

128 X 64 DOT MATRIX, GAS-PLASMA DISPLAY SYSTEM

PLASMADOT™ full field dot matrix DC plasma display systems include driver electronics. Babcock’s display drivers have been designed for applications that have requirements for customized fonts, overlays or detailed graphic animation. Model PD02B104 requires +5 V(dc) from the host system and +70 V (dc) and -110 V (dc) from an external power supply to operate. The refresh control of the display is then performed externally by the host system processor.

FEATURES

| | |
|-----------------------|-----------------------|
| Display Format: | 64 rows x 128 columns |
| Overall Size: | 8.00" x 5.00" x .95" |
| Overall Viewing Area: | 5.10" x 2.54" |
| Pixel Size: | .020" x .020" |
| Row Pitch: | .040" |
| Column Pitch: | .040" |
| Luminance: | 50 fL |
| Viewing Angle: | 130° |
| Contrast Ratio: | 20:1 |
| Color: | Orange |

ELECTRICAL SPECIFICATIONS

Absolute Maximum Ratings

| Item | Symbol | Min | Max | Unit |
|---------------------------------|--------|----------|-----------|------|
| Logic Supply Voltage | Vcc | -0.5 | +7.0 | V |
| Row Driver Supply Voltage | Vrw | Vsn -0.5 | Vsn +15.0 | V |
| Column High Voltage Supply | Vsp | | +80 | V |
| Anode High Voltage Supply | Vsn | | -135 | V |
| Total High Voltage (Vsp to Vsn) | Vtotal | | 215 | V |
| Logic Input High | Vih | +2.40 | Vcc +1.5 | V |
| Logic Input Low | Vil | -0.50 | + 0.08 | V |

Recommended Operating Conditions (Measured with all pixels lit.)

| Item | Symbol | Min | Typ | Max | Unit |
|--------------------------------|--------|-----------|-----------|-----------|-------|
| Logic Supply Voltage | Vcc | 4.75 | 5.0 | 5.25 | Volts |
| Logic Supply Current | Icc | | | 50 | mA |
| Column High Voltage Supply | Vsp | 60.0 | 70.0 | 75.0 | Volts |
| Column High Voltage Current | Isp | | | 100 | mA |
| Row Drive Logic Supply | Vrw | Vsn +10.8 | Vsn +12.0 | Vsn +13.2 | Volts |
| Row Drive Logic Supply Current | | | | 30 | mA |
| Row Driver High Voltage Supply | Vsn | -100 | -110 | -120 | Volts |
| Row Drive High Voltage Current | Isn | | | 130 | mA |

Environmental Specifications

| Item | Min | Max | Unit |
|---------------------------------|-----|--------|------|
| Operating Temperature | 0 | +60 | °C |
| Storage Temperature | -40 | + 85 | °C |
| Humidity (Non-Condensing) | 0 | 95 | % |
| Vibration (10-55 Hz, .06" P-P) | | 3 | G |
| Shock P (acceleration, 11 Msec) | | 30 | G |
| Altitude (Operating) | | 20,000 | ft. |
| Altitude (Non-Operating) | | 70,000 | ft. |

CUSTOMER INTERFACE

Interface Connector

Mating Connector: AMP Part No. 746285-2, Molex 71247-0429, 3M 3385-6600

| Pin No. | Name | Description | Pin No. | Name | Description |
|---------|----------|---------------------------|---------|------|---------------|
| 1 | DE | Display Enable Signal | 2 | GND | Signal Ground |
| 3 | RDATA | Row Driver Data Input | 4 | GND | Signal Ground |
| 5 | RCLK | Row Driver Clock Input | 6 | GND | Signal Ground |
| 7 | COLLATCH | Column Driver Latch Input | 8 | GND | Signal Ground |
| 9 | DOTCLOCK | Column Driver Clock Input | 10 | GND | Signal Ground |
| 11 | SDATA | Column Driver Data Input | 12 | GND | Signal Ground |
| 13 | GND | Signal Ground | 14 | GND | Signal Ground |

