# Color Multi Line Sensor Heads for High-speed Scanner

## LSH1208-BA50A

Multi Line Sensor Head with 3 times higher scanning speed due to 3ch outputs.
Newly developed resolution change-over IC is employed which has improved noise resistance.

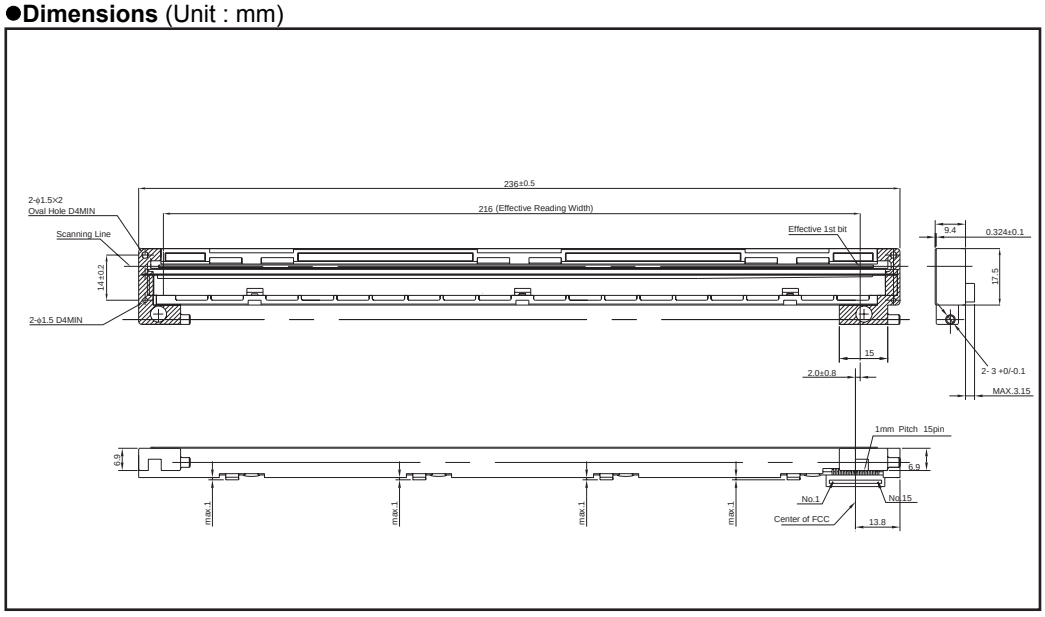
### ●Applications

High speed reading equipment (i.e. document scanners, wide format scanners).

### ●Features

1) High speed reading capability due to 3 analog output.
2) Signal amplifier is built into the sensor IC in order to increase immunity to external noise.
3) ROHM's newly developed sensor IC reduces failures due to ESD (based on the IEC61000-4-2 standard).
4) With the proprietary prism, the output signal is maintained uniformly.
5) The ceramic substrate is used for excellent dimensional accuracy and thermal stability.

