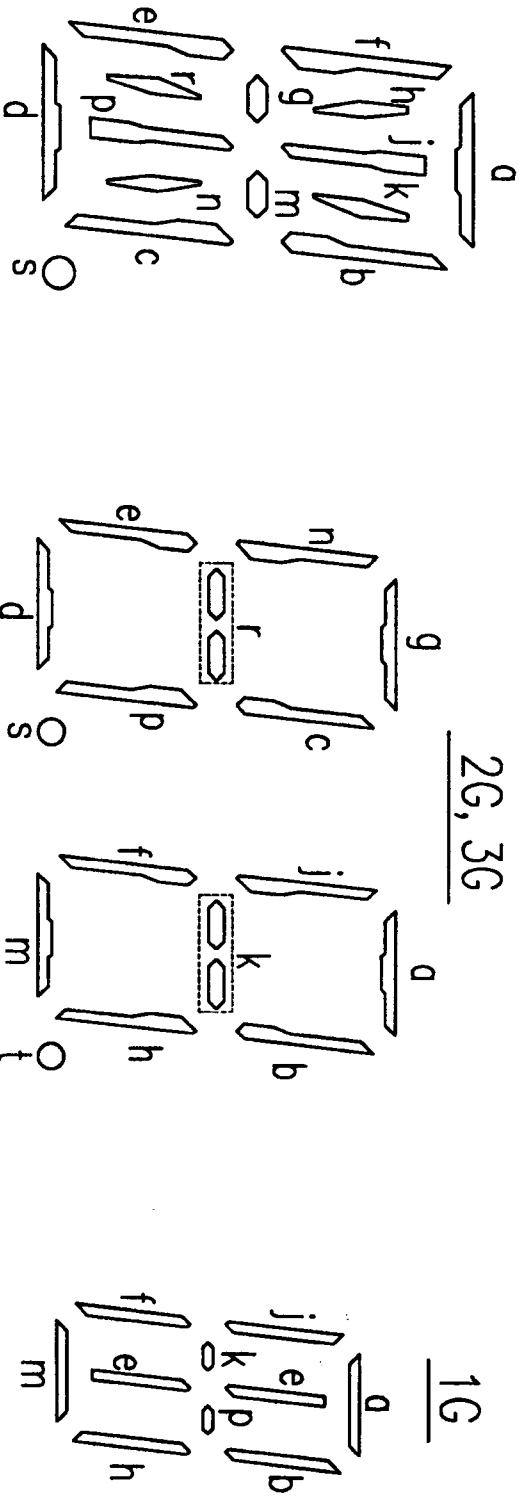
OUTLINE DRAWING (UNIT: mm)



LEAD DETAIL

<Grid Assignment and Segment Design>

|                 |                  |                |                     |                 |                   |                           |
|-----------------|------------------|----------------|---------------------|-----------------|-------------------|---------------------------|
| 7G              | 6G               | 5G             | 4G                  | 3G              | 2G                | 1G                        |
| <b>DISP</b><br> | <b>TOTAL</b><br> | <b>KEY</b><br> | <b>ACCEPTED</b><br> | <b>DEBT</b><br> | <b>CHARGE</b><br> | <b>WEEK RATE</b><br>      |
|                 |                  |                |                     |                 |                   | PENCE<br>PER<br>KWH (( )) |



<Color of illumination>

<Green X=0.250, Y=0.440>

## (TERMINAL CONNECTION)

|            |    |    |          |          |          |          |          |    |          |          |          |          |          |    |          |    |    |    |    |
|------------|----|----|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|----------|----|----------|----|----|----|----|
| Pin No.    | 1  | 2  | 3        | 4        | 5        | 6        | 7        | 8  | 9        | 10       | 11       | 12       | 13       | 14 | 15       | 16 | 17 | 18 | 19 |
| Connection | F  | F  | NP       | P<br>(k) | 7G       | P<br>(j) | P<br>(b) | 6G | P<br>(a) | P<br>(h) | 5G       | P<br>(f) | P<br>(m) | 4G | P<br>(t) | NC | 3G | NC | NC |
| Pin No.    | 20 | 21 | 22       | 23       | 24       | 25       | 26       | 27 | 28       | 29       | 30       | 31       | 32       | 33 | 34       | 35 | 36 |    |    |
| Connection | NC | 3G | P<br>(s) | 2G       | P<br>(d) | P<br>(e) | P<br>(p) | 2G | P<br>(r) | 1G       | P<br>(n) | P<br>(c) | P<br>(g) | 1G | NP       | F  | F  |    |    |

F: Filament    G: Grid    NP: No Pin    P: Anode    NC: No Connection