# APD-192G064

Vishay Dale

## Plasma Panel Display Modules

192 x 64 Graphics Display with
Drive Electronics and TTL Level Data Interface


### FEATURES

- TTL level video interface
- Large, bright characters and graphics
- > 30:1 contrast ratio
- Slim profile
- Highly visible for long distance viewing

The APD-192G064 DC Plasma display offers viewing qualities designers seek such as high contrast, viewing angle of 150° minimum, and long distance readability. It is bright (50 foot lamberts minimum) with characters and graphics figures presented in a pleasing neon orange color against a black background. Plasma is much more readable and eye-pleasing than liquid crystal or vacuum fluorescent displays and is filterable to red, amber, or neutral density.

These plasma display panels are driven in a standard row - column refresh method much like a CRT display. The designer need only supply TTL level signals for SERIAL DATA, DOT CLOCK, COLUMN LATCH, ROW DATA, ROW CLOCK and DISPLAY ENABLE. The SERIAL DATA is entered with the DOT CLOCK up to frequencies as high as 8mHz. After a row of 192 pixels is clocked in, the COLUMN LATCH signal is toggled and the data is latched. At the time the data is latched, the display is briefly disabled using the DISPLAY ENABLE signal, then the row pointer is advanced with the ROW CLOCK signal. Once each frame the ROW DATA must be asserted to synchronize the column serial data with the beginning row. The recommended scanning frequency is approximately 70 Hz but may be as high as 200 Hz. The high clock rate on the data clock allows for rapid refresh and maximum access time to the refresh ram.

### ELECTRICAL SPECIFICATIONS

**Voltages Required:** Vsp: + 75 VDC.
Vcc: + 5 VDC.
Vsn: - 110 VDC. Vrw: + 12 VDC (- 98 VDC).
(+ 12 VDC referenced to - 110 VDC.)
**Power Required:** Typical = 12 watts.
Maximum = 55 watts.

### OPTICAL SPECIFICATIONS

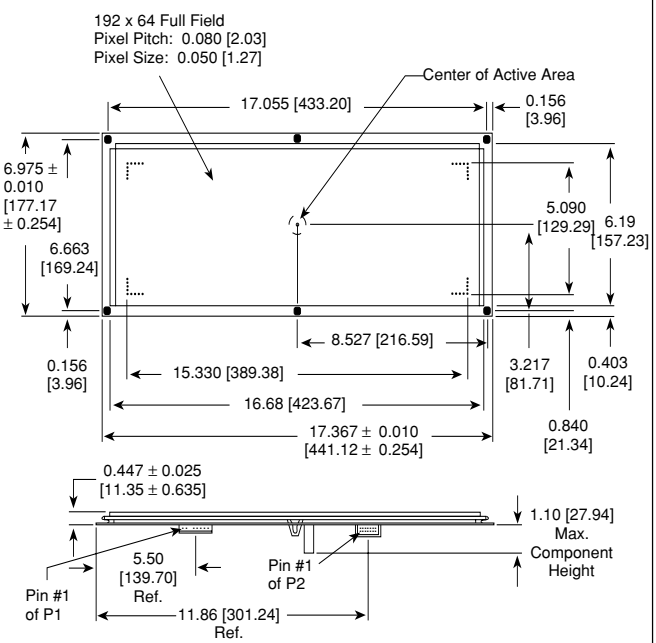
**Viewing Area:** 15.33" [389.38mm] W x 5.09"[129.29mm] H.
**Pixel Pitch:** 0.080" [2.03mm].
**Pixel Size:** 0.050" [1.27mm].
**Character Array:** 8 x 8: 24 x 16. 6 x 8: 32 x 16.
**Character Size:** 0.48" [12.19mm] W x 0.64" [16.26mm] H.
**Luminance:** 50 foot lamberts minimum.

**STANDARD ELECTRICAL SPECIFICATIONS***

| DESCRIPTION | SYMBOL | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|
| Logic supply | $V_{cc}$ | + 4.5 | + 5.0 | + 5.5 | VDC |
| Anode supply | $V_{sp}$ | — | + 75.0 | + 80.0 | VDC |
| Cathode supply | $V_{sn}$ | — | - 110.0 | - 125.0 | VDC |
| Cathode control** | $V_{rw}$ | + 10.8 | + 12.0 | + 15.0 | VDC |
| Total $V_{sp}$ and $V_{sn}$ | $V_{tot}$ | 170.0 | 185.0 | 205.0 | VDC |
| Logic 1 Input | $V_{ih}$ | 2.0 | — | — | VDC |
| Logic 0 Input | $V_{il}$ | — | — | 0.8 | VDC |

*Recommended operating voltages. All maximums are absolute maximum.
**$V_{rw}$ is referenced to $V_{sn}$.

### DIMENSIONS in inches [millimeters]




### ORDERING INFORMATION

| DESCRIPTION | PART NUMBER |
|---|---|
| Display Module with Drivers and TTL Interface | APD-192G064 |
| Data Connector | 280105-05 |
| Power Connector | 280108-12 |

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