

User's Guide

C-29-1002FN

VFD

(Vacuum Fluorescent Character Display Module)

For product support, contact

New haven Display International
2511 Technology Drive #101
Elgin, IL 60124
Tel: (847) 844-8795 Fax: (847) 844-8796

October 26, 2006

Vacuum Fluorescent Display Specification

PART NUMBER: C-29-1002FN

FEATURES: 8 Digits, Alphanumeric, with Icons – AUDIO

APPLICATION: Character Display (Alphanumeric)

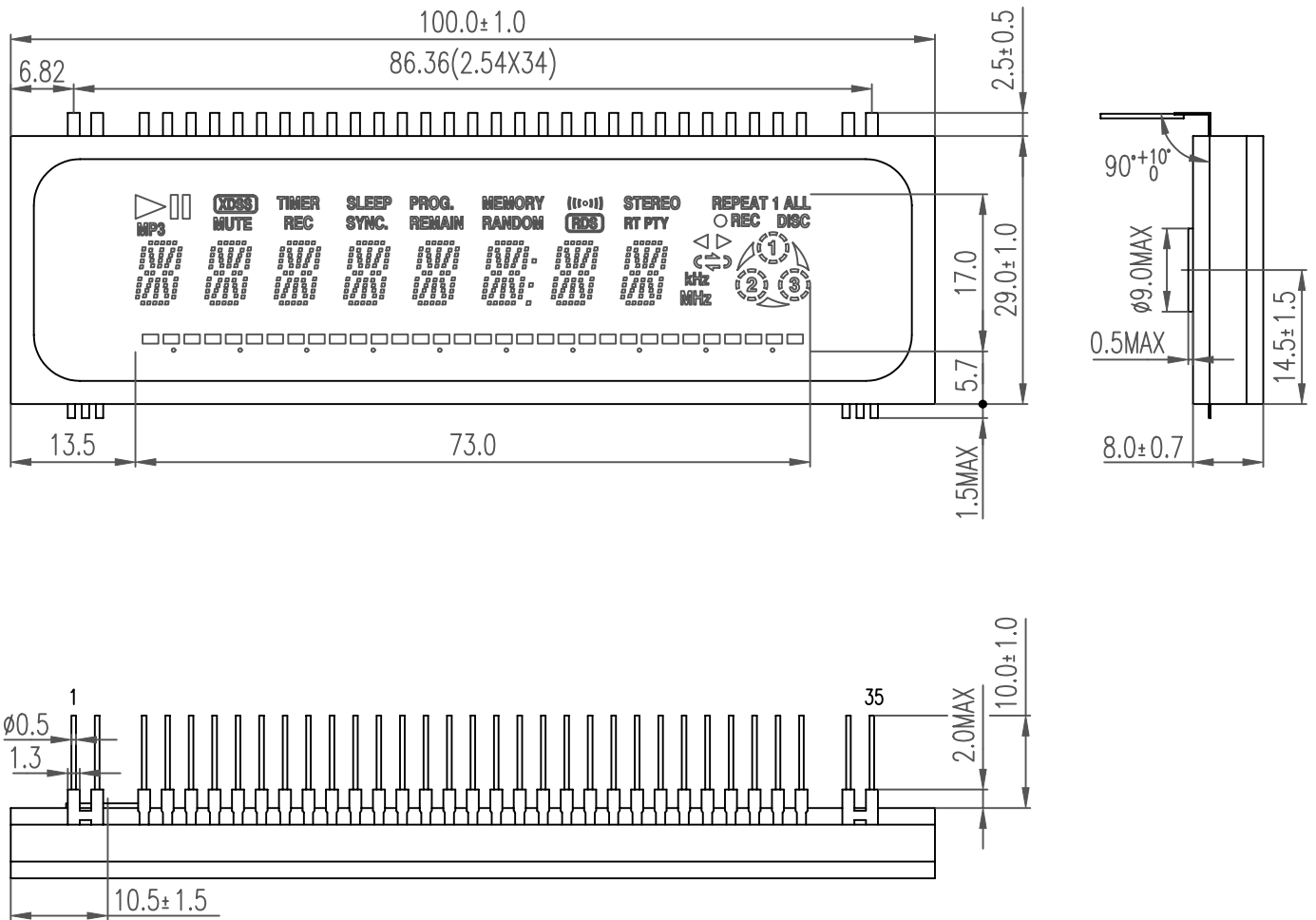
RATINGS: Below

| Outer Dimensions | Panel Length | P.L. | 100.0 | mm | |
|------------------------------|------------------|-------------|--------------------|-------------|-------------|
| | Panel Height | P.H. | 29.0 | mm | |
| | Panel Thickness | P.T. | 8.0 | mm | |
| Leads | Lead Pitch | L.P. | 2.54 | Mm | |
| | Lead Out | - | SIL | | |
| Character Size | Character Height | C.H. | 10.5 | mm | |
| | Character Width | C.W. | 5.0 | mm | |
| Item | Symbol | Min. | Recommended | Max. | Unit |
| Filament Voltage | Ef | 3.4 | 3.8 | 4.2 | Vac |
| Peak Grid Voltage | Ec | - | 28.0 | 32.0 | Vp-p |
| Peak Anode Voltage | Eb | - | 28.0 | 32.0 | Vp-p |
| Cut-off Bias | Ek | - | - | - | - |
| Duty Cycle | Du | - | 1/11 | - | - |
| Pulse Width | Tp | - | 100 | - | uS |
| Operating Temperature | Topr | -40 | - | + 80 | C |
