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)
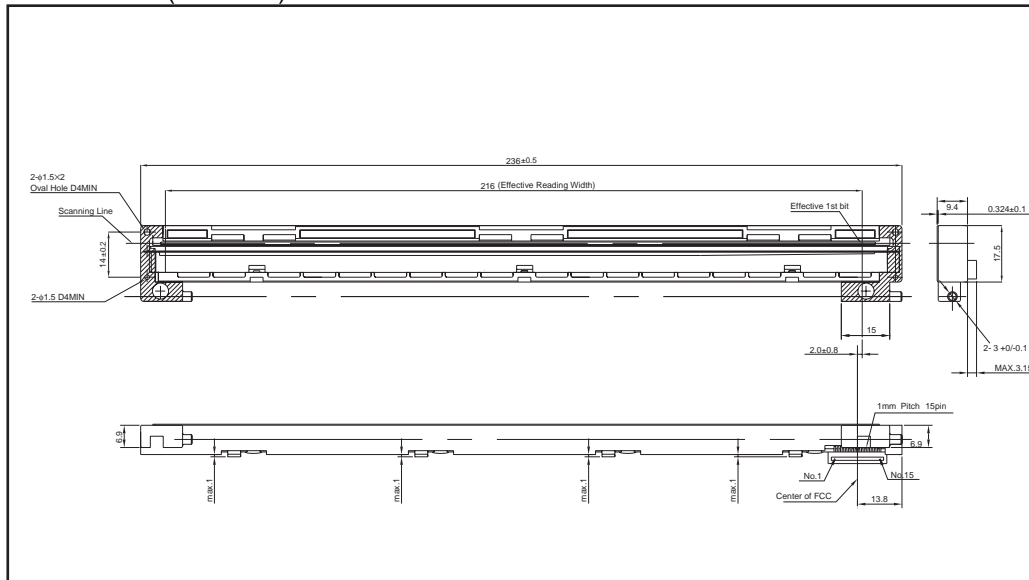
●**Characteristics**

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	$V_{REF} \pm 0.1$	V
Operating temperature	–	5 to 45	°C

2009.11 - Rev.A

●**Pin assignments**

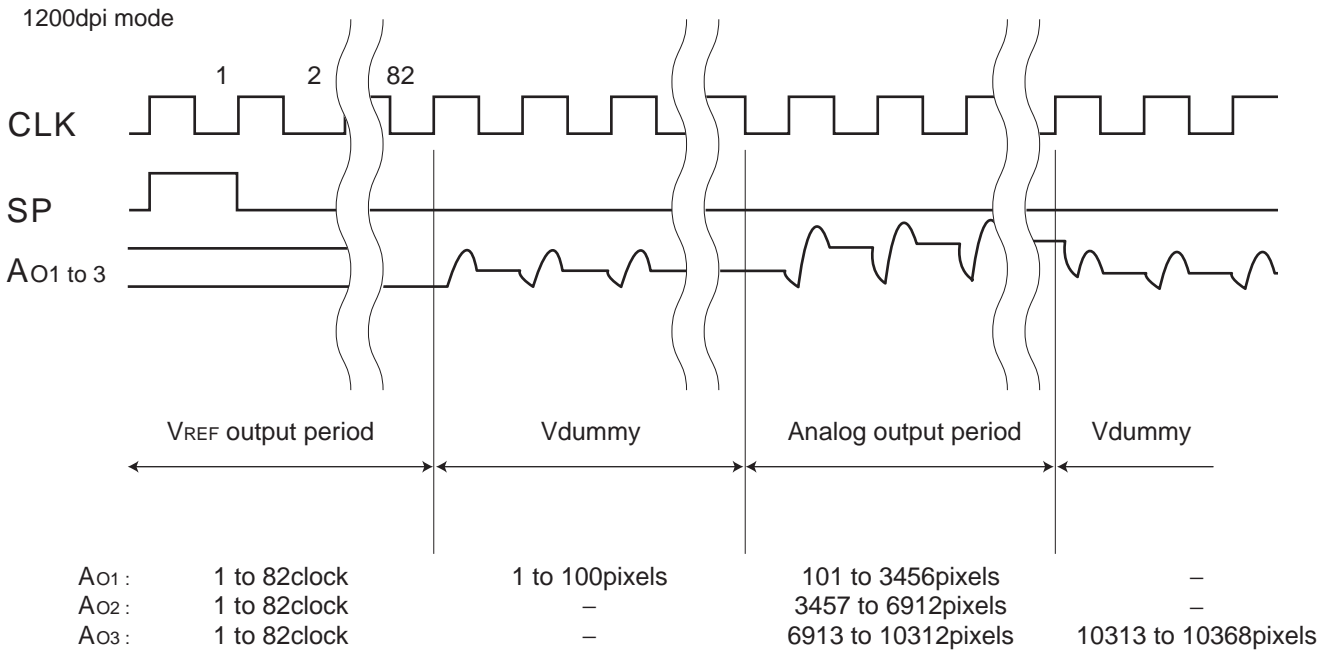| No.	Circuit	I / O	Function
1	A_{O3}	O	Analog output
2	GND	I	Ground
3	A_{O2}	O	Analog output
4	GND	I	Ground
5	A_{O1}	O	Analog output
6	MODE	I	Mode select
7	GND	I	Ground
8	V_{DD}	I	Power supply
9	V_{REF}	I	Reference voltage
10	SP	I	Start pulse
11	CLK	I	Clock
12	V-LED	I	LED power supply
13	B-GND	I	BLUE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