### ●Dimensions (Unit : mm)




### ●Characteristics

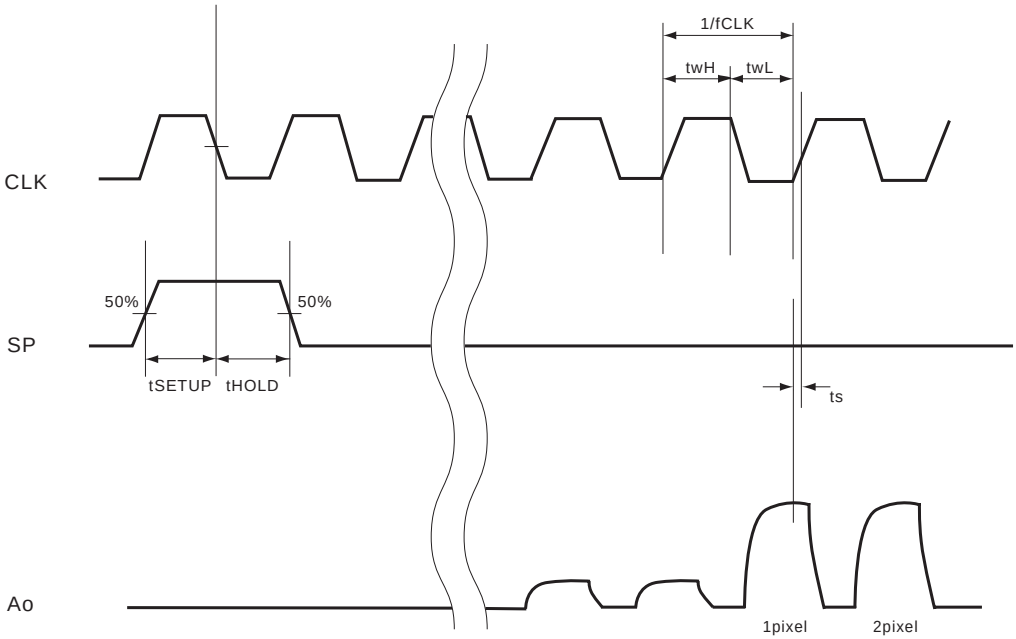
| Parameter | Symbol | Typ. | Unit |
|---|---|---|---|
| Effective scanning width | – | 216 | mm |
| Primary scan dot density | – | 1200 | dpi |
| Total dot number | – | 10368 | dots |
| Power supply voltage | $V_{DD}$ | 3.3 | V |
| Reference voltage | $V_{REF}$ | 0.8 | V |
| Scanning speed | SLT | 1.0 x 3 | ms / line |
| Clock frequency | CLK | 4 | MHz |
| Maximum dynamic range | VRMax | 0.5 | V |
| Minimum dynamic range | VRMin. | 0.25 | V |
| Dark output | Vod | $V_{REF}$± 0.1 | V |
| Operating temperature | – | 5 to 45 | °C |

## ●Pin assignments

| No. | Circuit | I / O | Function |
|---|---|---|---|
| 1 | $A_{O3}$ | O | Analog output |
| 2 | GND | I | Ground |
| 3 | $A_{O2}$ | O | Analog output |
| 4 | GND | I | Ground |
| 5 | $A_{O1}$ | O | Analog output |
| 6 | MODE | I | Mode select |
| 7 | GND | I | Ground |
| 8 | $V_{DD}$ | I | Power supply |
| 9 | $V_{REF}$ | I | Reference voltage |
| 10 | SP | I | Start pulse |
| 11 | CLK | I | Clock |
| 12 | V-LED | I | LED power supply |
| 13 | B-GND | I | BLUE LED ground |
| 14 | G-GND | I | GREEN LED ground |
| 15 | R-GND | I | RED LED ground |

