OPTO INTERRUPTER

LA204S

SIVAGO® SEMICONDUCTOR

Features

High sensitivity

Cut-Off visible wavelength

Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)

Compliance with EU REACH

This product itself will remain within RoHS compliant version.

Application

Printer

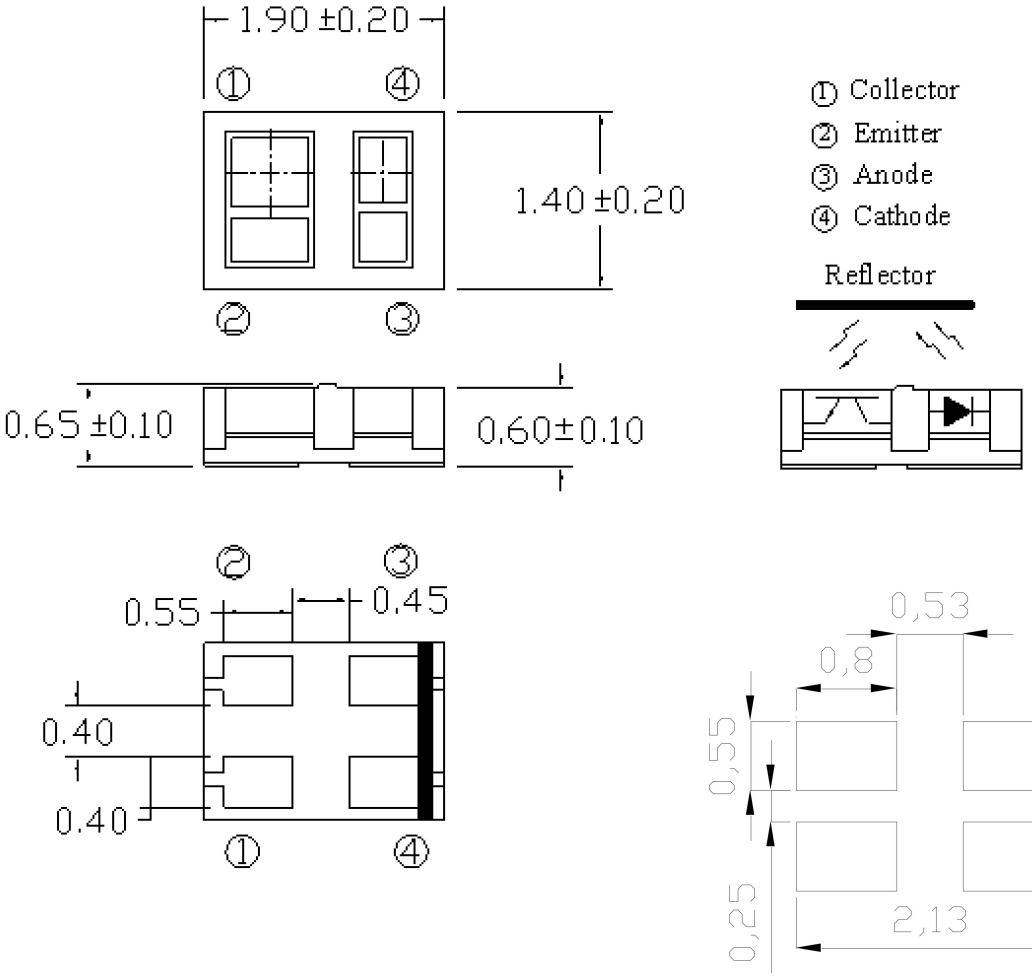
Switch Scanner

Non-contact Switching

Description

The SMD type LA204S consists of an infrared emitting diode and an silicon phototransistor. The phototransistor receives radiation from the IR only. This is the normal situation. But when a reflecting object close to opto interrupter, phototransistor receives the reflecting radiation and the different distance have different light current.

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	mW
	Reverse Voltage	V_R	6	V
	Forward Current	I_F	50	mA
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+100	℃
Lead Soldering Temperature (*1)		Tsol	260	℃

(*1) t ≦5 Sec

Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_F	-	1.25	1.5	V	I_F=4mA
	Reverse Current	I_R	-	-	10	μA	V_R=6V
	Peak Wavelength	λ_P	-	940	-	nm	I_F=20mA
Output	Dark Current	I_{CEO}	-	-	0.1	uA	V_{CE}=10V
Transfer Characteristics	Collect Current	$I_{C(ON)}$	70	-	130	μA	V_{CE}=2V, I_F=4mA
	Operating Dark Current*	I_{CEOD}			1	μA	V_{CE}=2V, I_F=2mA
	Rise Time	T_r	-	15	-	μs	V_{CE}=2V I_C=0.1mA R_L=1000Ω
	Fall Time	T_f	-	15	-	μs	

*Operating dark current may be affected by surrounding situation.