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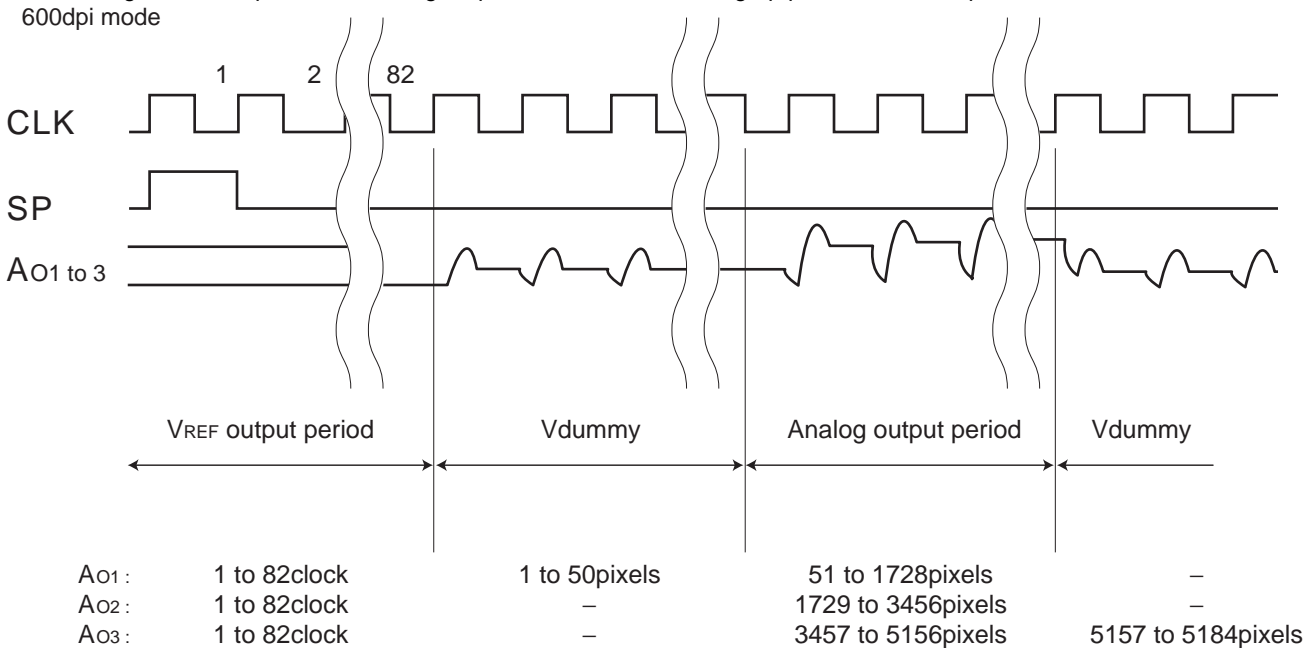(a) CLK Timing Chart
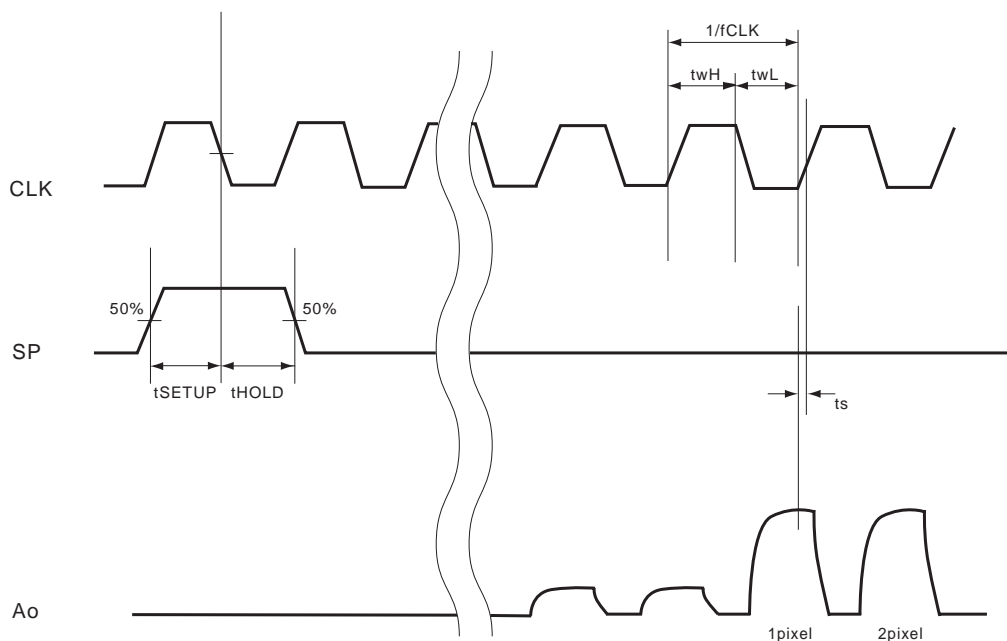
(b-1) Data Output Timing Chart (1200dpi mode)
After turning on the SP pulse, the analog output starts from the setting up point of 82 clock pulse.

