

## Plasma Display Modules

128 x 32 Graphics Display with Drive Electronics  
TTL Level Data Interface and Integrated DC Converter



### FEATURES

- TTL level video interface
- Large characters
- Highly visible for long distance viewing
- Slim profile
- > 30:1 contrast ratio
- On board DC/DC converter
- Bright and pleasant neon orange color
- Very affordable

The APD-128G032A DC plasma display offers viewing qualities designers seek such as high contrast, viewing angle of 150° minimum and long distance readability. Its bright (50 foot Lambert 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 128 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 70Hz, but may be as high as 200Hz. The high clock rate on the data clock allows for rapid refresh and maximum access time to the refresh ram.

### ELECTRICAL SPECIFICATIONS

**Voltage(s) Required:** VDC: + 12 to + 24 VDC. Vcc: + 5 VDC.

**Power Required:** Typical = 12 watts. Maximum = 45 watts.

### OPTICAL SPECIFICATIONS

**Viewing Area:** 12.75" [323.8mm] W x 3.15" [80.01mm] L.

**Character Array:** (8 x 8) 16 x 4. (6 x 8) 21 x 4.

**Character Size:** 0.65" [16.51mm] H x 0.45" [11.43mm] W.

**Pixel Size:** 0.050" [1.27mm].

**Pixel Pitch:** 0.100" [2.54mm].

**Luminance:** 50 foot lamberts.

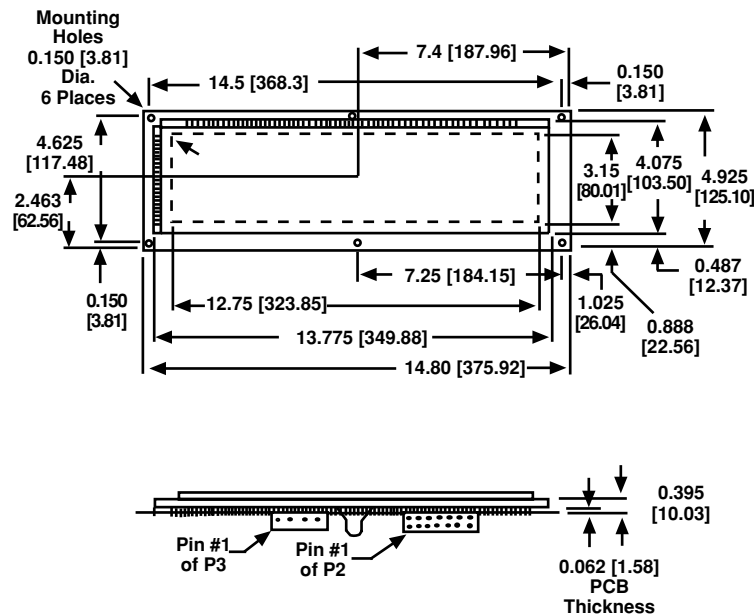
| STANDARD ELECTRICAL SPECIFICATIONS* |        |                       |                |                 |       |
|-------------------------------------|--------|-----------------------|----------------|-----------------|-------|
| DESCRIPTION                         | SYMBOL | MIN.                  | TYP.           | MAX.            | UNITS |
| DC converter input                  | VDC    | + 10.0                | + 24.0         | + 28.0          | VDC   |
| DC converter power<br>@ + 12 V      | Amps   | Screen Clear<br>0.100 | 50% Lit<br>1.7 | 100% Lit<br>3.5 |       |
| Logic 1 input                       | Vih    | 2.0                   | —              | —               | VDC   |
| Logic 0 input                       | Vil    | —                     | —              | 0.8             | VDC   |

\*Recommended operating voltages. All maximums are absolute maximum.

### ORDERING INFORMATION

| DESCRIPTION                                                                | PART NUMBER  |
|----------------------------------------------------------------------------|--------------|
| Display Module with Drivers, TTL Interface and On Board DC Converter ..... | APD-128G032A |
| Power Connector .....                                                      | 280108-13    |
| Data Connector .....                                                       | 280105-05    |

## DIMENSIONS in inches [millimeters]



## PIN DESCRIPTION

### P3 - POWER CONNECTOR

| PIN | SIGNAL     | DESCRIPTION           |
|-----|------------|-----------------------|
| 1   | VDC + 12 V | DC converter supply   |
| 2   | GND        |                       |
| 3   | GND        |                       |
| 4   | KEY/N/C    | Used to key connector |

### P2 - DATA CONNECTOR

AMP #103309-2 or equivalent.  
Mates with AMP 746195-2, MOLEX 39-27-1146 or equivalent.

| PIN | DESCRIPTION    | PIN | DESCRIPTION |
|-----|----------------|-----|-------------|
| 1   | DISPLAY ENABLE | 2   | GROUND      |
| 3   | ROW DATA       | 4   | GROUND      |
| 5   | ROW CLOCK      | 6   | GROUND      |
| 7   | COLUMN LATCH   | 8   | GROUND      |
| 9   | DOT CLOCK      | 10  | GROUND      |
| 11  | SERIAL DATA    | 12  | GROUND      |
| 13  | No connect     | 14  | GROUND      |



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