



SCI640A 15 DI

General Description

The SCI640A_15_DI is a Readout Integrated Circuit (ROIC) for detector arrays with a resolution of 640x512 pixels and a pitch of 15µm. It provides up to 120Hz frame rate at a power dissipation of 150mW. The pixel is based on a Direct Injection (DI) circuit and provides a maximum full well capacitance (FWC) larger than 10Me⁻ for readout of P on N detector arrays. Exposure time is controlled via on-chip timing signals supporting snapshot or rolling line shutter operation. Many different operating conditions can be programmed via serial interface to optimize the device performance for a particular sensor or camera.

Features

An overview of the SCI640A_15_DI specifications is given in Table 1. The listed parameters are representative for an average device. Individual ROIC performance may slightly deviate.

| Parameter | Value |
|---------------------------|---|
| Array Size | 640x512 |
| Pixel pitch | 15 µm |
| Detector polarity | P or N |
| Die Size | 12 x 12 mm ² |
| Exposure time control | Snapshot shutter or rolling line (programmable) |
| Minimum integration time | > 10µsec |
| Charge capacity | programmable |
| | minimum 100 k e ⁻ (high gain) |
| | maximum 10,000 k e ⁻ (low gain) |
| Readout Noise | |
| | High gain mode 40 e ⁻ (high gain) |
| | Low gain mode 140 e ⁻ (low gain) |
| Integration time range | 10 µs – 30 ms |
| Frame rate | 120 Hz |
| Output | Analog |
| Output format | Raw, un-encoded bit stream |
| Output data rate | 10Mpixel/sec |
| Number of Output channels | 1,2 or 4 (programmable) |
| Master Clock | 5 MHz |
| Power Supply | 3.3V/1.8V |
| Logic I/O levels | 0.0V/3.3V |
| Power Dissipation | 150mW |

Table 1: SCI640A_15_DI datasheet

Disclaimer

All specifications are preliminary and subject to modification without notice.