

The Industry's Smallest, 1.8 cm (0.7-Type) 480K-dot SVGA Data Display LCD

# LCX034AL

Recently, mobile presentations, in which a personal computer and an LCD projector are brought to the site of the talk, have become common. As a result, there is now demand for ultra-portable LCD projectors that feature even further miniaturization and lighter weight.

The LCX034AL introduced here represents a Sony's polycrystalline silicon TFT technology developed in earlier data display, and achieves the high transmittance of 13% despite being an ultraminiature device.

The LCX034AL is the definitive ultraminiature data projector LCD, and features superlative cost-performance characteristics as well.

- The industry's smallest, 1.8 cm (0.7-Type) SVGA display LCD achieves the high transmittance of 13%.
- High light-resistant device structure adopted
- Multi-format display, including VGA, NTSC, and PAL
- Cross talk-free and ghost-free circuit adopted
- Up/down and/or right/left inversion functions
- Input level conversion circuits

## ■ The Industry's Smallest, 1.8 cm (0.7-Type) SVGA LCD

The development and introduction of a new structure unique to Sony and a new fabrication process, in combination with the use of high-precision orientation technology, allows the LCX034AL to display SVGA (800 × 600 dots) for the first time in a 1.8 cm (0.7-Type) miniature display. Furthermore, despite its miniature size, the LCX034AL achieves an aperture ratio of 42% and an optical transmittance of 13%, and thus provides bright, high quality images. This device will allow the creation of portable data projector smaller than the B5 paper size.

## ■ Improved Light Resistance

In addition to the DMS (dual metal shield) structure, which is the light resistance structure adopted in earlier Sony data projector LCDs, the LCX034AL adopts the industry's first high light-resistant field flattening structure. This structure provides improved light resistance, increased brightness, and increased reliability, and allows excellent image quality to be achieved at brightness levels in excess of 500 ANSI lm. (See figure 1.)

## ■ Significantly Improved Image Quality

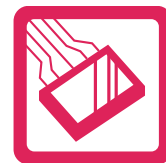
Since the LCX034AL is a 1.8 cm (0.7-Type) miniature device, Sony has taken all possible efforts to improve image quality. Not only does this device include the uniformity improving circuit provided in earlier products, it also adopts the new "ghost-free structure" wiring technology that reduces the wiring resistance. This achieves both cross talk-free and ghost-free display, and, in conjunction with the high light resistance structure, provides high quality display. Furthermore, by adopting the newly-developed CXD3503R color shading correction IC, end products can correct not only color shading due to the panel, but color shading due to the illumination system as well. (See figure 2.)

## ■ Ease of Use

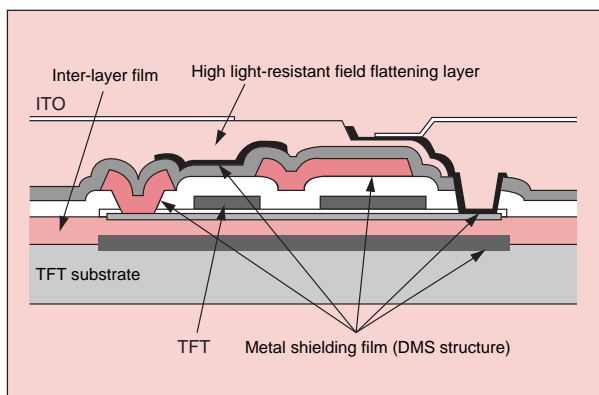
To support use in a wide range of applications, Sony projector LCDs include not only up/down and/or right/left inversion functions, but also built-in level shifters to allow the use of 5 V drive timing system signals for easier system design. Sony also provides products such as the newly-developed CXA3512R high-voltage drive sample-and-hold IC, which is optimal for driving Sony LCD products, and the CXD3500R programmable timing generator. Thus Sony provides a complete environment of easy-to-use products, from LCD panels through systems. (See figures 3 and 4.)

