High-Transmittance/Low-Power Transmissive Color
8.8 cm (3.5-type) 123K-Dot LCD Panel

ACX310AK

The 3.5-type color LCD panel is widely used as the monitor in digital video cameras.
Sony has already released the 200K-dot ACX302BK as a high-resolution low-temperature polycrystalline silicon TFT LCD. Now, to expand its lineup of LCD panels, Sony is releasing the 123K-dot ACX310AK, which provides the same functions as the ACX302BK.

- **8.8 cm (3.5-type) 123K-dot LCD panel**
- **High transmittance (9.5%) achieved by low-temperature polycrystalline silicon TFT technology**
- **Low power consumption: 50 mW (when a 12 V power supply is used)**
- **Analog full-color display**
- **Wide aspect ratio display function**
- **Up/down and/or right/left inversion functions**

Supports Flexible End-Product Design

With the release of the ACX310AK 3.5-type color LCD panel for digital video cameras in addition to the 200K-dot ACX302BK high-resolution panel, Sony now provides a lineup of two models in this type of product. This means that in the future, the user product line can be expanded using only low-temperature polycrystalline silicon TFT LCDs, thus increasing flexibility in end-product design.
Additionally, the external panel dimensions were designed to match those of existing amorphous silicon TFT LCDs, thus flexibly supporting needs for changing the panel type.

High Transmittance Achieved

As a result of optimized pixel design using Sony's low-temperature polycrystalline silicon TFT technology, this device achieves the high aperture ratio of 80%. Furthermore, by adopting a new pixel structure, Sony was able to radically increase the optical transmittance over that provided by conventional amorphous silicon TFT LCD panels, achieving a value of 9.5% in the ACX310AK. (See table 1.)

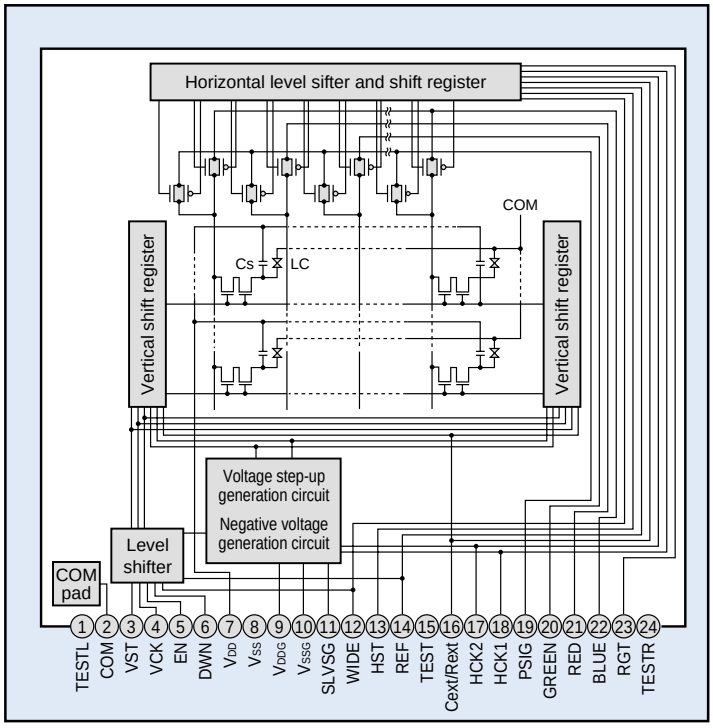
Even Lower Power and Improved Ease of Use

By using unique Sony-developed circuit technology, Sony was able to achieve the lowest power for this class of panel in the ACX310AK. (See table 1.) Furthermore, by incorporating voltage step-up and negative voltage generation circuits in addition to the functions that have been provided in earlier products, the up/down and/or right/left inversion functions and the wide aspect ratio display functions, Sony was able to obviate the need for certain of the power-supply voltages previously provided externally to the panel. This improves the ease of use of this panel. (See figure 1.) Sony is now developing a new system-on-chip IC (the CXA3549R) that will integrate both timing generator and control functions on a single chip. This new single-chip IC will make drive circuit design significantly easier. (See figure 2.)

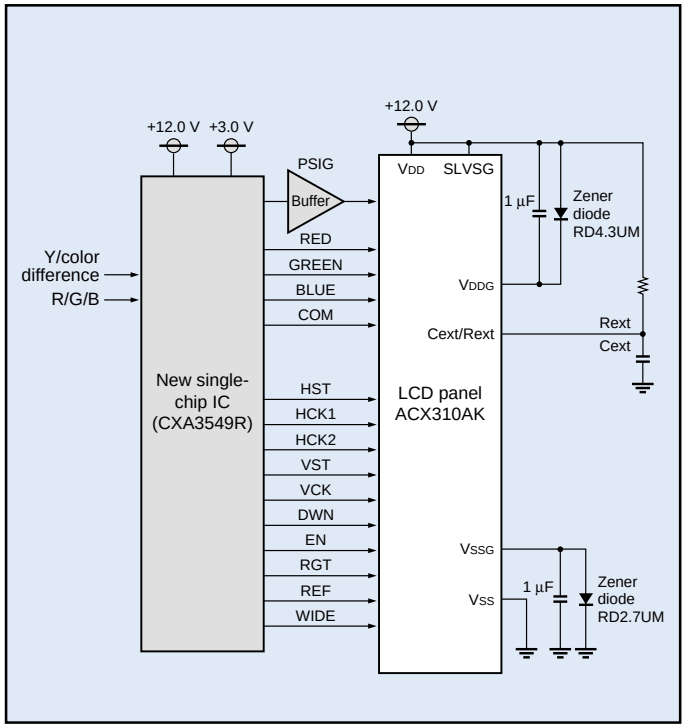
V O I C E

With the release of the ACX310AK announced here in addition to the ACX302BK, Sony has expanded its lineup of 3.5-type color LCD panels. Furthermore Sony has already released 2.5-type color LCD panels. I strongly recommend that you try these Sony low-temperature polycrystalline silicon TFT LCD panels. I am confident that these panels can provide product differentiation in your DVC products.

New Products



■ **Figure 1 Panel Block Diagram**



■ **Figure 2 System Block Diagram**

■ **Table 1 3.5-type Transmissive LCD Panel**

Item	ACX302BK	ACX310AK
Screen size	8.8 cm (3.5 type)	8.8 cm (3.5 type)
Number of active dots (H × V)	200K dots (880 × 228)	123K dots (560 × 220)
Screen aspect ratio	4 : 3	4.3 : 3
Pixel arrangement	RGB delta	RGB delta
Dot pitch (µm)	80 (H) × 231 (V)	129 (H) × 229 (V)
Optical transmittance (%)	8.8	9.5
Contrast ratio	200 : 1	200 : 1
Supply voltage (V)	12	12
Display method	NTSC/PAL	NTSC/PAL
Panel dimensions (W × H × t (mm))	78.8 × 63.3 × 2.2	85.0 × 63.3 × 2.2
Power consumption (mW)	60	50
Number of colors	Analog full color	Analog full color