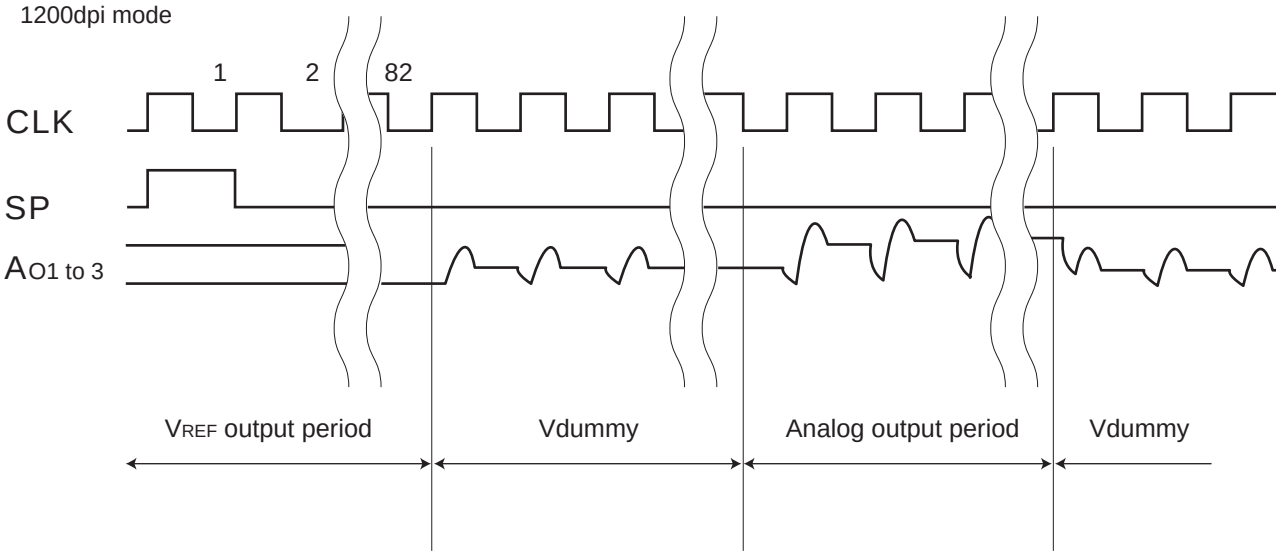
## ●Timing chart

(a) CLK Timing Chart



(b-1) Data Output Timing Chart (1200dpi mode)
After turning on the SP pulse, the analog output starts from the setting up point of 82 clock pulse.

1200dpi mode

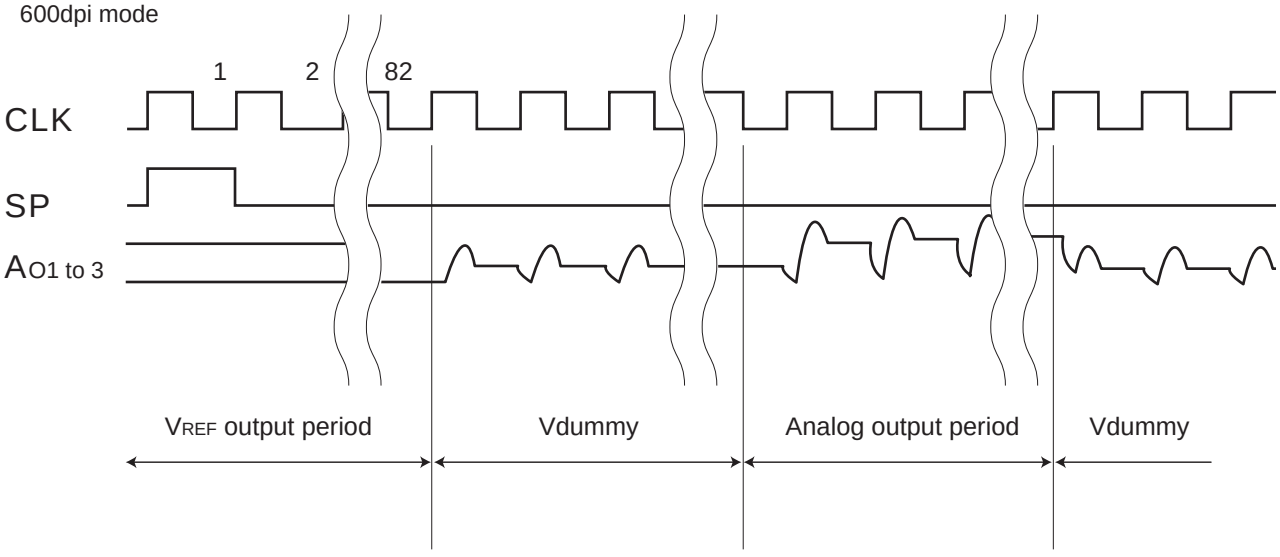



| | | | | |
|---|---|---|---|---|
| AO1 : | 1 to 82clock | 1 to 100pixels | 101 to 3456pixels | – |
| AO2 : | 1 to 82clock | – | 3457 to 6912pixels | – |
| AO3 : | 1 to 82clock | – | 6913 to 10312pixels | 10313 to 10368pixels |

Note)The CLK section area which is over the effective pixel numbers (Output blank part) cannot be used as the analog Output standard level.

