SYL2281-V0
Product Brief

1080p LCOS Light Modulation Panel

Features

LCOS Panel

- Single panel field sequential color Liquid Crystal
- On Silicon (LCOS) with digital drive
- 0.37” active display diagonal
- 1080p (1920x1080) array of mirrors (4.27 µm pitch)
- 3 mounting packages available:
  - SYL2281-V0 Chip-on-PCB with 80-pin
  - SYL2281-V0-S0 Chip-on-PCB with 60-pin, reduced pins
  - SYL2281-V0-H0 Chip-on-PCB with 80-pin, reduced thermal resistance package
- Displays sequential colors up to 9 Color Fields per Frame (CF/F) with programmable color field duration
- Second generation Syndiant architecture for improved power and optical efficiency
- No high voltage supply needed; maximum supply voltage is only 3.3 / 3.8V

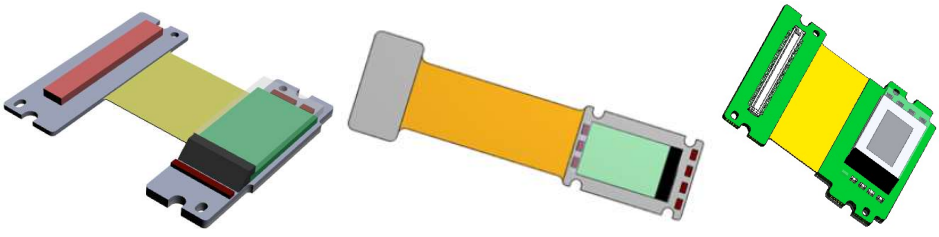
Example Applications

- Portable media players
- Digital cameras & camcorders
- Near-eye displays
- Gaming projectors
- HDTV set-top boxes
- Laptops & Tablets
- Multi-media players
- Head-up displays (HUD)
- Digital signage
- HD DVD players
- Automotive
- 3-D projectors
- LED and Laser Projectors

Overview

Syndiant's SYL2281 display panel offers 1080p resolution in a small 0.37" diagonal panel, making it perfect for ultra-portable applications that demand high-definition resolution and brighter display in a small form factor. The display panel is offered in three packaging options, providing the choice for optional heatsink mounting. It delivers exceptional image quality with vivid colors while meeting the power and cost requirements for low-power applications.

Syndiant's patented LCOS micro display architecture integrates all-digital smart electronics onto the display panel. An application specific SIMD processor performs bit serial data manipulation to control each pixel. The intelligence is divided between the controller and the panel; the controller formats and arbitrates data flow to the panel, and the panel logic computes new pixel values and updates the pixels. Pixel values are separated into base and sharpener bits which maintain sharpness while reducing data bandwidth to the panel.



