

	文件名稱： SNM9S102C3010A (For Hand-writing Application)	文件編號 Doc No.	機密等級 Security. C
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松翰科技股份有限公司
SONiX TECHNOLOGY CO., LTD

OLD Sensor Module **SNM9S102C3010A** (For Hand-writing Application)

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Document History Record

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PRODUCT SPECIFICATION

SNM9S102C3010A OID SENSOR MODULE

1. General Description

SONIX design a new sensor module for hand writing application.

The SNM9S102C3010A Optical ID Image Sensor Module integrated the SONIX SN9S102CE CMOS digital image sensor and high efficiency IR-LED. The interface of module is 8 pins with FPCB.

The OID Image Module provides a low cost solution for handwriting application.

2. Product Spec. Summary

SONIX SN9S102CE CMOS digital image sensor, it is a highly integrated CMOS active-pixel image sensor:

- Voltage operation range of sensor IC: 3.0 ~3.6V
- Low power dissipation: 12mA (typ).
- Standby current: 50uA (typ)
- Maximum master Clock input: 8MHz
- Minimize sensor module interface in 8 pins
- Programmable exposure/ gain control through serial bus
- Data output: 2-bit nibble format
- A/D resolution: 8-bit
- Build in one IR LED

3. DC Electrical Characteristics

a. Absolute maximum ratings $T_a=25^{\circ}\text{C}$, R.H = 65%

Symbol	Parameter	Rating	Units
Vcc	Power Supply	-0.3 to 3.6	V
Vin	Input Voltage	-0.3 to Vcc+0.3	V
Vout	Output Voltage	-0.3 to Vcc+0.3	V
Tstg	Storage Temperature	-25 to +70	$^{\circ}\text{C}$

b. Recommended operating conditions

Symbol	Parameter	Min	Typ	Max	Units
Vcc	Power Supply	3.0	3.3	3.6	V
LED PWR	IREC supply voltage	3.1		5	V
Vin	Input voltage	0		Vcc	V
Topr	Operating Temperature	0		50	$^{\circ}\text{C}$

c. DC electrical characteristics

(Under Recommended Operating Conditions and $V_{cc}=3.0 \sim 3.6\text{V}$, $T_j=0$ to $+50^{\circ}\text{C}$)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Vil	Input low voltage	LVTTL		$0.3 \cdot V_{cc}$		V
Vih	Input high voltage	LVTTL		$0.7 \cdot V_{cc}$		V
Iil	Input low current	no pull-up or pull-down		1		μA
Iih	Input high current	no pull-up or pull-down		1		μA
Ioz	Tri-state leakage current			1		μA
Vol	Output Low voltage	*			0.4	V
Voh	Output high voltage	*	2			V
Cin	Input capacitance			10		pF
Cout	Output capacitance			10		pF
Cbid	Bi-directional buffer Capacitance			10		pF

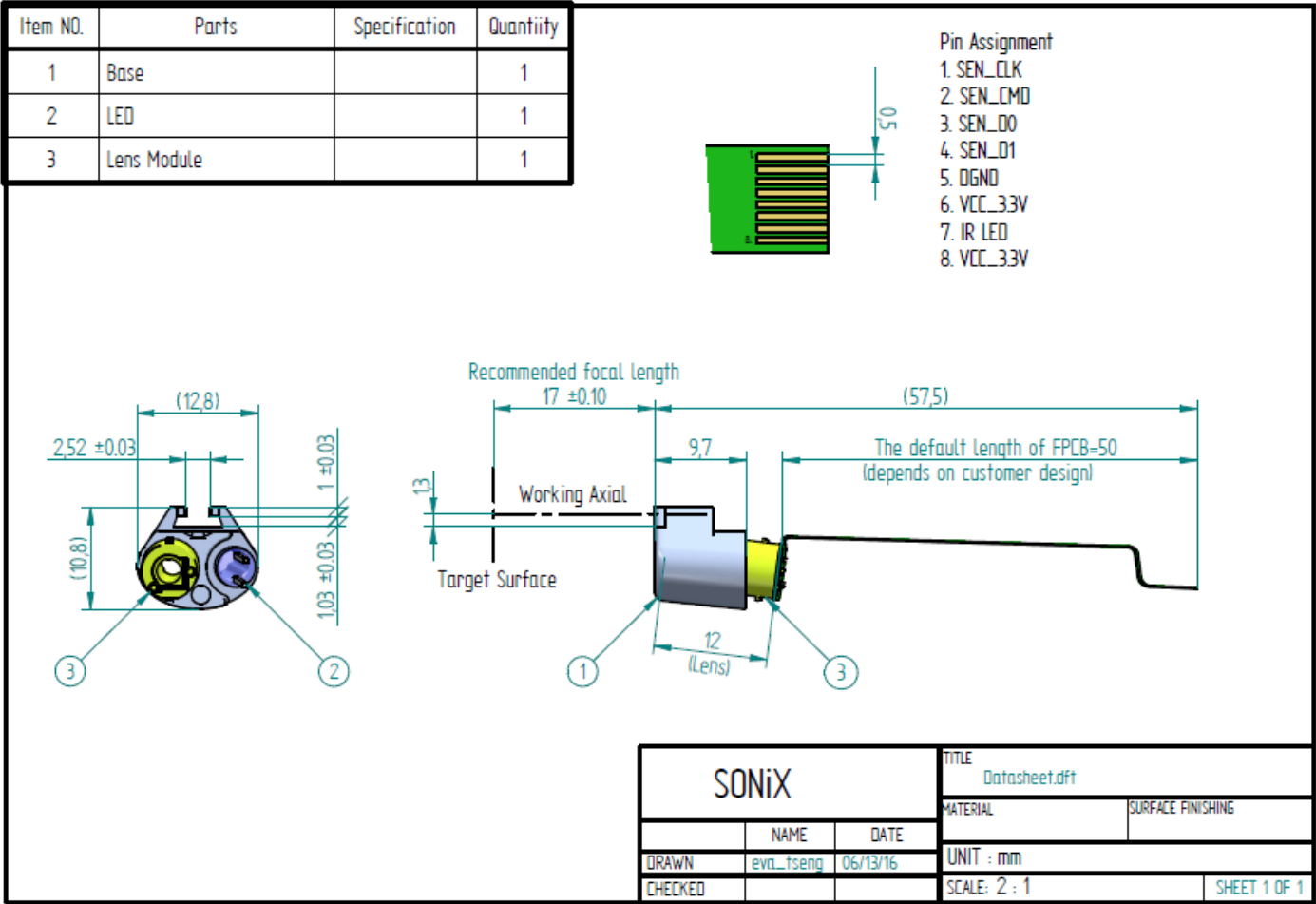
- : Maximum output current 4mA I/O pin .

