Digital Camera LCD Product Line
Features Low Power and Digital Interface Support

ACX318/319/320/321/324

Sony has now completely revamped its LCD lineup to respond to the increasingly rapid growth in the digital camera market.

These displays retain the 100% ratio viewing area and high picture quality of earlier Sony LCDs and at the same time achieve significantly lower power and digital interface support.

This new product line contributes to increased end product design efficiency by providing a wide range of drive options and allowing the use of common drivers.

- ■ **Low-temperature polycrystalline silicon LCD**
- ■ **High color purity**
- ■ **Low power**
- ■ **Digital interface support**
- ■ **Adjustment free (digital interface)**
- ■ **Narrow frame, thin form factor**
- ■ **Use of the same driver for multiple panels**
- ■ **Ratio viewing area: 100%**

▣ Low Power

Sony has reduced the supply voltage from 12 V to 8.5 V and achieved significant power reduction in these LCD panels by switching from the conventional COM DC drive to COM AC drive. (See figures 1 and 2.)

▣ Digital Interface Support

The advantages of switching to digital include obviating the need for D/A converters, lower noise, and adjustment-free manufacturing. Of course, these products also support use with a conventional analog interface.

V O I C E

Providing a full product line requires ramping up production for multiple products at the same time and thus we had to make unreasonable demands on everyone involved. While it was difficult to achieve low-voltage drive without sacrificing the optical transmittance and narrow frame design advantages, I am confident we have created products that will be more than satisfactory. The monitor is the face the camera presents to the user. Give Sony's "beautiful faces" a try in your digital camera products.

▣ Extensive Lineup

Since these products form an extensive product line in terms of both pixel counts and screen sizes, they can respond flexibly to differing end product sizes and concepts. (See figure 3.) Sony is also planning to expand this product line even further.

▣ Use of the Same Driver for Multiple Panels

This extensive lineup allows drive using the same driver, even for the EVF products. (See figure 4.) The CXM4006 is used with digital interface applications, and the CXM3005 is used with analog interface applications. Sony provides the digital drive CXM4007 for compatible drive with EVF units, and since only one driver is required, power consumption, space, and costs are reduced.

▣ Thinner Form Factor

Sony has introduced thinner light guide plates, has actively promoted revised backlight structures, and has even introduced glass etching. Thinner form factors is another area where Sony leads the industry. (See figure 5.) For example, the ACX318ELN features a module thickness, including the backlight, of only 2.685 mm, the top level in the industry.

▣ Ratio Viewing Area: 100%

In digital cameras it is critically important both when composing and taking images as well as when reviewing images to be able to see the whole image without any part being left out. All these panels support the implementation of 100% ratio viewing area displays and viewfinders.

▣ High Color Purity

The color filters are manufactured internally by ST Liquid Crystal Display Corp., which manufactures the panels. This allows each color to be designed optimally for the panel, making high color purity color reproduction possible.
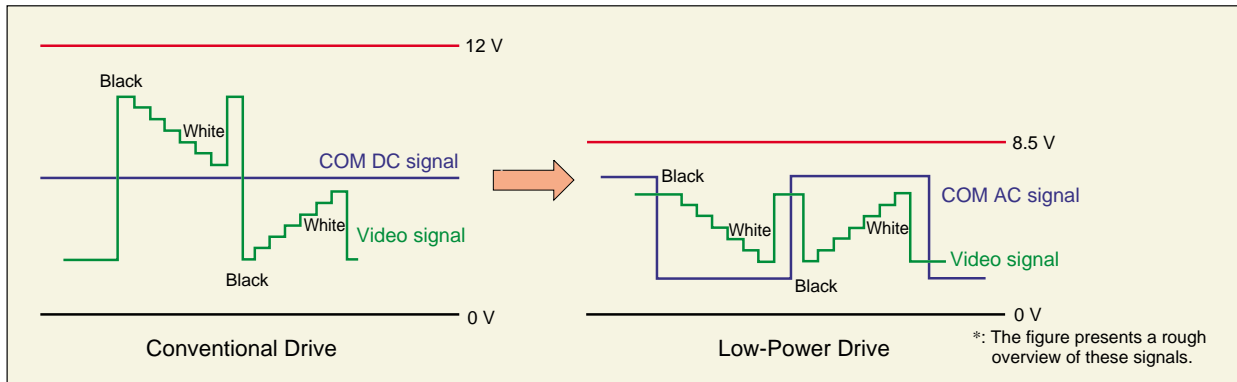
▣ Narrow Frames

COG-less drive based on low-temperature polycrystalline silicon fabrication allows these panels to have extremely narrow frames. This is a particularly attractive feature for the design of digital cameras, in which smaller models with larger LCD monitors are now desired.