SYL2281-V0 SYL2281-V0S0 SYL2281-V0-H0

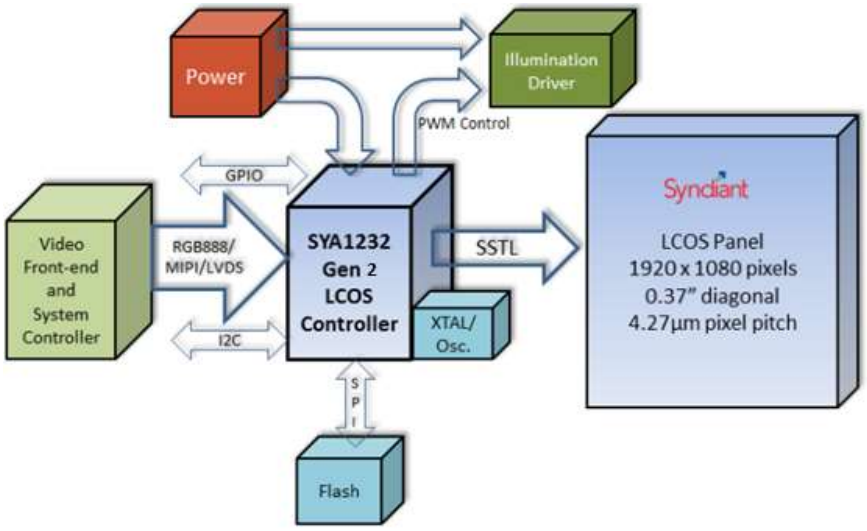
Specifications

Resolution	1080p (1920x1080)	**Reflectivity**	70%
Display Diagonal	0.37”	**Package Height**	Varies
Contrast Ratio	500:1	**Package Type**	Chip on PCB
Pixel Pitch	4.27 µm	**Operating LC Temperature**	-10˚C to 80˚C
Fill Factor	90.8%	**Storage Temperature**	-40˚C to 80˚C

Syndiant Advantages

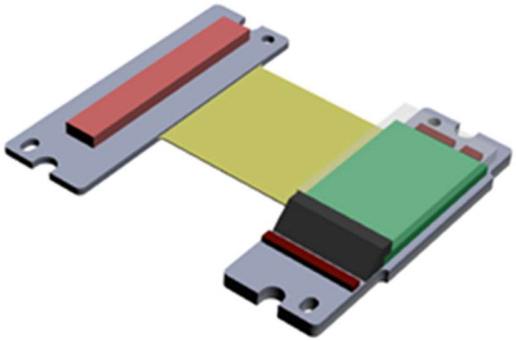
- High resolution: Provides a comprehensive user experience by enabling users to access a wide variety of content, such as email messages, attachments, web pages, text, graphics, multimedia, and full-motion videos
- Low power: ideal for mobile, battery powered, and near eye products
- Ultra-small: Form factor meets requirements for embedded applications
- Low thermal resistance package: Improved thermal substrate and fast LC enable saturated colors and high illumination on time for higher brightness applications
- Smooth gray scale at all brightness levels, matching the visual response of the eye