4. Module Pin Assignment

PIN No.	NAME	TYPE	Description
1	SEN_CLK	INPUT	Sensor's Clock pin, connected to SONiX OID Decoder.
2	SEN_CMD	I/O	Sensor's command interface, connected to SONiX OID Decoder.
3	SEN_D0	OUTPUT	Sensor's DATA 0 interface, connected to SONiX OID Decoder.
4	SEN_D1	OUTPUT	Sensor's DATA 1 interface, connected to SONiX OID Decoder.
5	GND	GND	Ground pin.
6	VCC_33V	PWR	Standard operating voltage 3.3V
7	IR_LED	LED ON/OFF	This is the IR LED enable pin, connected to SONiX OID Decoder.
8	VCC_33V	PWR	Supply to IRLED power voltage 3.3V

5. Module Dimension Information.

Mechanical Diagram:



Note: Default length of FPCB is 50mm and can accept customized length.

6. Operating condition (Operating Angle and Distance):

A. Mechanical characteristics

Dimension	Minimum	Typical	Maximum	Units
Weight		N.A.		gram
Soldering Heat Shock within 3 seconds		200 ± 5		°C
Dimension (excluding the pin header)		Dig. A		
Housing material		ABS		

B. Working Condition

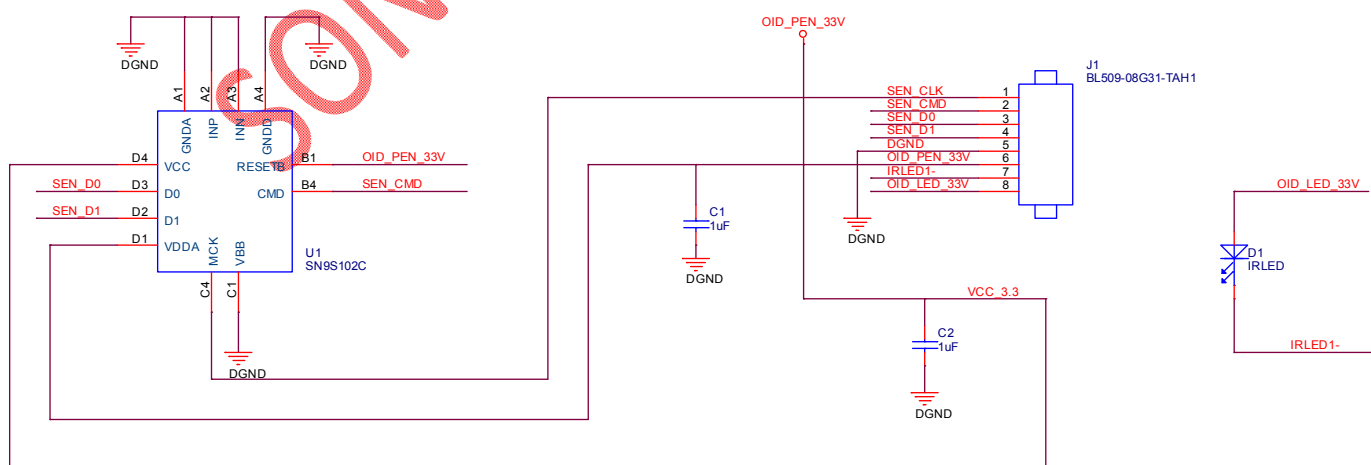
Dimension	Minimum	Typical	Maximum	Units
Light Condition (average spectrum)	-	-	10000	Lux
Tilt Angle (Operating Angle)	40	30	-20	Degree
Detection Distance @0 tilt angle from pen top to paper(Operating Distance)	0	2	-	mm
ESD machine mode	-	200	-	Volt
ESD Human body mode	-	2000	-	Volt

C. Sensing range between tip and paper

Dimension	Minimum	Typical	Maximum	Units
Demo pen working distance@30 °	-	0	2	mm
Demo pen working distance@0 °	-	0	1	mm

Note: SONiX demo pen testing result and reference only

7. Reference Circuit



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8. Reliability Test

TBD.

9. Packing

TBD.

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