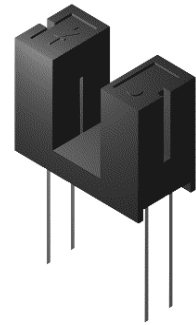


Photo-Interrupter Slot Type

OI S13504

Description

The construction of this device is to lay a 940nm Infrared LED facing a Phototransistor on the same axis. Employ reflection concept thus triggering a ON-OFF receiving signal. The most significant advantage of this product is it carries a function of a non-contact switch. It is free from any underlying mechanical stress in conventional switches.



Features

- Non contact switching
- Daylight blocking filter
- Emitter wavelength : 940nm
- Lead (Pb) – free soldering release

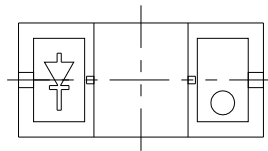


Application

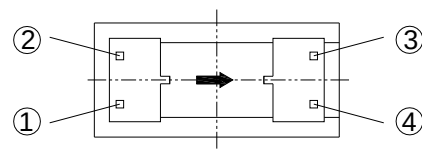
- Position sensor for shaft encoder
- Detection of opaque material
- Paper position sensor in copy machines

Package Dimension:

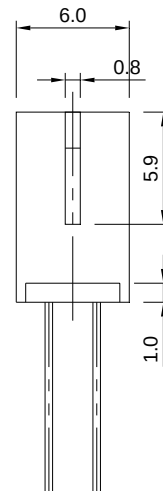
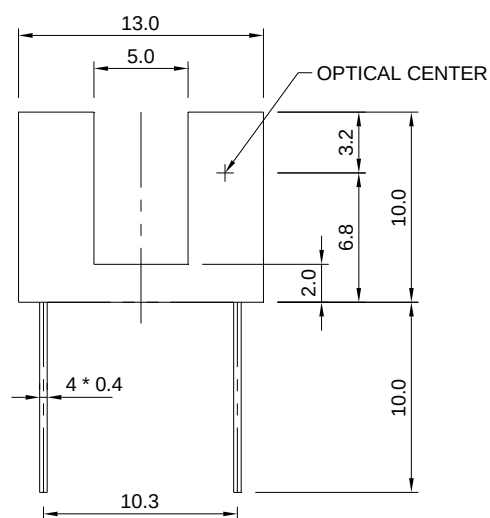
unit: mm



Top View



Bottom View



- ① Anode
- ② Cathode
- ③ Collector
- ④ Emitter

Notes:

1. All dimensions are millimeters.
2. Dimensional tolerance is $\pm 0.2\text{mm}$ unless otherwise specified.
3. Specifications are subject to change without notice.

Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Emitting Diode	Forward Voltage	V_F	-	1.2	1.5	V	$I_F=20\text{mA}$
	Reverse Current	I_R	-	-	10	μA	$V_R=5\text{V}$
	Peak Wavelength	λ_P	-	940	-	nm	$I_F=20\text{mA}$
	View Angle	$2\frac{1}{2}\theta$	-	40	-	Deg	$I_F=20\text{mA}$
Photo Transistor	Collector Dark Current	I_{CEO}	-	-	100	nA	$V_{CE}=10\text{V}$
Transfer Characteristic	C-E Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=2\text{mA}$ $I_F=20\text{mA}$
	Collector Current	$I_C(ON)$	0.5	--	--	mA	$V_{CE}=5\text{V}$ $I_F=20\text{mA}$
	Rise Time	t_r	-	15	-	μsec	$V_{CE}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1\text{K}\Omega$
	Fall Time	t_f	-	15	-	μsec	

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	Unit
Emitting Diode	Power Dissipation	P_d	80	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current Pulse width $\leq 100\ \mu\text{s}$, Duty cycle=1%	I_{FP}	1	A
Photo Transistor	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
Operating Temperature		T_{opr}	-25~+85	°C
Storage Temperature		T_{stg}	-40~+85	°C
Lead Soldering Temperature		T_{sol}	260	°C

Note: Please take note the Absolute Maximum Rating values. Any operation beyond the specified ratings in this table will result degradation of life-span and may cause product to fail.