(b-2) Data Output Timing Chart (600dpi mode)
After turning on the SP pulse, the analog output starts from the setting up point of 82 clock pulse.

600dpi mode

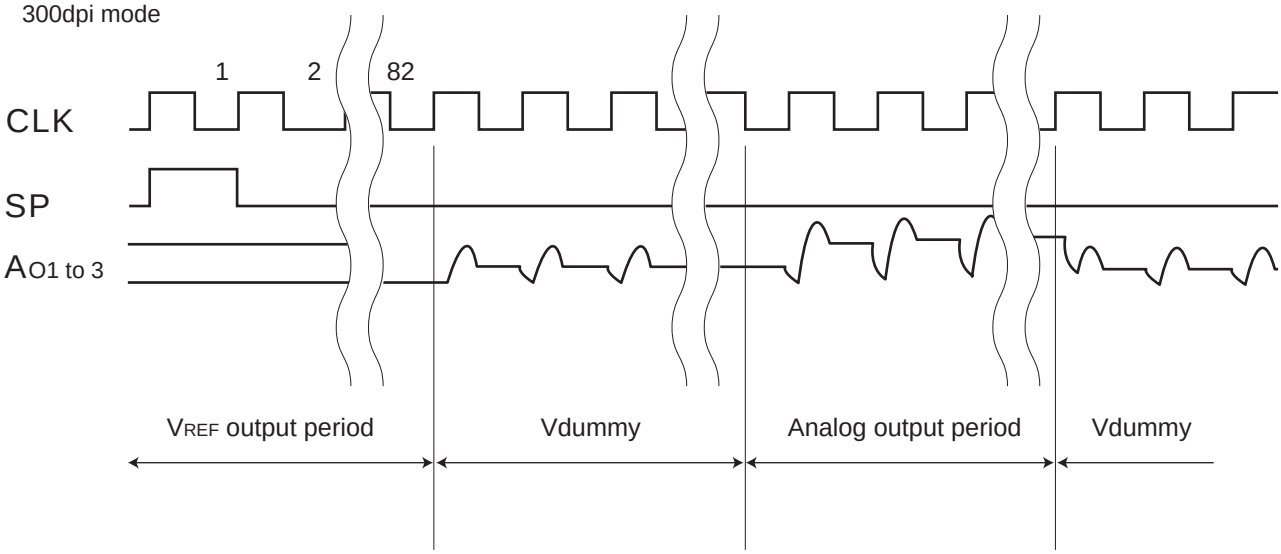



| | | | | |
|---|---|---|---|---|
| AO1 : | 1 to 82clock | 1 to 50pixels | 51 to 1728pixels | – |
| AO2 : | 1 to 82clock | – | 1729 to 3456pixels | – |
| AO3 : | 1 to 82clock | – | 3457 to 5156pixels | 5157 to 5184pixels |

Note)The CLK section area which is over the effective pixel numbers (Output blank part) cannot be used as the analog Output standard level.

(b-3) Data Output Timing Chart (300dpi mode)
After turning on the SP pulse, the analog output starts from the setting up point of 82 clock pulse.

