

KI1319,1324

Slit less Type

Description

Model **KI1319/1324** consist of an Infra Red LED and a High sensitive Photo transistor. Outer package has no aperture on the both light pass surfaces of the emitter and detector.

Feature

- Open collector output type.
- Easy removing in paper-dust.
- Deep ditch-12mm.
- The other model;
Photo IC output type ··· **KI1315, KI1320**

Application

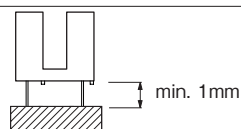
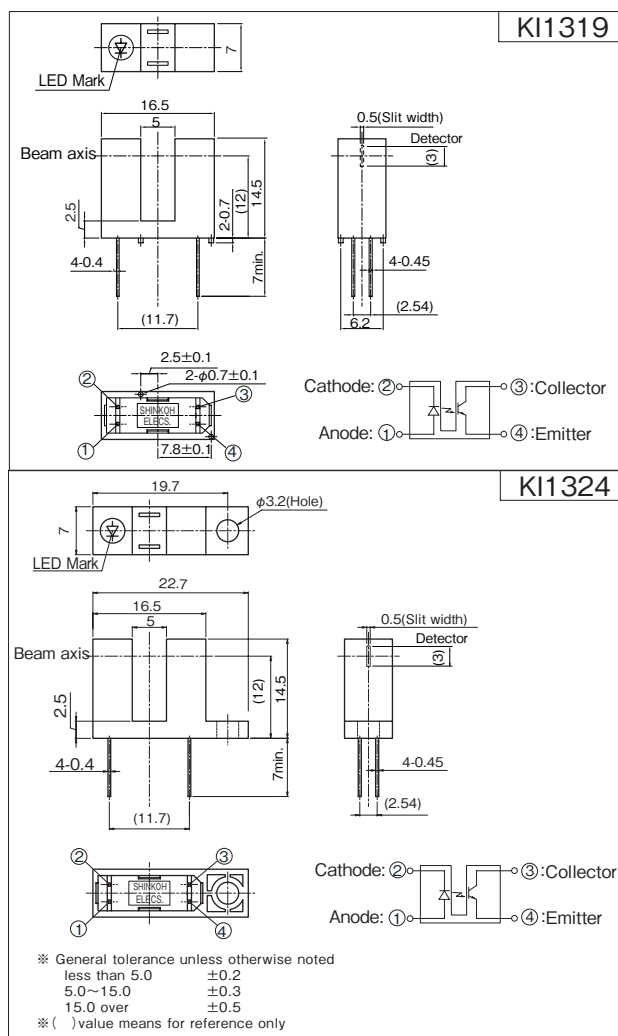
- Object passing for Card reader, Bill exchanger.
- Coin-passing for Auto vending machine and Amusement.
- Paper detection for O.A. equipment.

Absolute Maximum Ratings

[Ta=25°C Unless otherwise noted]

Item		Symbol	Rating	Units
Emitter	Forward Current	I_F	50	mA
	Pulse Forward Current* 1	I_{FP}	1	A
	Reverse Voltage	V_R	5	V
	Power Dissipation	P	75	mW
Detector	Collector-Emitter Voltage	V_{CEO}	30	V
	Emitter-Collector Voltage	V_{ECO}	5	V
	Collector Current	I_C	20	mA
	Power Dissipation	P_C	75	mW
Operating Temperature		T_{opr}	-20 ~ +85	°C
Storage Temperature		T_{stg}	-30 ~ +85	°C
Soldering Temperature* 2		T_{sol}	260	°C

Dimension (Unit:mm)



Solder Area

* 1. Pulse width: $t_w \leq 100 \mu \text{ sec}$, Duty ratio=0.01

* 2. Soldering condition 5sec. At 1mm over from body.

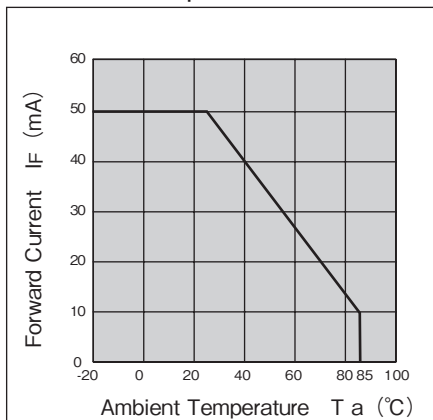
Electro-Optical Characteristics [Ta=25°C Unless otherwise noted]

Item		Symbol	Condition	min.	typ.	max.	Units
Emitter	Forward Voltage	V_F	$I_F=20\text{mA}$	—	1.2	1.5	V
	Reverse Current	I_R	$V_R=3\text{V}$	—	—	10	$\mu \text{ A}$
Detector	Dark Current	I_{CEO}	$V_{CE}=10\text{V}$, 0 lux	—	—	100	n A
Coupled	Light Current	I_C	$V_{CE}=5\text{V}$, $I_F=20\text{mA}$	0.5	1.5	—	mA
	Collector-Emitter Voltage	$V_{CE(sat)}$	$I_F=20\text{mA}$, $I_C=0.25\text{mA}$	—	—	0.4	V
	Response Time	Rise	$V_{CC}=5\text{V}$, $I_C=0.5\text{mA}$, $R_L=1\text{k} \Omega$	—	15	—	$\mu \text{ sec}$
		Fall		—	17	—	

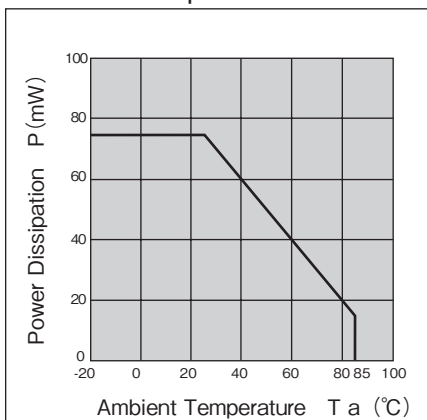
KI1319/1324

Note: Operation never exceeds each value of Absolute Maximum Ratings.

