

# Contact Image Sensor Heads for narrow-width scanners

## LSH2004-AA20A

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.

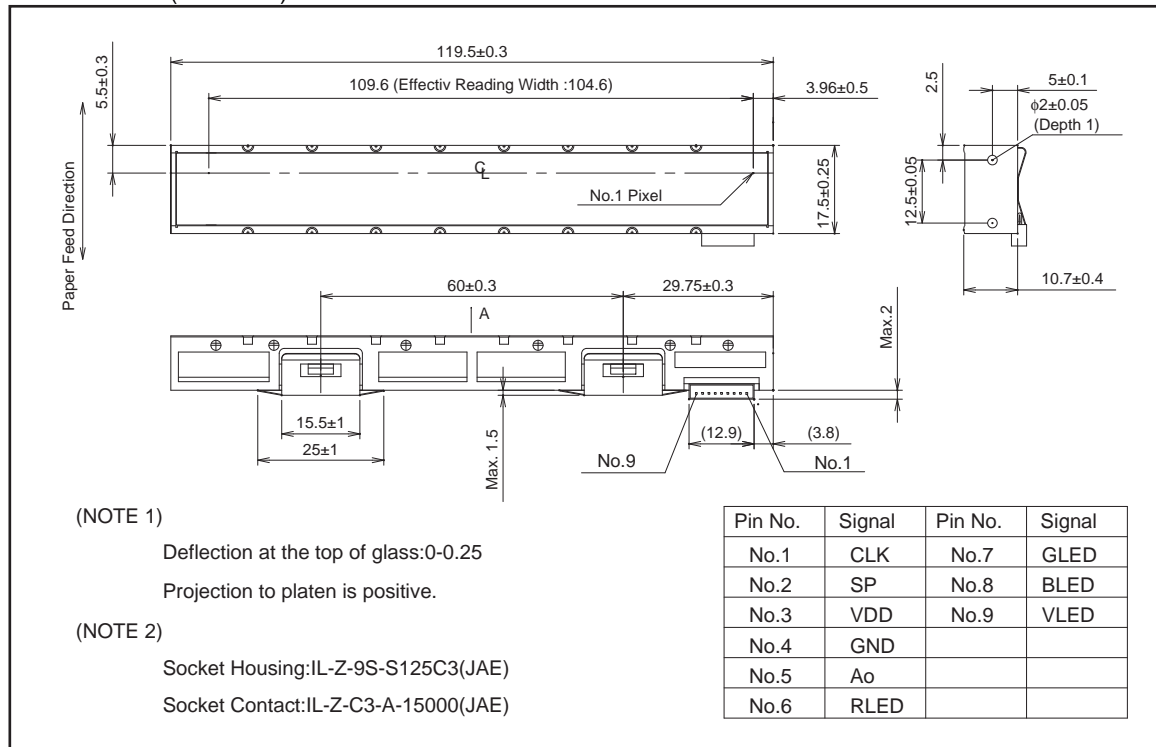
### ●Applications

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)



## ●Characteristics

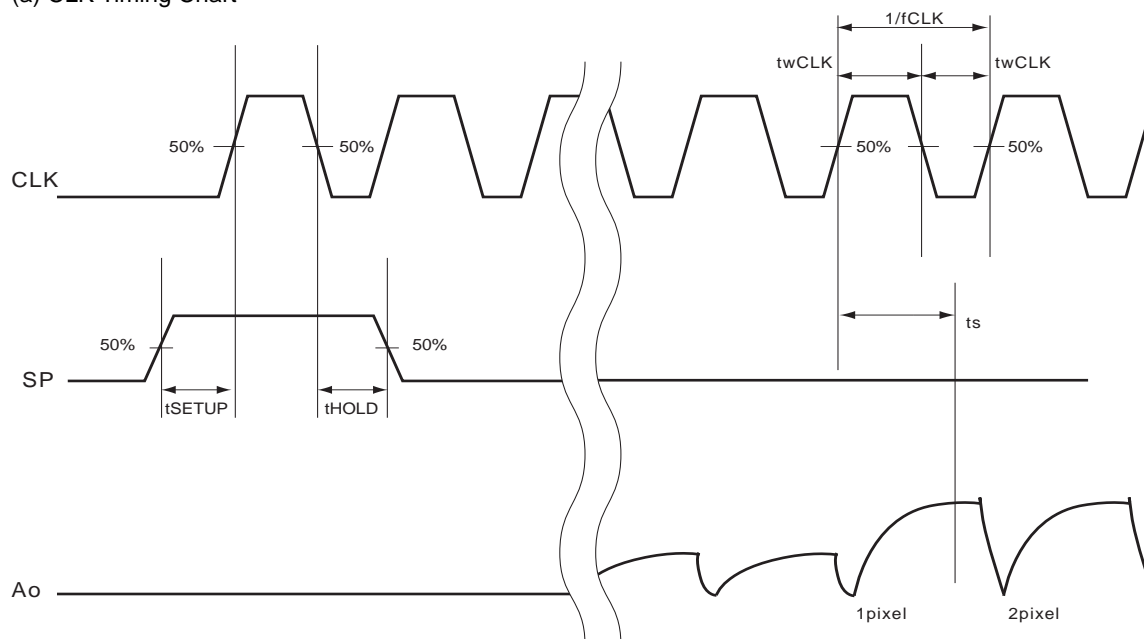
Parameter	Symbol	Typ.	Unit
Effective scanning width	–	104.6	mm
Primary scan dot density	–	200	dpi
Total dot number	–	864	dots
Power supply voltage	V <sub>DD</sub>	3.3	V
Scanning speed	SLT	0.125×3	ms / line
Clock frequency	CLK	8	MHz
Maximum dynamic range	VRMax.	0.5	V
Minimum dynamic range	VRMin.	0.25	V
Dark output	V <sub>od</sub>	0.8±0.2	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