Opto Characteristic Curves

Fig.1 Forward Current vs. Forward Voltage

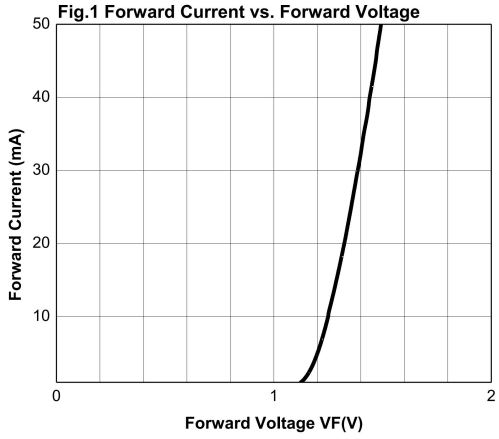


Fig.2 Forward Voltage VS. Temperature

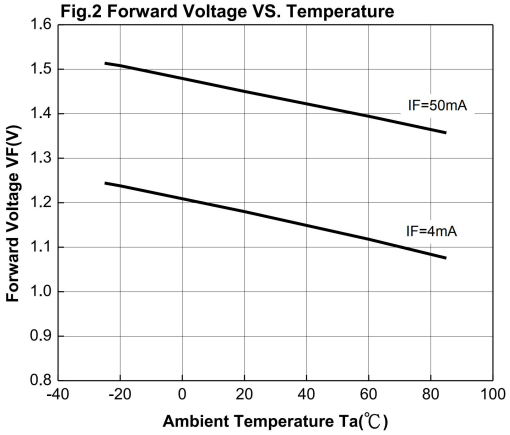


Fig.3 Output Current VS. Forward Current

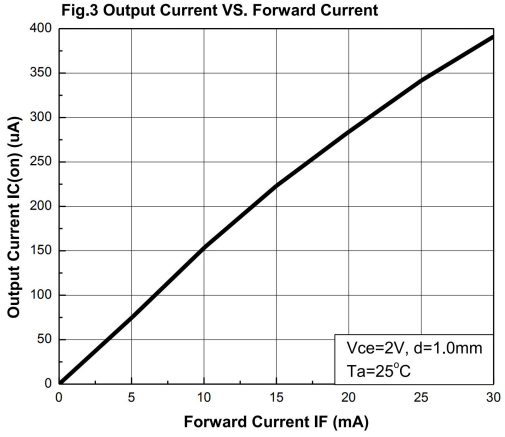


Fig.4 Relative Light Current vs Ambient Temp.

