VGA ultra high speed and sensitivity CMOS image sensor

BT033A

Description

BT033A is a VGA (Type 1/2) ultra high speed and high sensitivity CMOS image sensor. It operates up to 7200fps with VGA resolution and higher frame rates by using a function of windowing while keeping low noise and very high sensitivity. Brookman Technology’s enhanced global shutter pixel so-called “True Snapshot-PIXEL(TS-PIXEL)” is implemented. It captures every moment without motion blur. With these further high performances, BT033A makes it possible to take an ultra high speed video under normal fluorescent tube lighting.

Ultra high speed and sensitivity

- 7200fps @VGA color image

Features

- VGA resolution: 644(H) x 484(V)
- Optical format: Type 1/2
- Active pixel area: 7.17mm(H)x5.73mm(V), 9.18mm(D)
- TS-PIXEL Global shutter
- 7200fps with VGA resolution
- Windowing (Vertical only) with enhanced frame rate
- Capable of slave mode with external horizontal sync. and vertical sync. signals
- On-chip 12bit high speed ADC
- Selectable analog gain
- Low power consumption (<1.5W)
- Available in color (Bayer RGB) and monochrome sensor

Low noise and anti motion blur

True Snapshot-PIXEL

Applications

- High speed camera
- Machine vision
- Motion analysis
- Industrial imaging
- Crash test analysis
- Scientific experiment

For all product and custom CIS design inquiries, feel free to contact us below.

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Specifications

- **Optical format**: 1/2 Type
- **Pixel size**: 11.2μm x 11.2μm
- **Total pixels**: 688(H) x 520(V)
- **Effective pixels**: 644(H) x 484(V)
- **Pixel type**: Pinned 4Trs.
- **Shutter**: True-CDS global shutter
- **Windowing[ROI]**: Available (V-direction only)
- **ADC resolution**: 12-bit on-chip
- **Frame rate**: 7200fps@VGA
- **Output interface**: 48-lane LVDS
- **Data rate**: Max. 680Mbps@lane
- **Full well capacity**: 14ke-
- **Dynamic range**: >63dB
- **SNR[Max.]**: 40dB
- **Dark noise**: 7.6e-
- **Sensitivity**: 38V/lux·s (Mono)
- **20V/lux·s (Green)**
- **PRNU**: 1%@Half Saturation
- **Q.E.**: 74%@mono (λ = 550nm)
- **Analog gain**: 1x, 2x, and 4x
- **Power supply**: 1.8V and 3.3V
- **Power consumption**: <1.5W
- **Package type**: 241-pin µPGA
- **Chroma**: Monochrome and Bayer RGB
- **Input clock rate**: 34MHz

Q.E. Curve

- Quantum Efficiency [%]
  - Wavelength [nm]
  - 350 to 1050

Block Diagram

Sensor Package

Unit [mm]

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