

# Plasma Display Modules

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



## FEATURES

- TTL level video interface
- Slim profile
- Highly visible for long distance viewing
- Large bright characters
- High contrast

The APD-128G064A DC plasma display offers viewing qualities designers seek such as high contrast, viewing angle of 150° minimum and excellent 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 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

**Power Required:** Typical = 12 watts.  
Maximum = 35 watts.

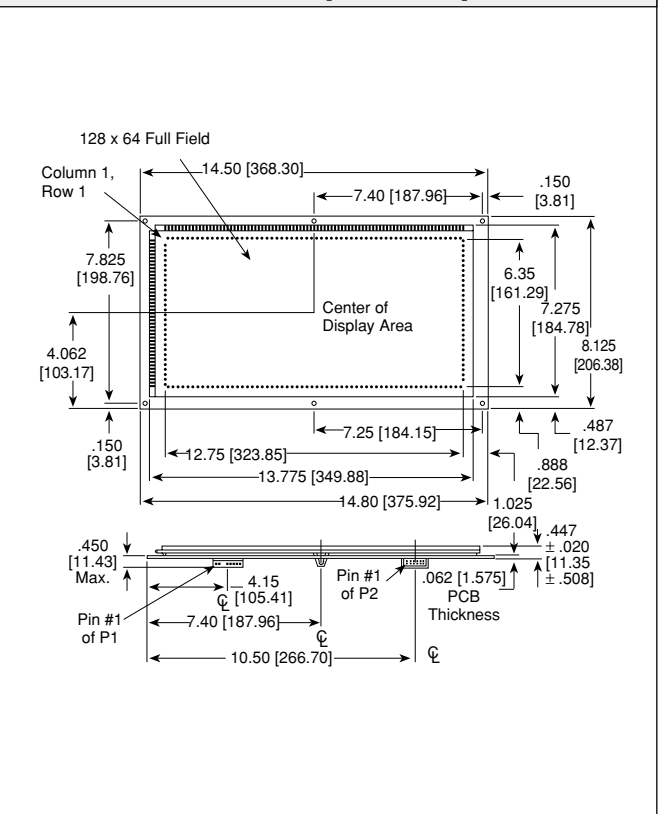
### Maximum Current Requirements:

- $I_{cc}$  ( $V_{cc}$  logic) - 0.050 Amps.
- $I_{sp}$  (Column driver supply) - 0.192 Amps.
- $I_{sn}$  (Row driver supply) - 0.192 Amps.
- $I_{rw}$  (Row driver logic) - 0.010 Amps.

## OPTICAL SPECIFICATIONS

- Viewing Area:** 12.75" [323.85mm] W x 6.35" [161.29mm] L
- Character Array:** 21 characters per line, 8 lines of characters.
- Character Size:** 0.65" [16.51mm] H x 0.45" [11.43mm] W.
- Pixel Size:** 0.050" [1.27mm] square.
- Pixel Pitch:** 0.100" [2.54mm].
- Luminance:** 50 foot lamberts minimum.
- Contrast Ratio:** > 20:1.

## DIMENSIONS in inches [millimeters]



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	+ 80	VDC
Cathode Supply	$V_{sn}$	—	- 110	- 125	VDC
Cathode Control**	$V_{rw}$	+ 10.8	+ 12.0	+ 15.0	VDC
Total + $V_{sp}$ & - $V_{sn}$	$V_{tot}$	170	185	205	VDC
Logic 1 Input	$V_{ih}$	2.0	—	—	VDC
Logic 0 Input	$V_{il}$	—	—	0.8	VDC

\*Recommended operating voltages. All maximums are to be considered absolute maximum.

\*\* $V_{rw}$  is referenced to  $V_{sn}$ .

## ORDERING INFORMATION

DESCRIPTION	PART NUMBER
Display Module with Drivers and TTL Interface .....	APD-128G064A
Display Module with Drivers, TTL Interface and On Board DC Converter .....	APD-128G064A-1
Data Connector Kit .....	280105-05
Power Connector Kit .....	280108-12



## Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.