| Storage Temperature | Tstg | -55 | - | + 85 | C |
| Color of Illumination | Green / Red | | | | |

Electrical Characteristics

| Item | Symbol | Test Condition | Min. | Typical | Max. | Unit |
|------------------------------|-----------|--|--------------|--------------|------------|---------------------------|
| Filament Current | lf - | Ef = 3.8 Vac eb = ec = 0 | 148.5 - | 165.0 - | 181.5 - | mAac - |
| Anode Current | ib/1~8G | Ef = 3.8 Vac eb = 28.0 Vp-p ec = 28.0 Vp-p Du = 1/11 tp = 100 uS | - | 9.0 | 16.0 | mAp-p |
| | ib/9G | | - | 11.0 | 22.0 | mAp-p |
| | ib/10G | | - | 15.0 | 30.0 | mAp-p |
| | - | | - | - | - | mAp-p |
| | - | | - | - | - | mAp-p |
| Grid Current | ic/1~8G | | - | 8.5 | 17.0 | mAp-p |
| | ic/9G | | - | 10.0 | 20.0 | mAp-p |
| | ic/10G | | - | 12.0 | 24.0 | mAp-p |
| | - | | - | - | - | mAp-p |
| | - | | - | - | - | mAp-p |
| Luminance | L(G) | | 350 (102) | 700 (204) | - | cd/m ² (fL) |
| | L(R) | | 35 (10.2) | 70 (20.4) | | cd/m ² (fL) |
| | | | | | | cd/m ² (fL) |
| Luminance Ratio | Lmin/Lmax | | 50 | - | - | % |
| Grid Cut-off Voltage | Ecco | Ef = 3.8 Vac Eb = 28.0 Vdc | -5.0 | - | - | Vdc |
| Anode Cut-off Voltage | Ebco | Ef = 3.8 Vac ec = 28.0 Vp-p Du = 1/11 tp = 100 uS | -5.0 | - | - | Vdc |

附图 1: 外形图 Outline Drawing (Unit:mm)