Power Supply Connector

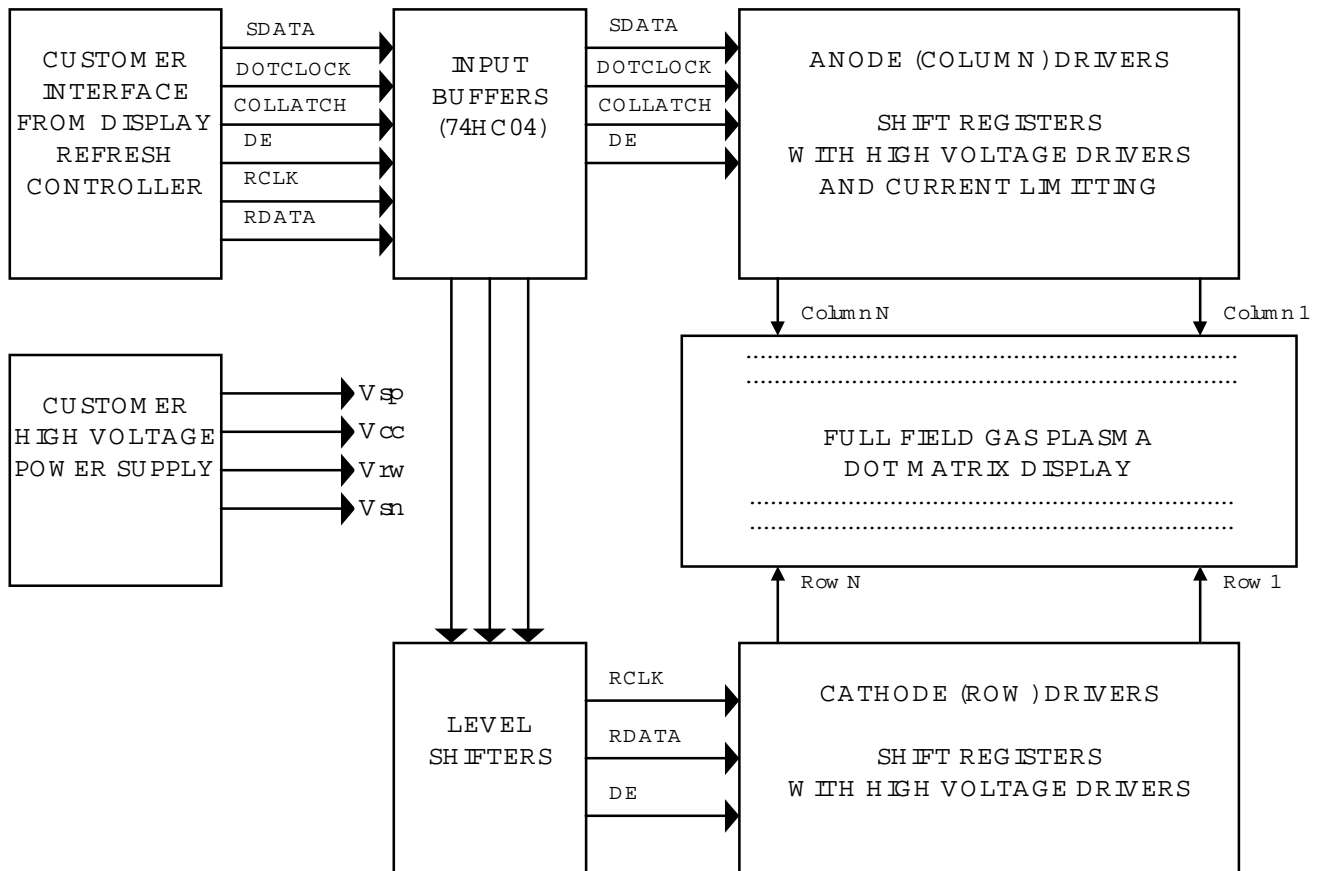
Mating Connector: Amp Part No. 640428-8, Molex 09-50-3081, 09-06-5087, Methode 3300-108

| Pin No. | Name | Description |
|---------|------|---|
| 1 | Vsn | Row Driver Negative High Voltage Supply |
| 2 | Vrw | Row Driver Logic Supply |
| 3 | KEY | Keying Position (no pin) |
| 4 | GND | High Voltage Supply Ground |
| 5 | GND | Logic Supply Ground |
| 6 | Vcc | Digital Logic Supply (-5V) |
| 7 | | No Connection |
| 8 | Vsp | Column Driver Position High Voltage |

Block Diagram

To drive a dot matrix display, both the columns and the rows need to be independently driven. Figure 1 shows how a PLASMADOT™ display is driven. There is one driver for each column that sources current to the display and one driver for each row that sinks that current to the return supply. When the display is scanned, only one row driver is on at a time but any number of the column drivers can be on.

