

SIC1024A

Photomicrosensor IC

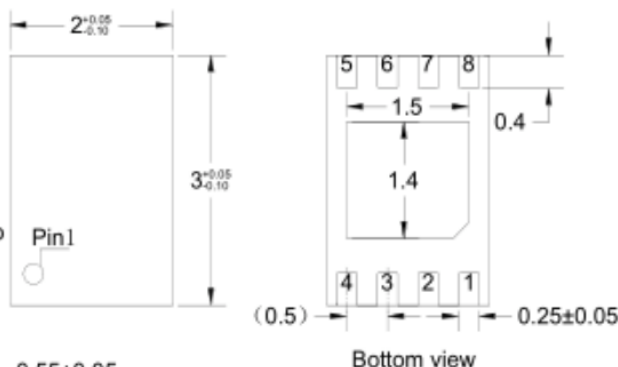
Dimensions

(Unit: mm)

SIC1024 is a photomicrosensor IC of NPN output type and is used for factory automation.

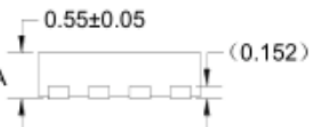
The output mode is Light ON/Dark ON Dual Mode.

The internal circuit includes IRED drive, LED drive, and output drive, short circuit protection, and reverse power voltage protection circuit are inserted into the protection circuit.



Features

- Maximum supply voltage : Max.25V
- Maximum output current : Max.50mA
- Quiescent current : Typ.9mA
- IRED constant current : Typ.5mA
- Output saturation voltage : Typ.0.5V
- Shortcircuit current : Typ.8mA



Applications

- Positioning of a pallet
- Sensing the Starting point and overrun of a moving body
- Sensing the starting point on a rotating body

No.	Symbol	Description	No.	Symbol	Description
1	-	No connected	8	Vcc	Power Supply
2	Vout1	Light ON output1	7	LED	Indicator LED Driver
3	Vout2	Dark ON output2	6	IRED	IRED Driver
4	GND	Ground	5	PTR	Input Signal

* General Tolerance(±0.1mm)

Maximum Ratings

(Ta=25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{CC}	24	V
Output Current	I _{out}	50	mA
Power Dissipation	P _D	600	mW
Operating temperature range ^{*1}	T _{opr.}	-30~70	°C
Storage temperature range ^{*1}	T _{stg.}	-55~150	°C

*1. No load condition

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Electro-Optical Characteristics

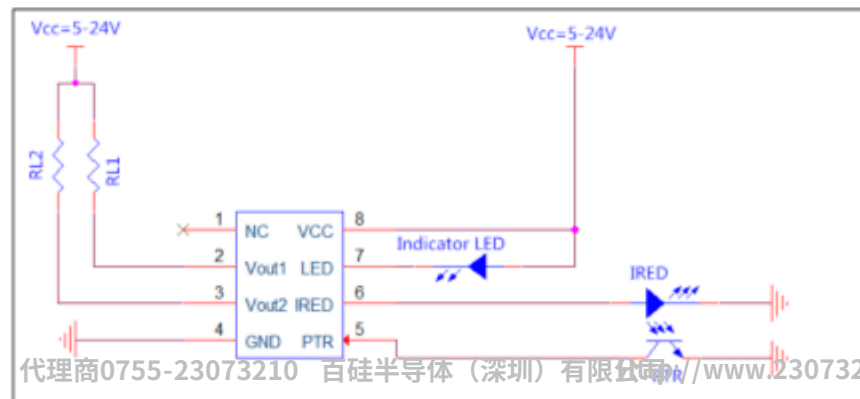
(Ta=25°C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Quiescent Current	I _{CC}	Output1,2=Open	5	9	15	mA
IREC Constant Current	I _{IREC}	IREC=Gnd	3	5	7	mA
LED Constant Current	I _{LED}	LED=Vcc	1	2.6	3.6	mA
PTR Constant Current	I _{PTR}	PTR=ON	75	150	225	μA
Output1 Saturation Voltage	V _{sat1}	PTR=ON I _{out1} =50mA	-	0.5	1	V
Output2 Saturation Voltage	V _{sat2}	PTR=OFF I _{out2} =50mA	-	0.5	1	V
Output1 Leakage Current	I _{leak1}	PTR=OFF	-	-	1	μA
Output2 leakage Current	I _{leak2}	PTR=ON	-	-	1	μA
Vcc Reverse Current	V _{ccIR}	Vcc=Gnd, Gnd=5~24V	-	-	1	μA
LED Leakage Current	I _{ILED1}	LED=Vcc	-	-	0.5	μA
Output1 Shorrcircuit Current	I _{sc1}	Output1=Vcc	-	8	20	mA
Output2 Shorrcircuit Current	I _{sc2}	Output2=Vcc	-	8	20	mA
Output1 Response Frequency	f _{R1}	PTR=3kHz Signal	-	3	-	kHz
Output2 Response Frequency	f _{R2}	PTR=3kHz Signal	-	3	-	kHz

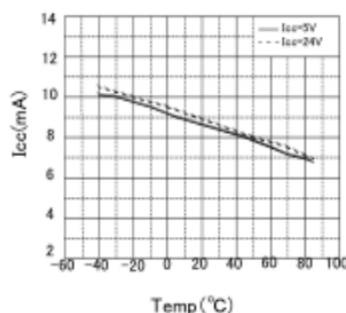
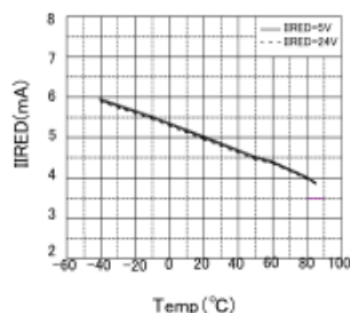
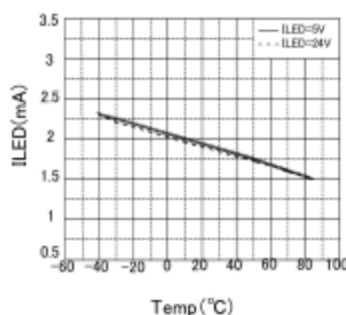
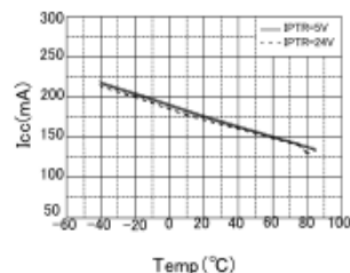
Operating Mode

PTR	LED	Output1	Output2
ON (Low)	ON	ON(Low)	OFF (High)
OFF(High)	OFF	OFF (High)	ON(Low)

Typical Applications



SIC1024A

I_{cc} Vs.Temp

I_{RED} Vs.Temp

I_{LED} Vs.Temp

I_{PTR} Vs.Temp

I_{sc} Vs.Temp