1200dpi mode

	VREF output period	Vdummy	Analog output period	Vdummy
A_{O1} :	1 to 82clock	1 to 100pixels	101 to 3456pixels	−
A_{O2} :	1 to 82clock	−	3457 to 6912pixels	−
A_{O3} :	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

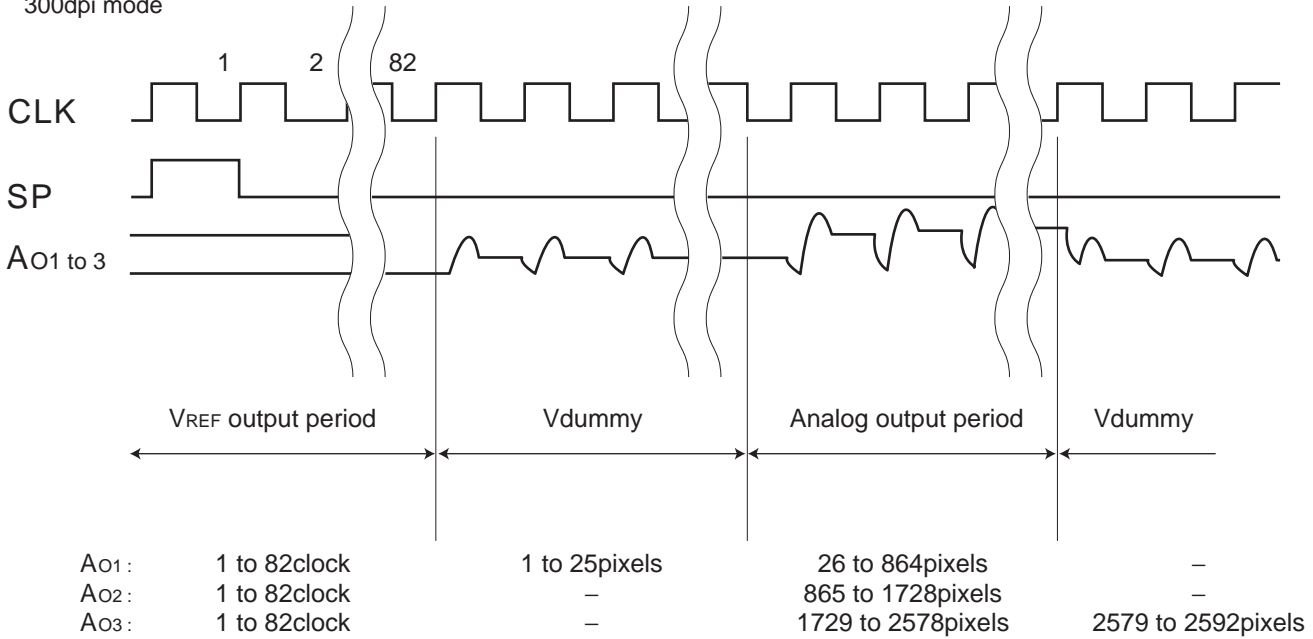|	VREF output period	Vdummy	Analog output period	Vdummy
A_{O1} :	1 to 82clock	1 to 50pixels	51 to 1728pixels	−
A_{O2} :	1 to 82clock	−	1729 to 3456pixels	−
A_{O3} :	1 to 82clock	−	3457 to 5156pixels	5157 to 5184pixels