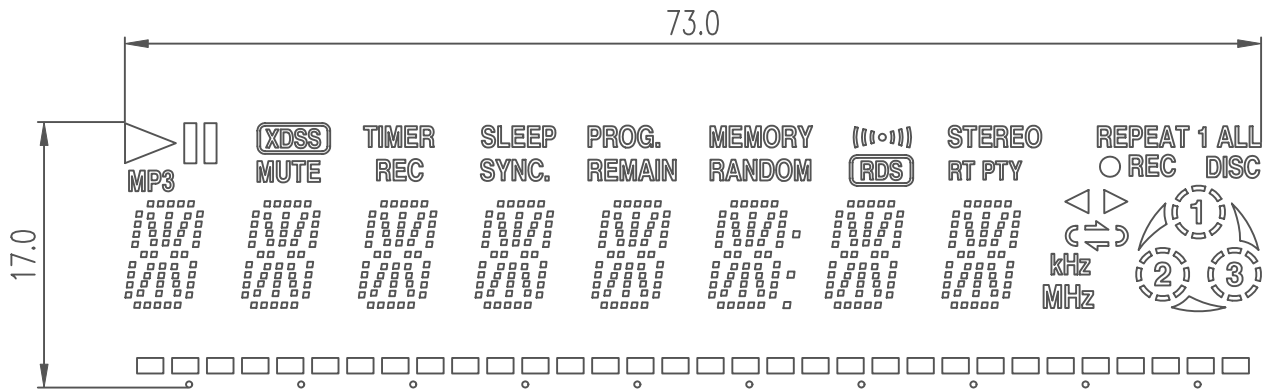


管脚连接 (PIN CONNECTION)

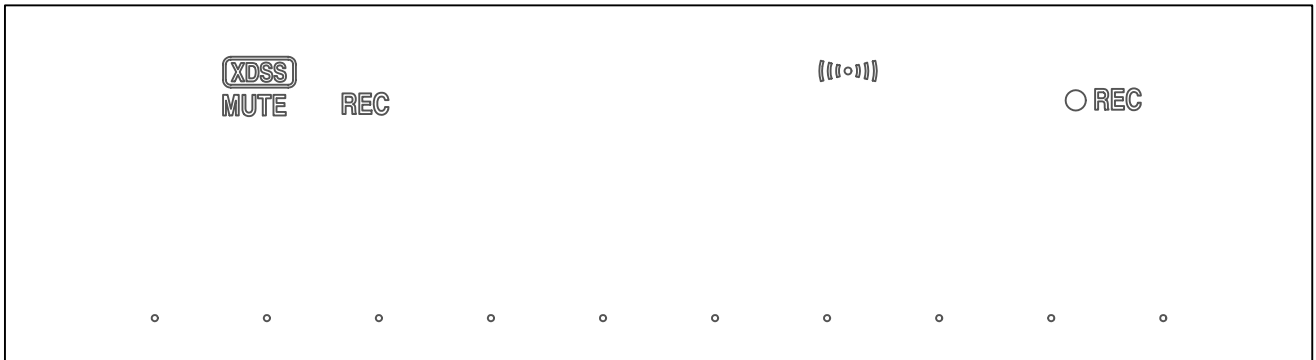
| | | | | | | | | | | | | | | | | | | |
|-----------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| 端子序号 (PIN NO.) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 连接 (CONNECTION) | F | F | NP | 1G | 2G | 3G | 4G | 5G | 6G | 7G | 8G | 9G | 10G | NC | P1 | P2 | P3 | P4 |
| 端子序号 (PIN NO.) | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | |
| 连接 (CONNECTION) | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | P13 | P14 | P15 | P16 | P17 | P18 | NP | F | F | |

注 :F: 灯丝 (Filament) P: 阳极 (Anode) G: 栅极 (Grid) NC: 无连接 (No connection) NP: 无引出脚 (No pin)