## V O I C E

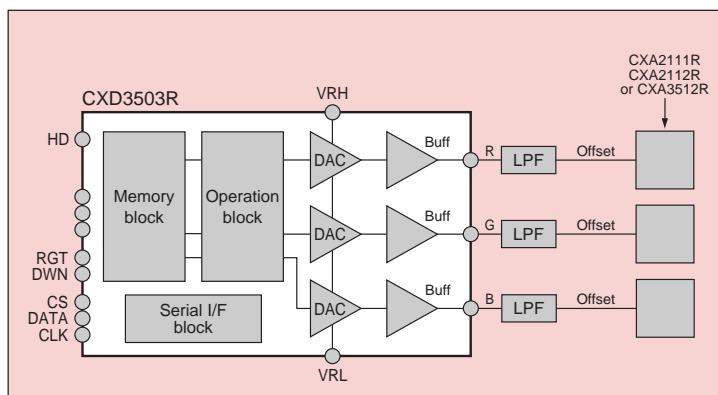
Sony has continued to challenge the leading edge in LCDs. Based on Sony's unique polycrystalline silicon TFT technology, these devices have steadily advanced in brightness, precision, and miniaturization. The LCX034AL, which concentrates Sony's technologies to achieve further miniaturization, high light resistance, and high transmittance, will open new markets for mobile projectors.



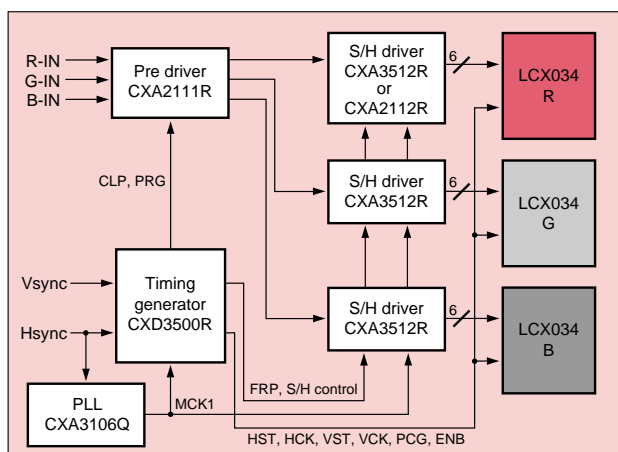
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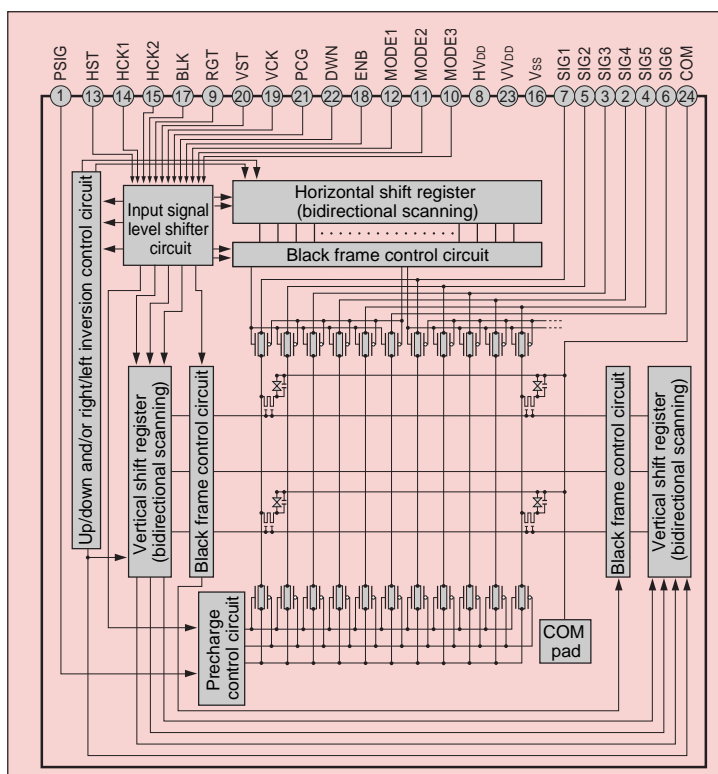
■ Figure 1 High Light Resistance Structure



■ Figure 2 Color Shading Correction System



■ Figure 3 LCX034AL System Block Diagram



■ Figure 4 LCX034AL Block Diagram