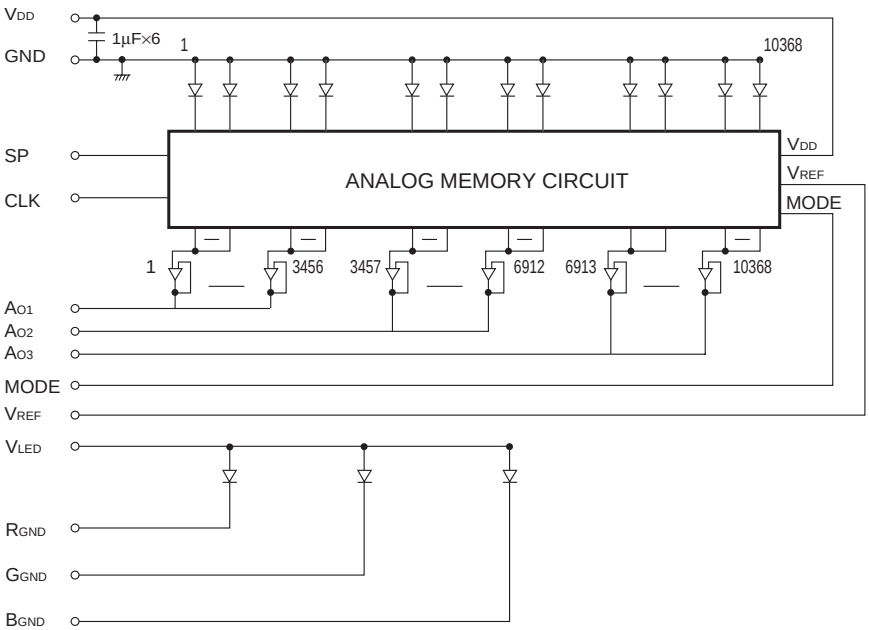
300dpi mode



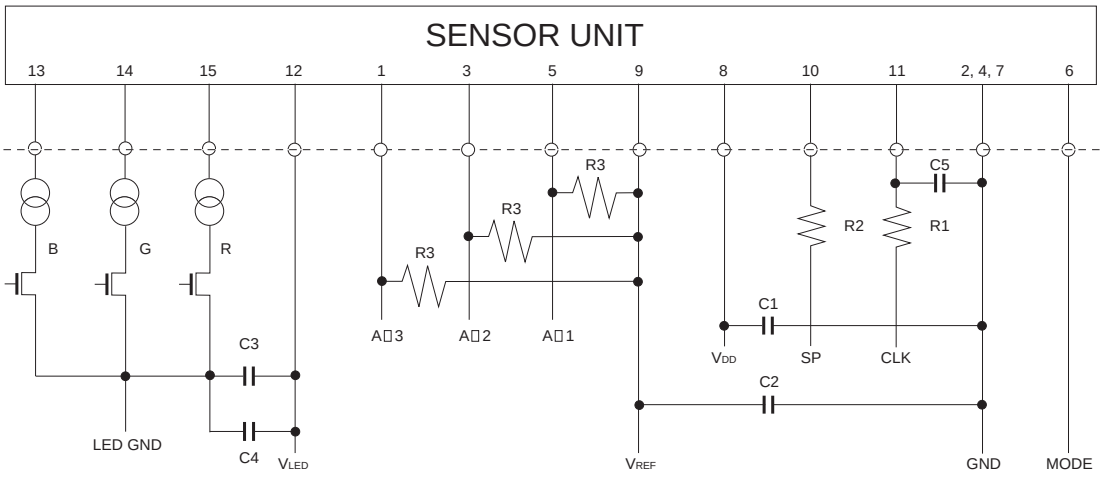

| | | | | |
|---|---|---|---|---|
| AO1 : | 1 to 82clock | 1 to 25pixels | 26 to 864pixels | – |
| AO2 : | 1 to 82clock | – | 865 to 1728pixels | – |
| AO3 : | 1 to 82clock | – | 1729 to 2578pixels | 2579 to 2592pixels |

Note)The CLK section area which is over the effective pixel numbers (Output blank part) cannot be used as the analog Output standard level.

**●Circuit diagram**



●**Peripheral circuit**




R1=R2=100Ω, R3=100KΩ
C1=C2=47μF
C3=100μF, C4=0.1μF, C5=100pF

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