FIGURE 1:



Display Intensity Control:

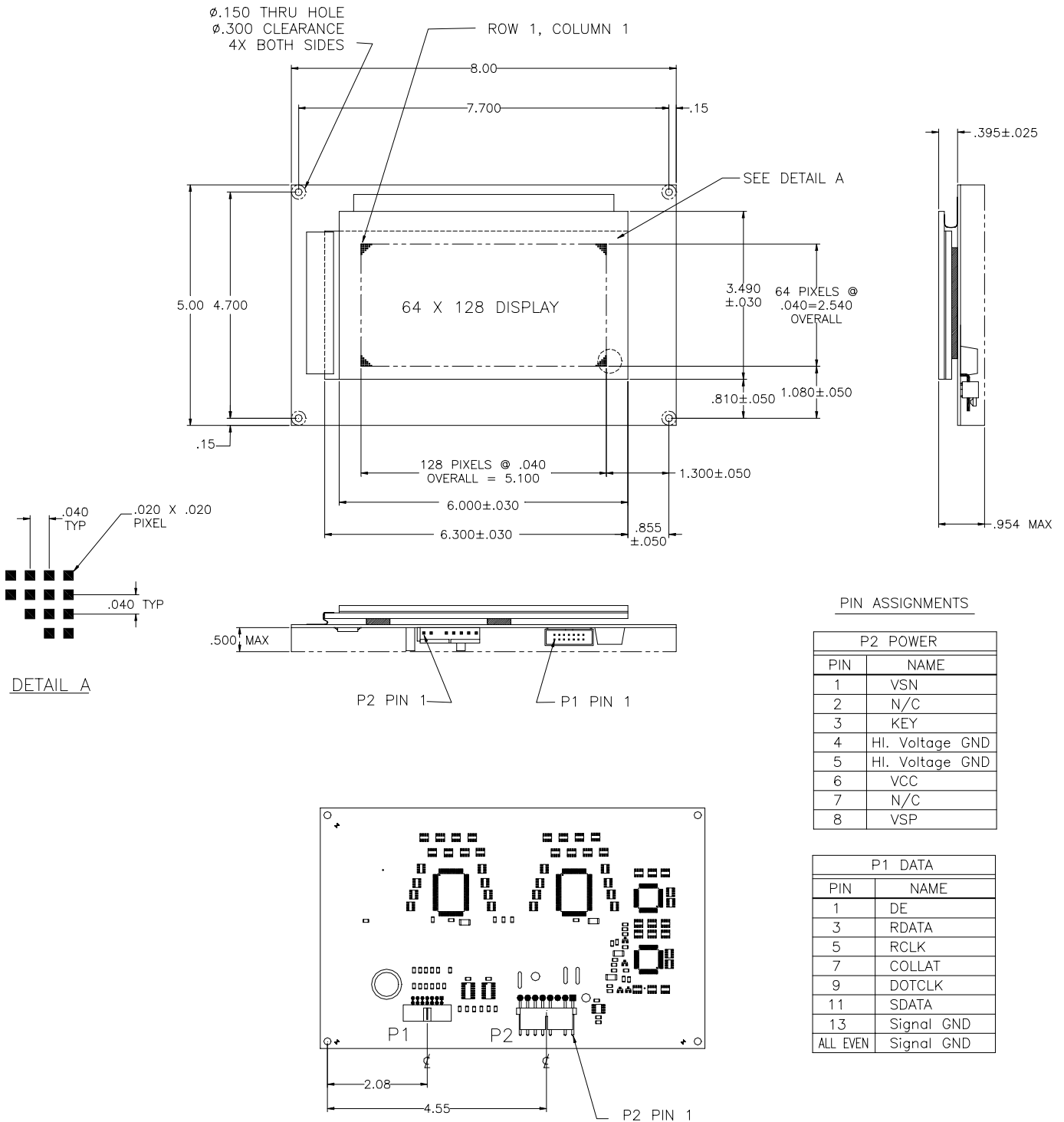
There are two methods of controlling the brightness of the display.

- To control the brightness of the entire display, vary the display on time with the DE signal.
- Second method is by frame rate modulation, this method requires less hardware complexity but limits the number of intensity levels that may be achieved.

With either method of intensity control, it should be noted that the intensity of a DC plasma display is not linear with the pixels on time. (i.e. The pixel is not half as bright when left on for half the time.)

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Outline and Mounting Dimensions:



SPECIFICATIONS ARE FOR REFERENCE ONLY

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