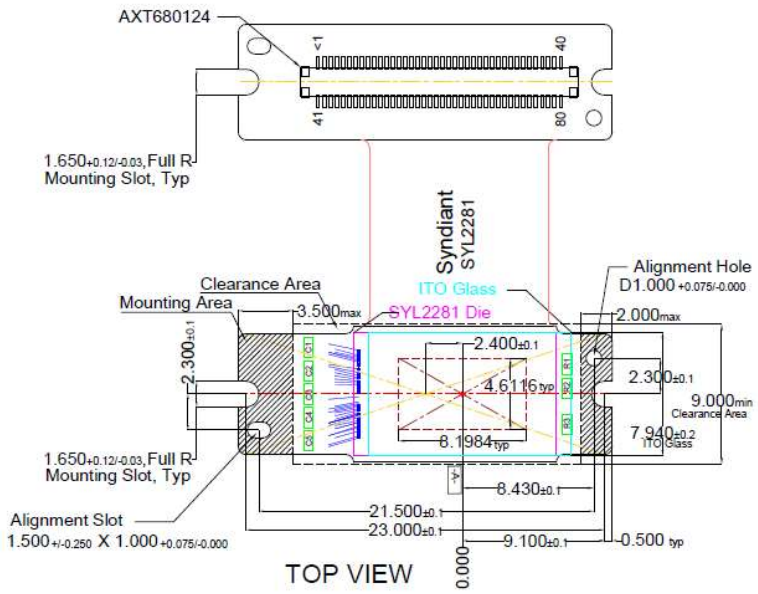
System Block Diagram

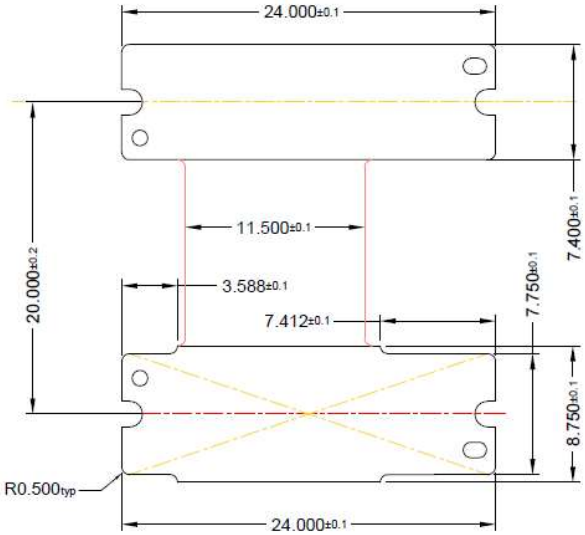


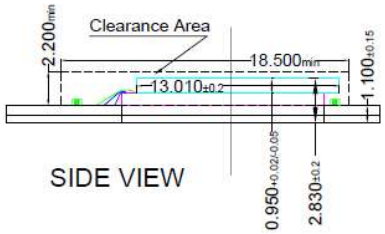
1. SYL2281-V0 Mechanical Specifications

Chip-on-PCB with 80-pin Panasonic connector





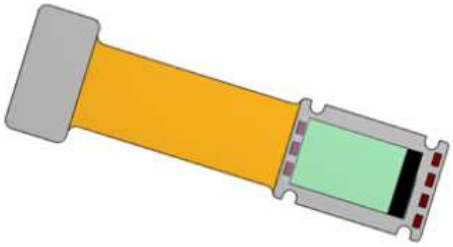


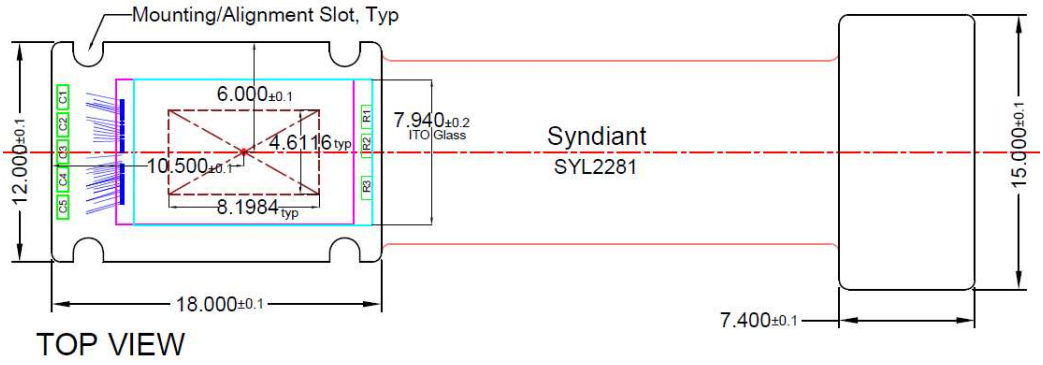


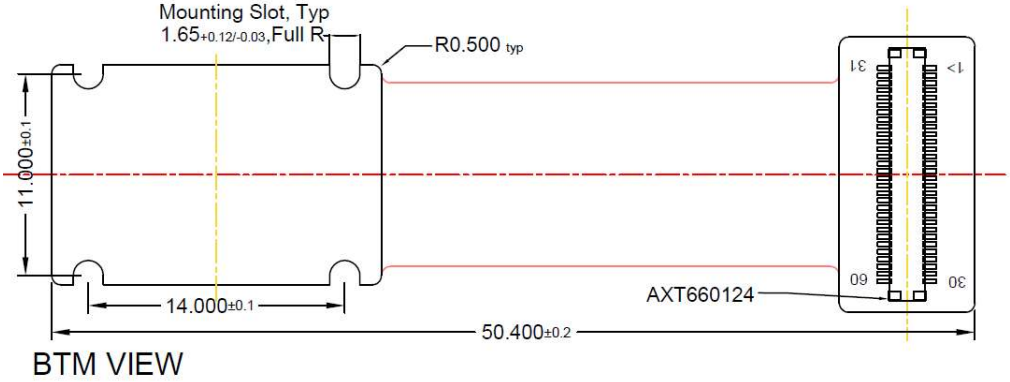
All units in mm

2. SYL2281-V0-S0 Mechanical Specifications

