

# Image sensor heads for narrow-width scanners

## IA2004-CE40A

The IA□□04-ME/CE series sensors, compatible with A6 size media, feature a dual-arch structure, allowing straight pass reading (both-directions). In addition, they are compact, measuring only 119.5mm in length.

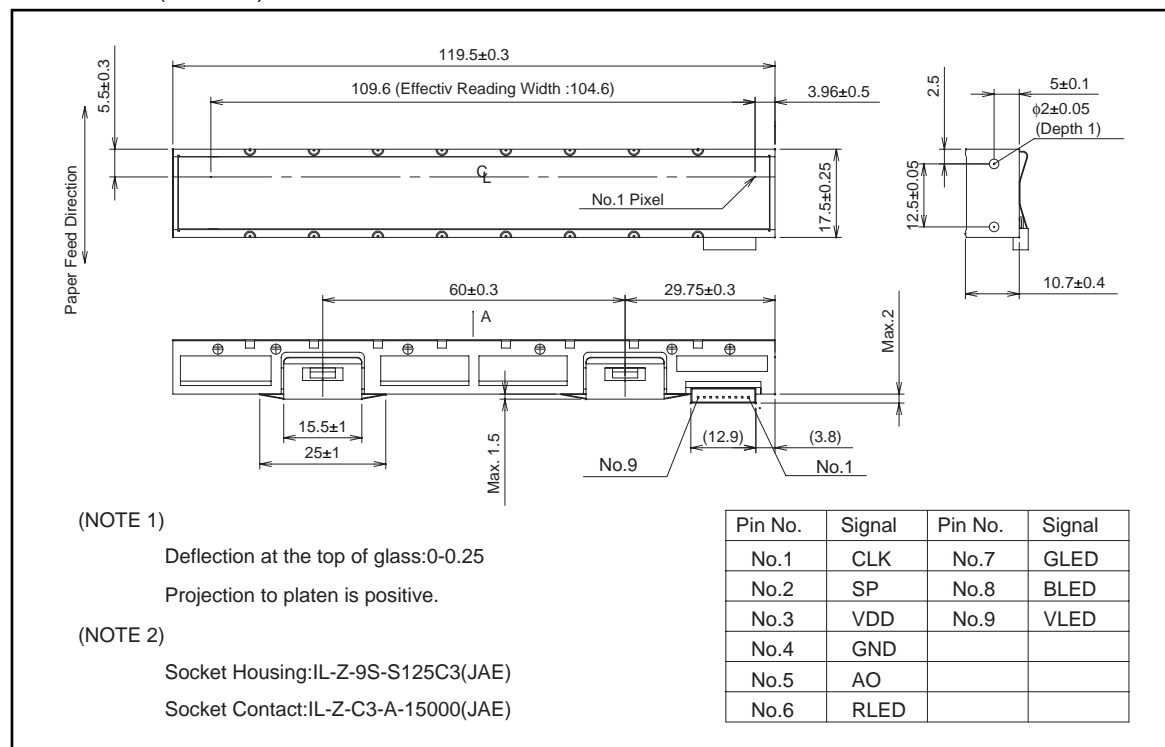
### ●Applications

Check readers, card scanners, and a variety of other image input devices.

### ●Features

- 1) Signal amplifier integrated into each sensor IC in order to eliminate external noise ; compatible with 3.3V interface.
- 2) LED light source mounted on the same substrate as the sensor chip itself, resulting in a more compact, lightweight package.
- 3) Proprietary prism maintains a uniform output signal.
- 4) Ceramic substrate used, ensuring excellent dimensional and thermal stability.