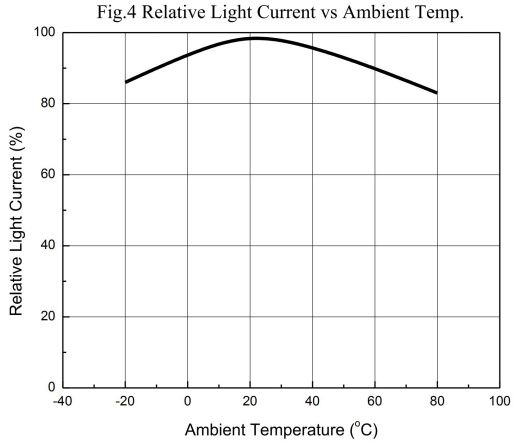


Fig.5 Output Current vs Collector-Emitter Voltage

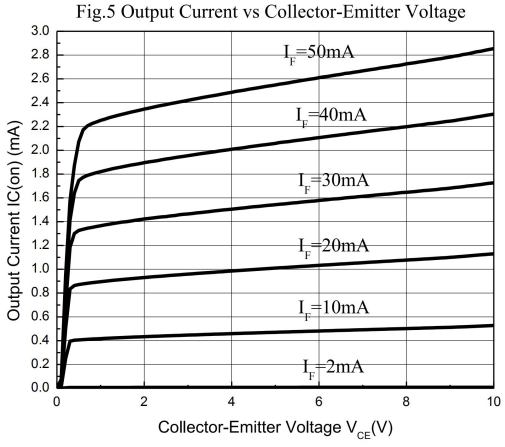
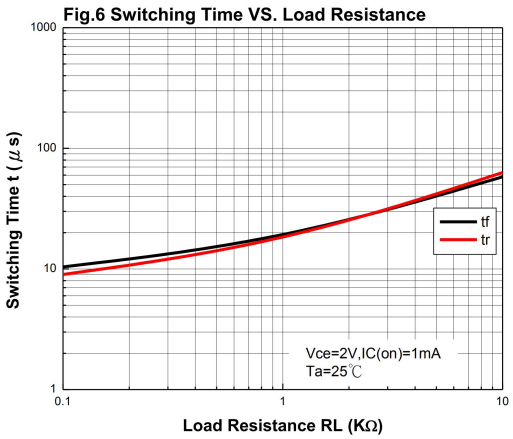
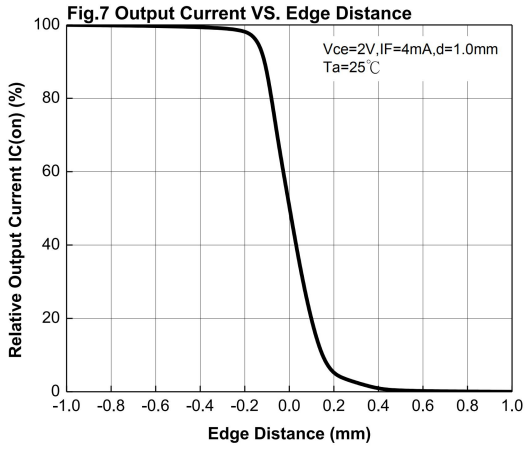
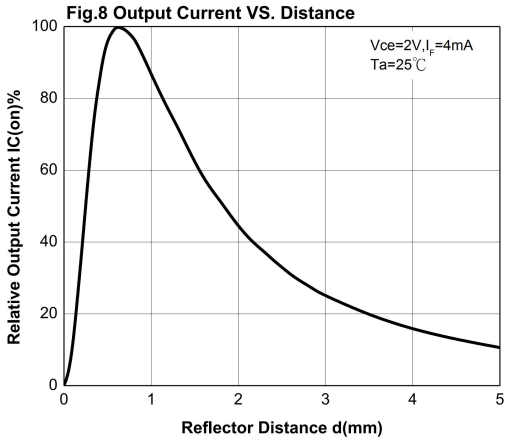


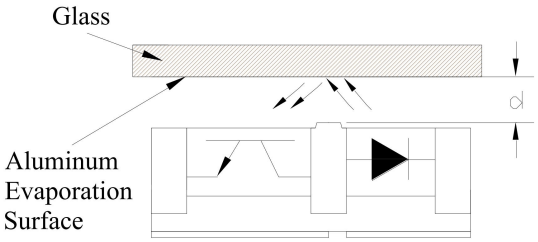
Fig.6 Switching Time VS. Load Resistance



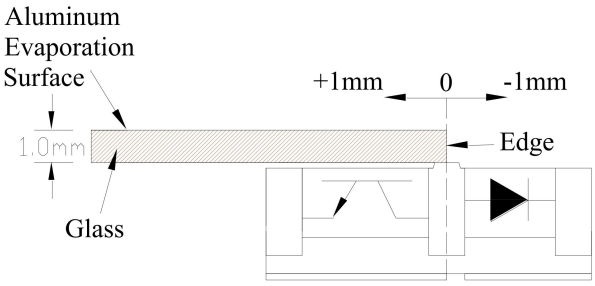




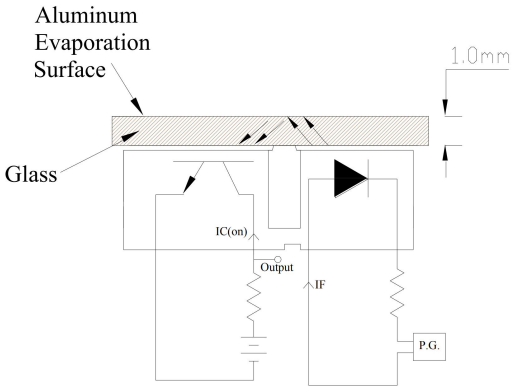
Measuring Specification For Reflector Response



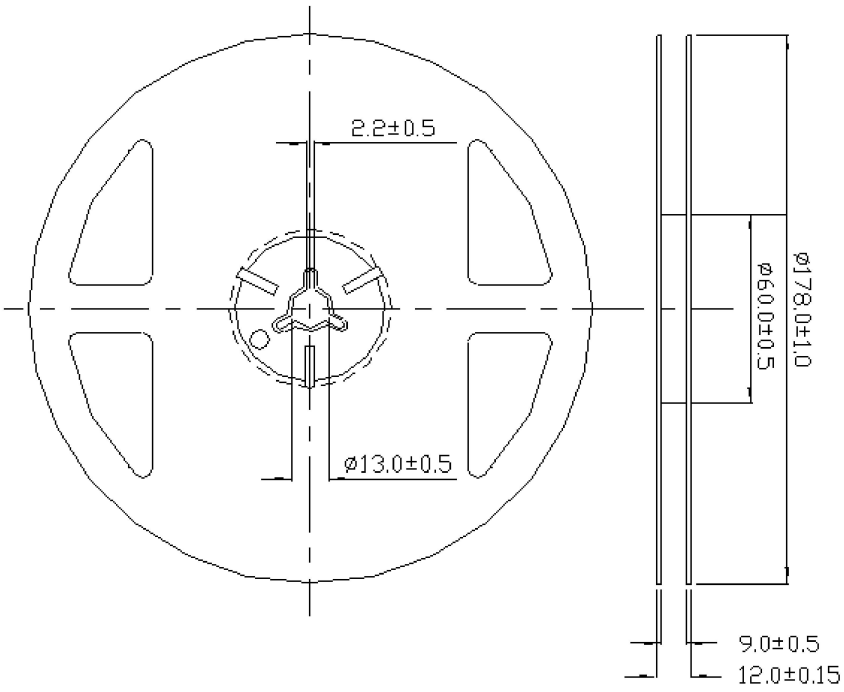
Measuring Specification For Edge Response