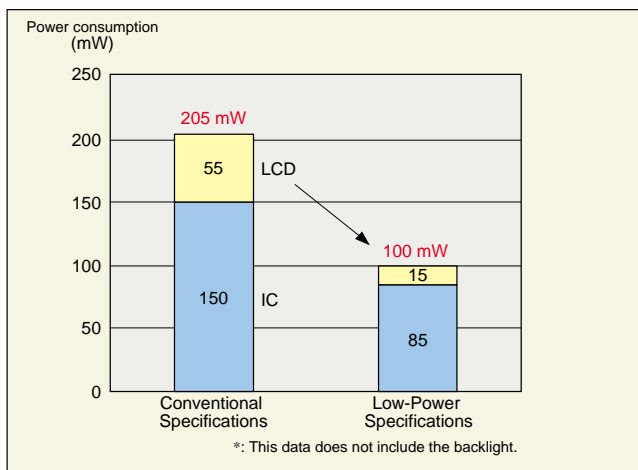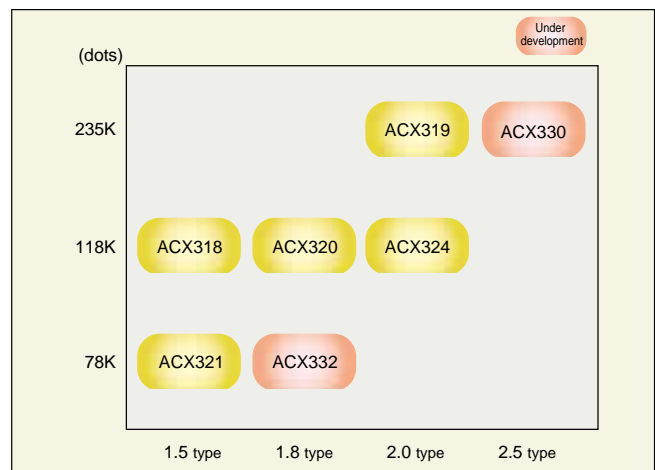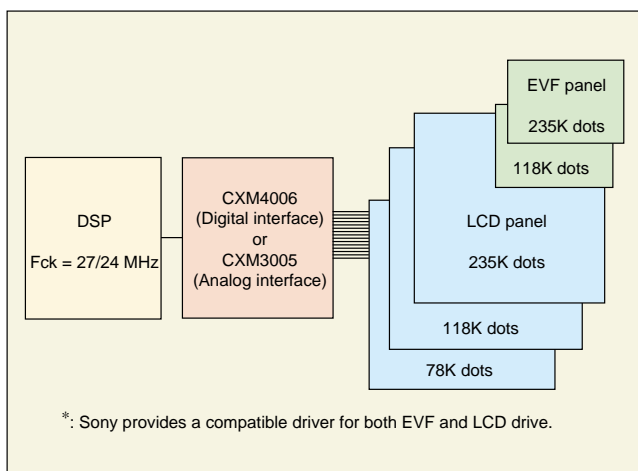## ▣ Up/Down and/or Right/Left Inversion Functions

Since these panels support up/down and/or right/left inversion functions controlled with serial signals only, they provide increased design flexibility in, for example, digital cameras with a rotating monitor.

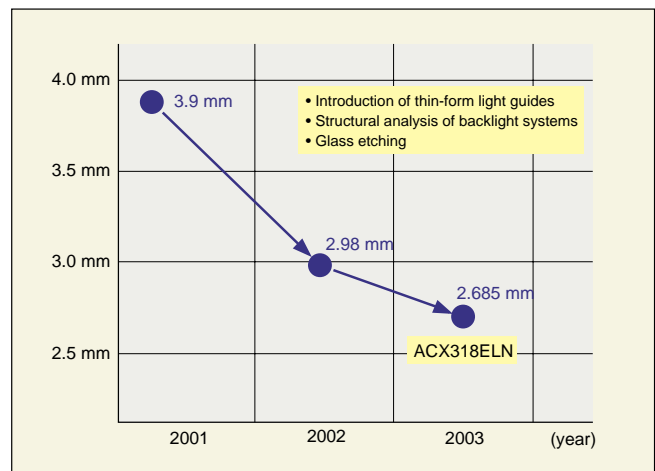■ **Figure 1   Low Power Principles**

■ **Figure 2   Power Consumption Comparison (Example)**

■ **Figure 3   Extensive Lineup**

■ **Figure 4   Using the Same Driver**

■ **Figure 5   Trend Towards Thinner 1.5-type Panels**