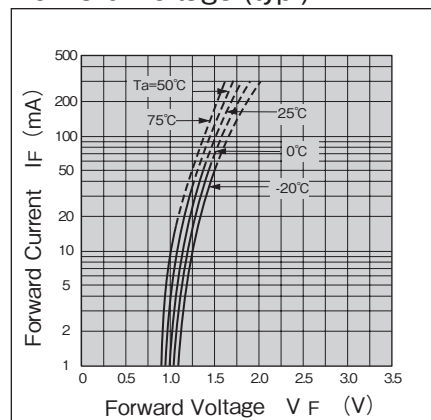
Forward Current vs. Ambient Temperature



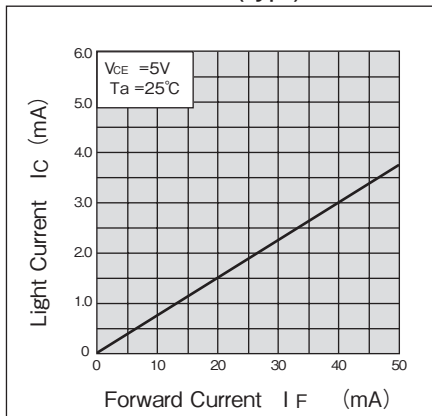
Collector Power Dissipation vs. Ambient Temperature



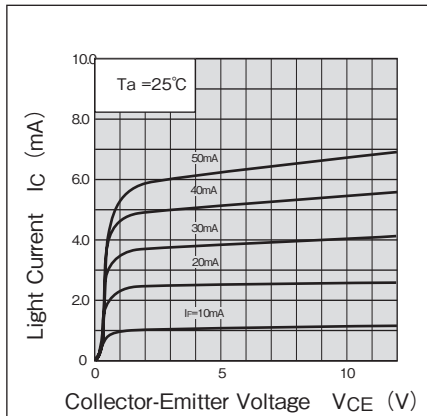
Forward Current vs. Forward Voltage (typ.)



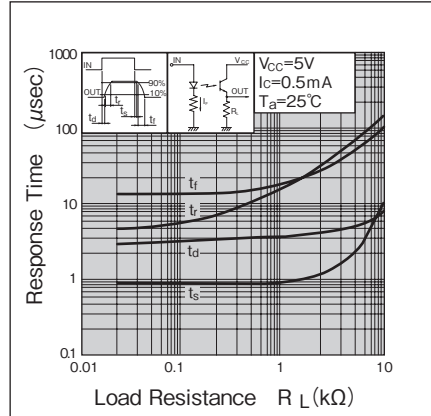
Light Current vs. Forward Current (typ.)



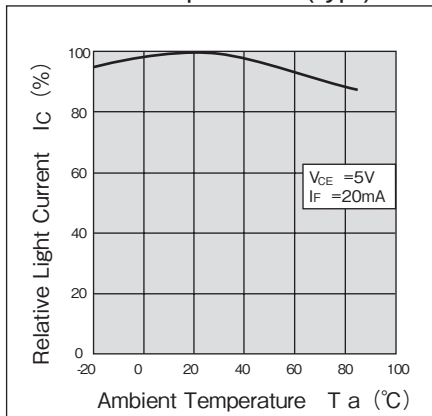
Light Current vs. Collector-Emitter Voltage (typ.)



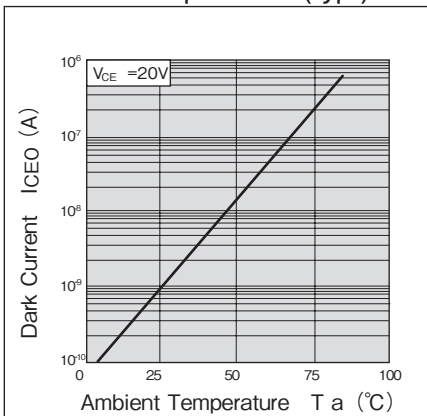
Response Time vs. Load Resistance (typ.)



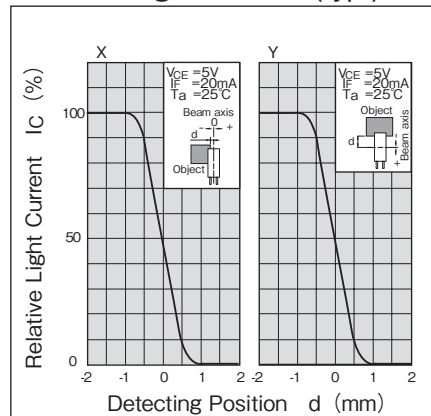
Relative Light Current vs. Ambient Temperature (typ.)



Dark Current vs. Ambient Temperature (typ.)



Detecting Position vs. Relative Light Current (typ.)



- A Custom designed package is available on request.
- Specification are subject to change without notice.

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