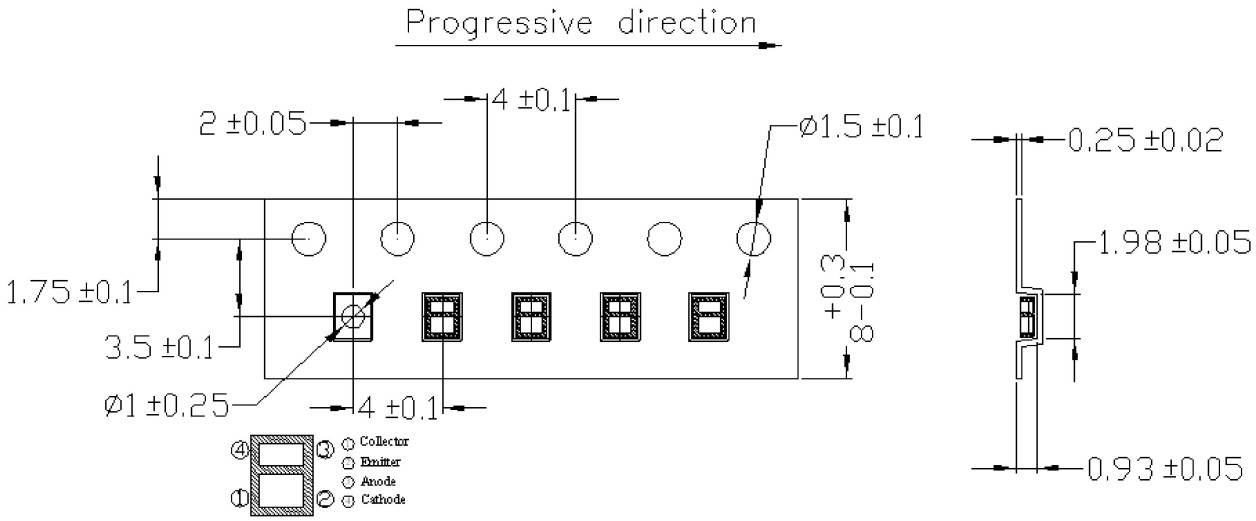
Measuring Circuit For Response Time



Package Dimensions



Taping Dimension



Packing Quantity Specification

1.2000PCS/1Bag，10Bags/1Box

2.10Boxes/1Carton

Label Form Specification

- PRODUCT: Part Number
- CODE NO.: Product Serial Number
- QTY: Packing Quantity
- LOT No: Lot Number
- REMARKS:Remarks

Notes

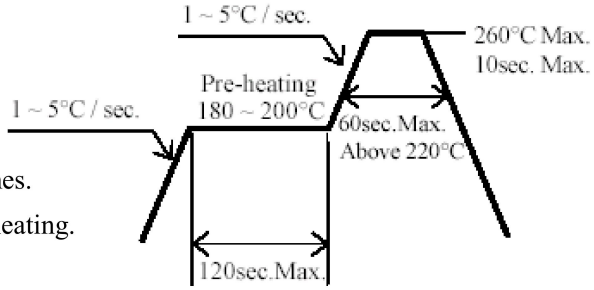
Soldering Condition

a) Pb-free solder temperature profile

b) Reflow soldering should not be done more than two times.

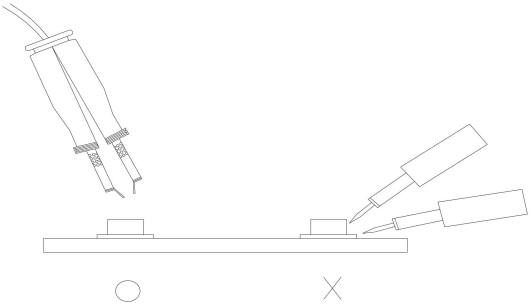
c) When soldering, do not put stress on the LEDs during heating.

d) After soldering, do not warp the circuit board.



Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



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