### ●Dimensions (Unit : mm)



## Contact image sensor heads

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### ●Characteristics

| Parameter                | Symbol          | Typ.    | Unit      |
|--------------------------|-----------------|---------|-----------|
| Effective scanning width | –               | 104.6   | mm        |
| Primary scan dot density | –               | 200     | dpi       |
| Total dot number         | –               | 864     | dots      |
| Power supply voltage     | V <sub>DD</sub> | 5       | V         |
| Scanning speed           | SLT             | 0.125×3 | ms / line |
| Clock frequency          | CLK             | 8       | MHz       |
| Maximum dynamic range    | VRMax.          | 0.5     | V         |
| Minimum dynamic range    | VRMin.          | 0.25    | V         |
| Dark output              | V <sub>od</sub> | 1.2±0.4 | V         |
| Operating temperature    | –               | 5 to 45 | °C        |

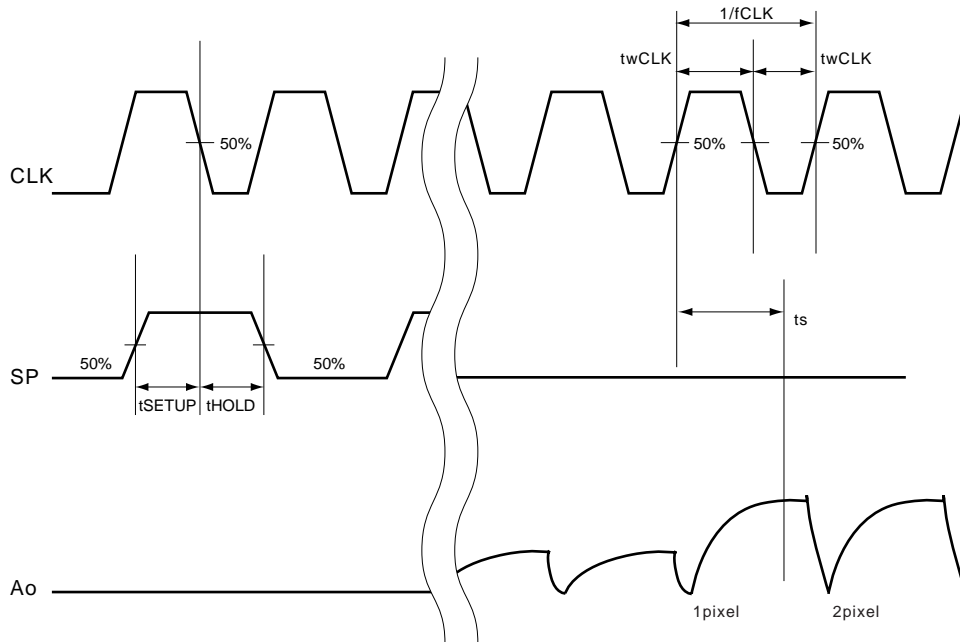
### ●Pin assignments

| No. | Circuit         | I / O | Functions        |
|-----|-----------------|-------|------------------|
| 1   | CLK             | I     | Clock            |
| 2   | SP              | I     | Start Pulse      |
| 3   | V <sub>DD</sub> | I     | Power Supply     |
| 4   | GND             | I     | Ground           |
| 5   | Ao              | O     | Analog Output    |
| 6   | RLED            | I     | LED ground       |
| 7   | GLED            | I     | LED ground       |
| 8   | BLED            | I     | LED ground       |
| 9   | VLED            | I     | LED power supply |

