

Line imager epc901

FEATURES

- ✓ Very high sensitivity due to 100% fill factor
- ✓ Ultra high-speed image acquisition
- ✓ 4 analog frame stores on chip
- ✓ Single or multi-frame acquisition
- ✓ Correlated-double sampling (CDS) per pixel
- ✓ Single-ended or differential analog video output
- ✓ 2 temperature sensors on chip
- ✓ Slim-line CSP32 housing, 8.0 x 1.3 x 0.3 mm

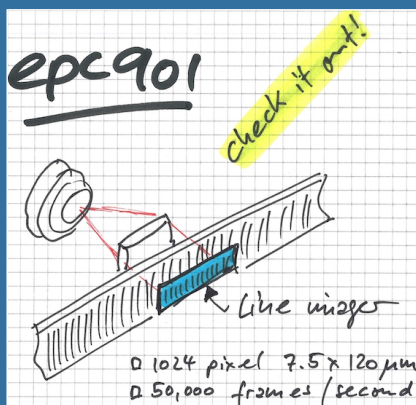
FUNCTIONAL DESCRIPTION

The epc901 is a small footprint and very thin line imager. It is designed to fulfill the need of very low optical cross-talk in encoder sensors because the encoder code wheel or ruler can be placed as close to 50µm above the optical sensitive part of the imager. This is possible due to its backside illuminated imaging technology (BSI). Standard frontside imagers need a distance of 10 times more and thus have to deal with a high cross-talk (refer to the backside of this leaflet).

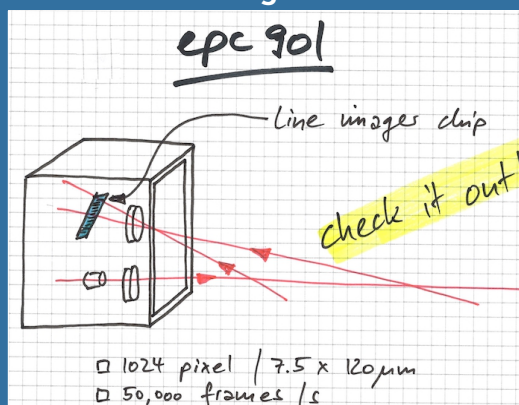
Although, it is a high-performance CCD line sensor capable of storing a total of 4 frames in the frame store elements for ultra high-speed image acquisition of up to 500k lines per second. In the continuous mode, even 50k lines per second are possible.

APPLICATIONS

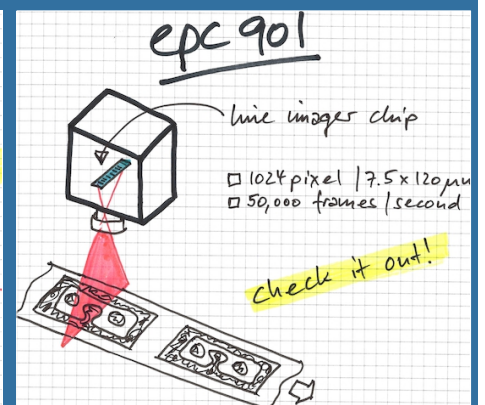
Linear Encoder

















Triangulation



Line Scan

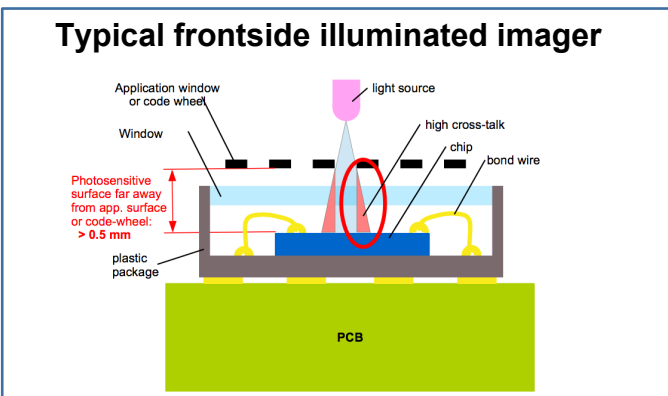


SPECIFICATIONS

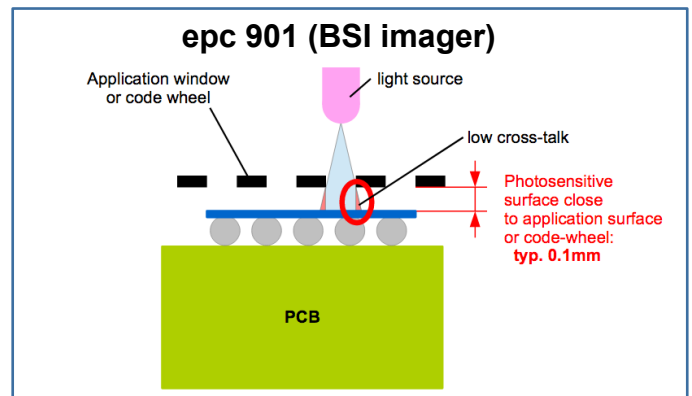
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Pixel-field
 1024 x 1 pixel, CCD
 backside illuminated
- 
Full-well capacity
 400 ke-
- 
Data Interface
 Single-ended or differential
 analog video output
- 
Pixel-pitch
 7.5 x 120 μm
- 
Conversion gain
 5 $\mu\text{V}/\text{e}^-$
- 
Control Interface
 5 pin HW interface or I2C
- 
Photosensitive area
 7.68 x 0.12 mm
- 
SNR
 up to 72 dB
- 
Nom. Operation voltage
 3.3 V
- 
Optical fill factor
 100%
- 
Quantum efficiency
 > 90% @ 630 nm
- 
Power Consumption
 typ. 165 mW
 power save mode 4.5 mW
- 
Spectral range
 350 ... 1'120 nm
- 
Frame rate
 up to 50 kfps continuous
 up to 500 kfps burst

Slim-line design advantages epc901

High optical cross-talk



Low optical cross-talk



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