附图 2: 显示内容 Display Pattern

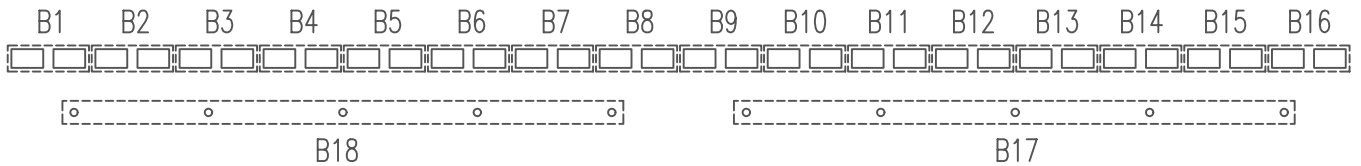
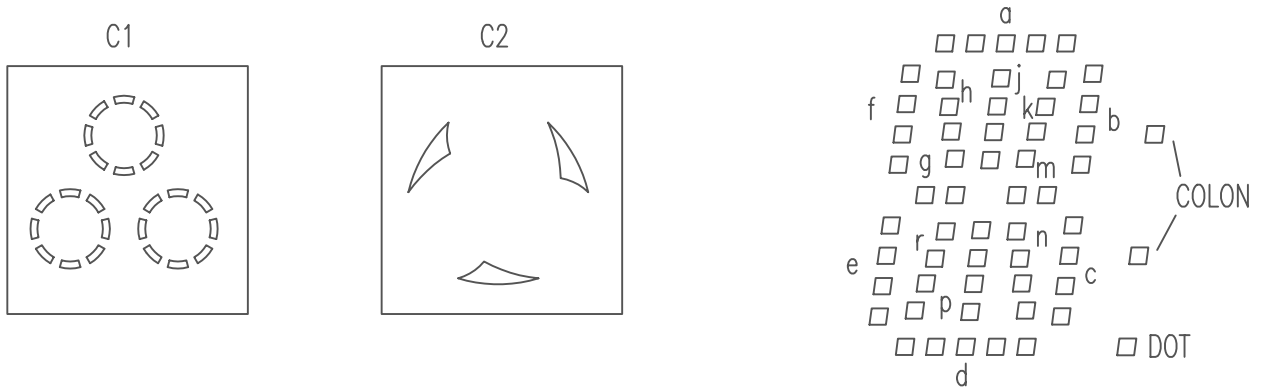
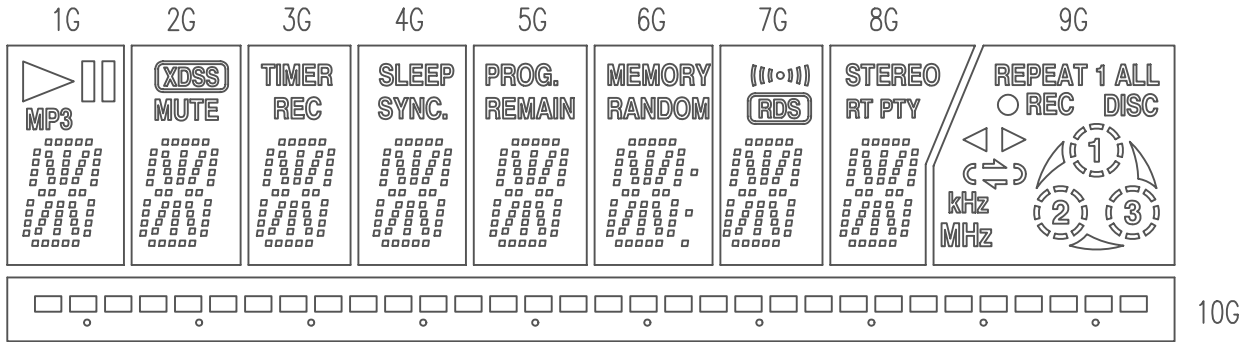


红色 Red (X=0.627,Y=0.371)



绿色 Green : 其他 Other (X=0.250, Y=0.440)

附图 3: 栅网分割 Grid Assignment



附图 4: 阳极连接 Anode Connection

| | 1G | 2G | 3G | 4G | 5G | 6G | 7G | 8G | 9G | 10G |
|-----|-----|------|-------|-------|--------|--------|----|--------|--------|-----|
| P1 | | | TIMER | SLEEP | PROG. | MEMORY | | STEREO | REPEAT | B18 |
| P2 | | MUTE | REC | SYNC. | REMAIN | RANDOM | | RT | 1 | B17 |
| P3 | MP3 | | | | | COLON | | PTY | ALL | B16 |
| P4 | | | | | | DOT | | | DISC | B15 |
| P5 | d | d | d | d | d | d | d | d | ○ REC | B14 |
| P6 | p | p | p | p | p | p | p | p | | B13 |
| P7 | n | n | n | n | n | n | n | n | | B12 |
| P8 | r | r | r | r | r | r | r | r | | B11 |
| P9 | e | e | e | e | e | e | e | e | | B10 |
| P10 | c | c | c | c | c | c | c | c | | B9 |
| P11 | m | m | m | m | m | m | m | m | | B8 |
| P12 | g | g | g | g | g | g | g | g | C1 | B7 |
| P13 | f | f | f | f | f | f | f | f | C2 | B6 |
| P14 | b | b | b | b | b | b | b | b | 1 | B5 |
| P15 | k | k | k | k | k | k | k | k | 2 | B4 |
| P16 | h | h | h | h | h | h | h | h | 3 | B3 |
| P17 | j | j | j | j | j | j | j | j | kHz | B2 |
| P18 | a | a | a | a | a | a | a | a | MHz | B1 |