Contact image sensor heads

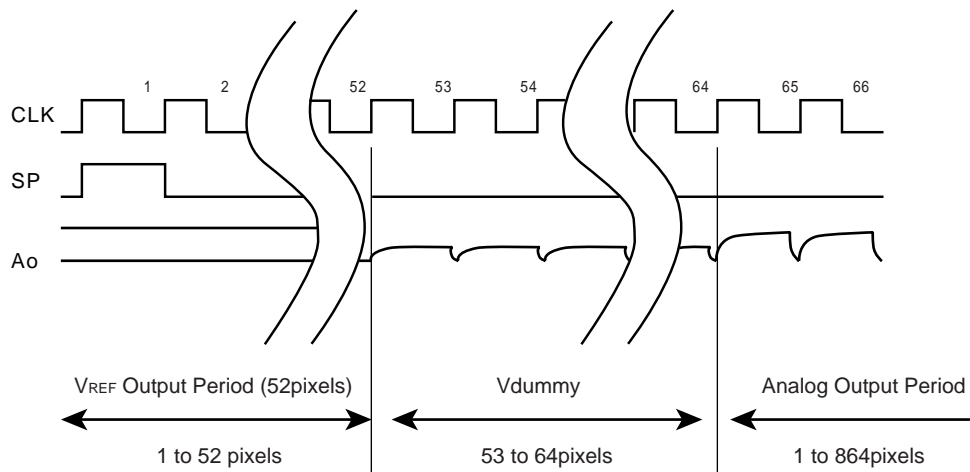
●Timing chart

(a) CLK Timing Chart



(b) Data Output Timing Chart

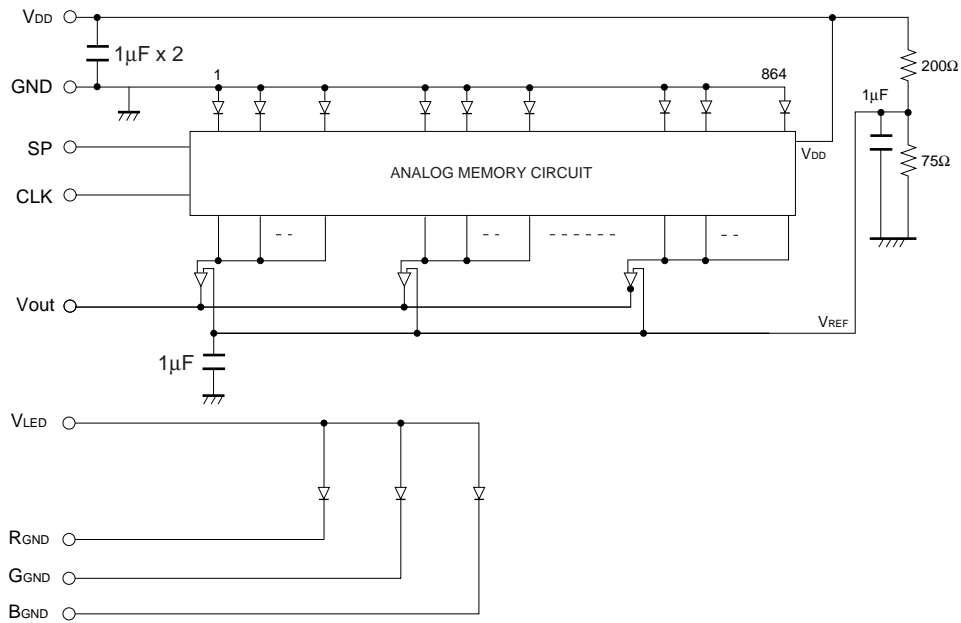
After turning on the SP pulse, the analog output shape starts from the setting up point of 65 clock pulse.



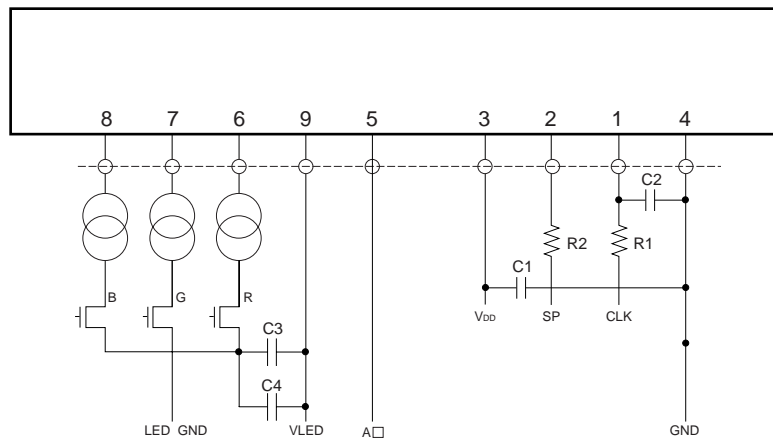
Note) Output blank part cannot be used as the analog output standard level.

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●Equivalent circuit



●Peripheral circuit



\* R1=R2=100Ω  
 C1=47µF, C2=100pF  
 C3=100µF, C4=0.1µF

\* Please adjust the value of resistance to fit your interface circuit.

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