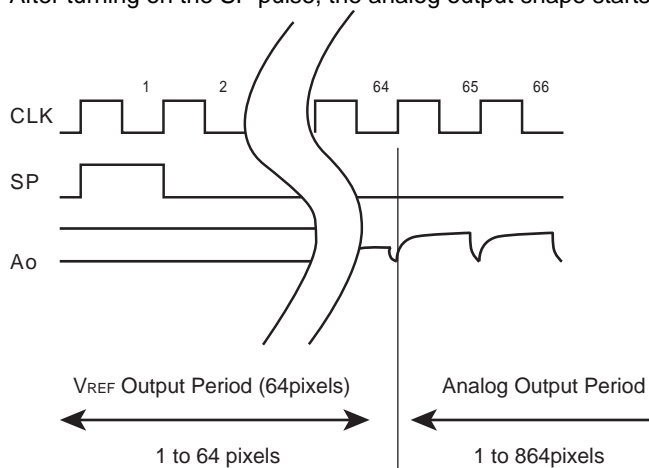
# ●Timing chart

## (a) CLK Timing Chart



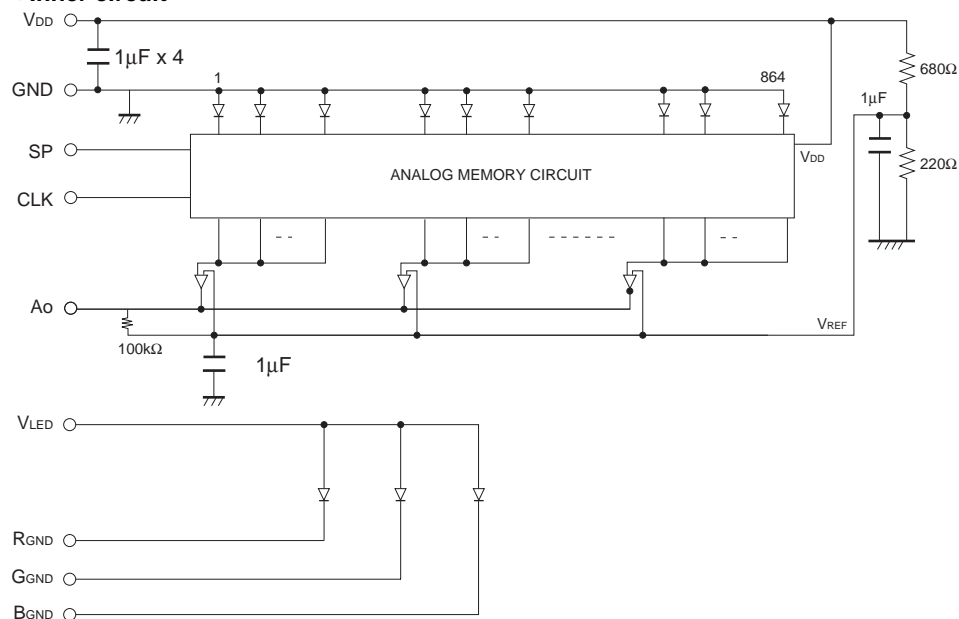
## (b) Data Output Timing Chart

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

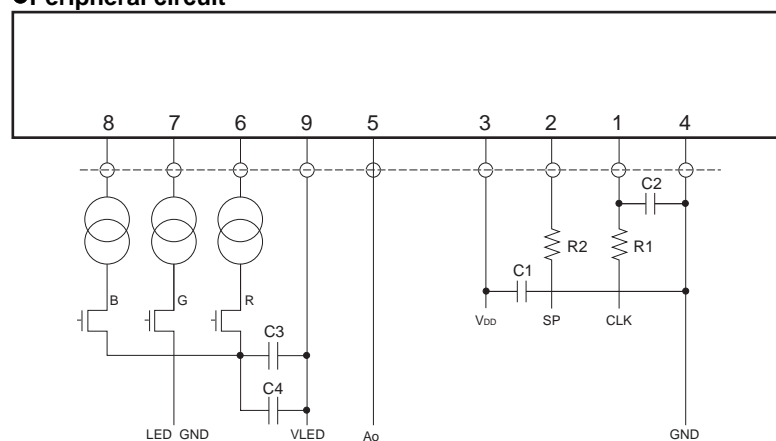


Note) Output blank part cannot be used as the analog output standard level.

- Inner circuit



- Peripheral circuit



\*  $R_1=R_2=100\Omega$   
 $C_1=47\mu F$ ,  $C_2=100pF$   
 $C_3=100\mu F$ ,  $C_4=0.1\mu F$

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

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