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

	VREF output period	Vdummy	Analog output period	Vdummy
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
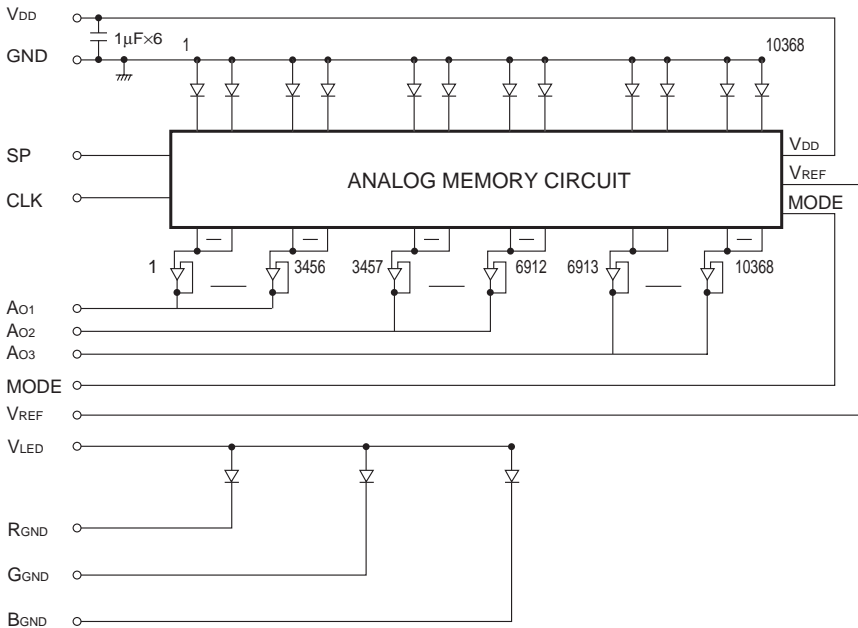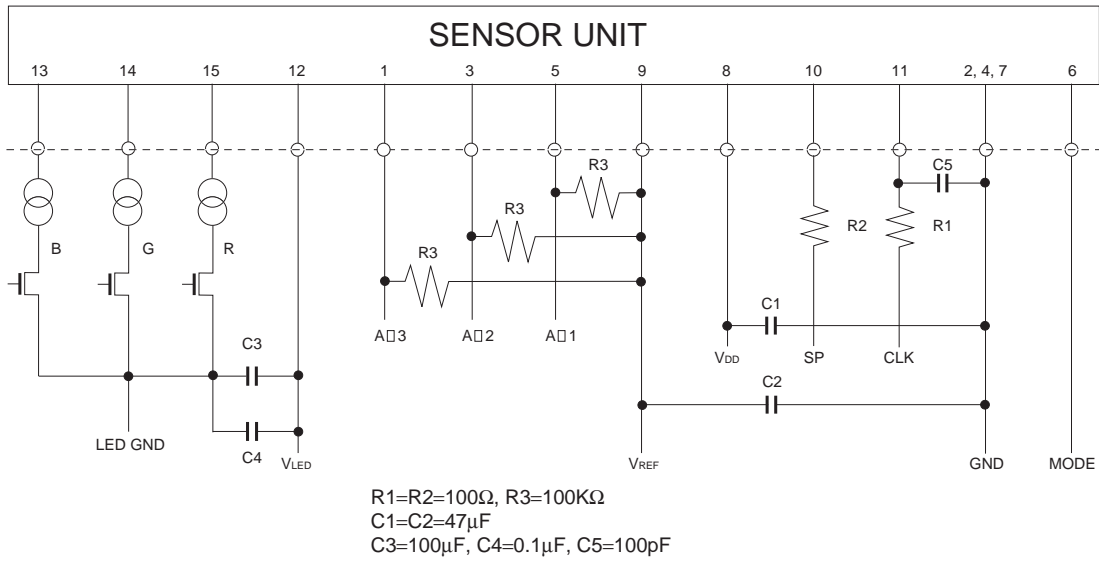
Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

http://www.rohm.com/contact/

R0039A