Chip-on-PCB with 60-pin Panasonic connector
Reduced pins package



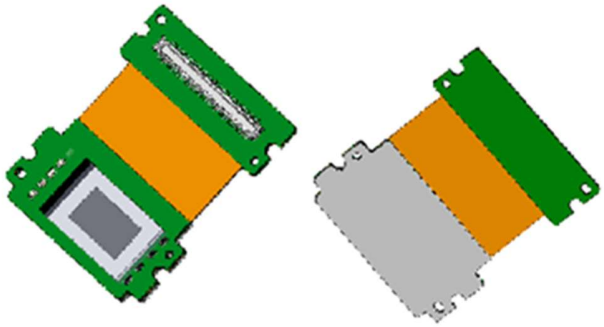


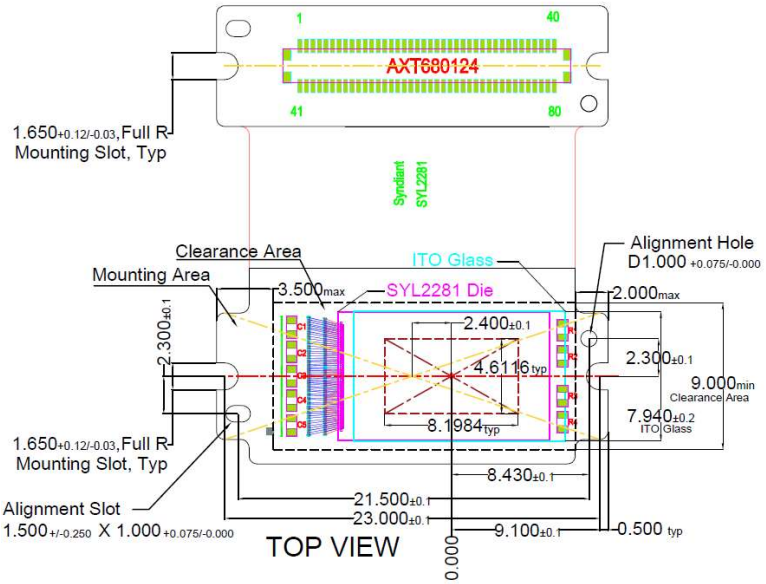


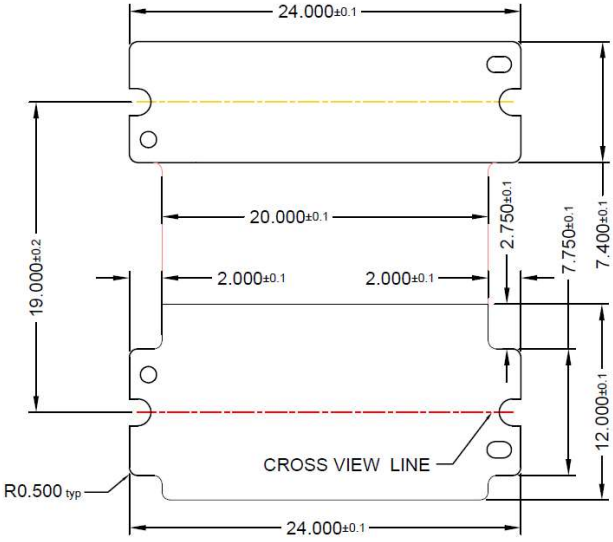
All units in mm

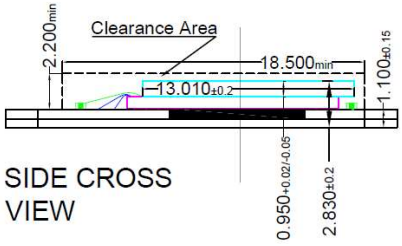
3. SYL2281-V0-H0 Mechanical Specifications

Chip-on-PCB with 80-pin Panasonic connector
Reduced thermal resistance packaging









All units in mm