

KI1315,1320

Slit less Type

Description

Model **KI1315/1320** consist of an Infra Red LED and a Photo IC(Digital Output). Outer package has no aperture on the both light pass surfaces of the emitter and detector.

Feature

- Built-in amplifier, Open collector output type.
- Easy removing in paper-dust.
- High-resolution : slit width 0.5mm.
- Deep ditch-12mm.
- The other model; Phototransistor type ... **KI1319, KI1324**

Application

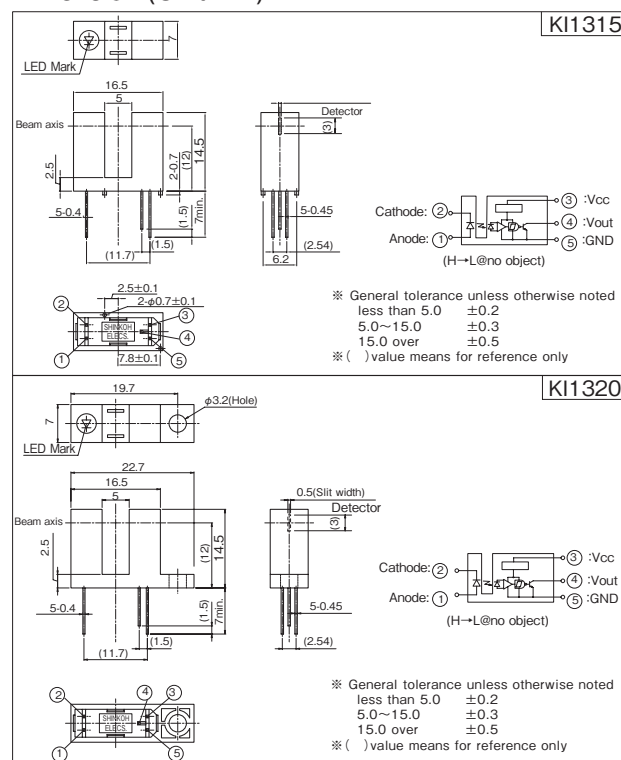
- Object passing for Card reader, Bill exchanger.
- Coin-passing for Auto vending machine and Amusement.
- Paper detection for O.A. equipment.

Absolute Maximum Ratings

[Ta=25°C Unless otherwise noted]

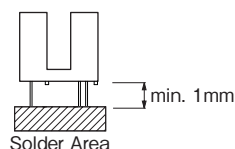
Item		Symbol	Rating	Units
Emitter	Forward Current	I_F	50	mA
	Pulse Forward Current ^{※1}	I_{FP}	1	A
	Reverse Voltage	V_R	5	V
Detector	Supply Voltage	V_{CC}	17	V
	Output Current	I_{OL}	16	mA
	Power Dissipation	P_C	175	mW
Operating Temperature		T_{opr}	-20 ~ +75	°C
Storage Temperature		T_{stg}	-30 ~ +85	°C
Soldering Temperature ^{※2}		T_{sol}	260	°C

Dimension (Unit:mm)



<Operation notice>

We recommend to use min. 0.01 μ F bypass condenser between Vcc and GND.



※ 1. Pulse width $t_w \leq 100 \mu$ sec Duty ratio=0.01

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

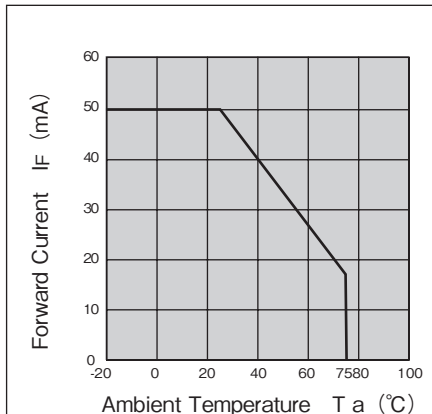
Electro-Optical Characteristics [Ta=25°C Unless otherwise noted]

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	$V_R=5\text{V}$	—	—	10	μ A
Detector	Low Level Output Voltage	V_{OL}	$I_{OL}=16\text{mA}$, $I_F=15\text{mA}$	—	0.15	0.4	V
	High Level Output Voltage	V_{OH}	$I_F=0$	$V_{CC} \times 0.9$	—	—	V
	Low Level Supply Current	I_{CCL}	$V_{CC}=5\text{V}$, $I_F=15\text{mA}$	—	—	3.4	mA
	High Level Supply Current	I_{CCH}	$V_{CC}=5\text{V}$, $I_F=0$	—	—	2.2	mA
	Threshold Input Current	I_{FHL}	$V_{CC}=5\text{V}$	—	—	10	mA
Coupled	Hysteresis		I_{FLH}/I_{FHL}	—	0.65	—	—
	Response Time	Rise	$V_{CC}=5\text{V}$, $I_F=20\text{mA}$, $R_L=280 \Omega$	—	0.1	—	μ sec
		Fall		—	0.04	—	

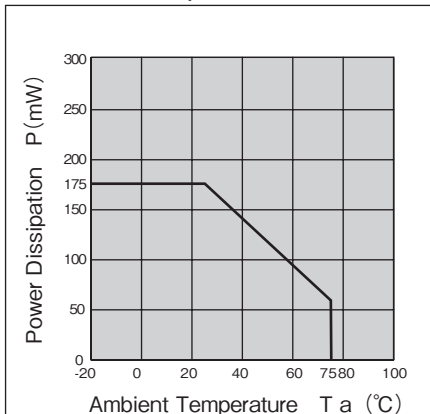
KI1315/1320

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

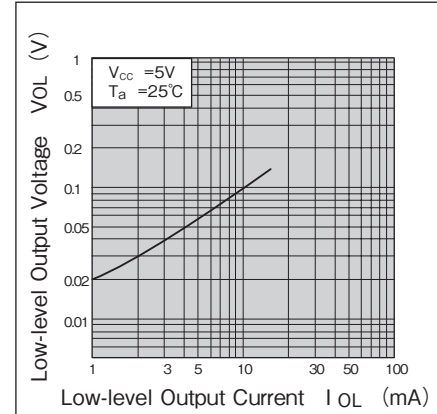
Forward Current vs. Ambient Temperature



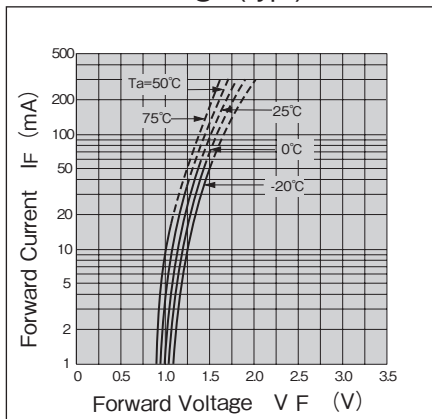
Collector Power Dissipation vs. Ambient Temperature



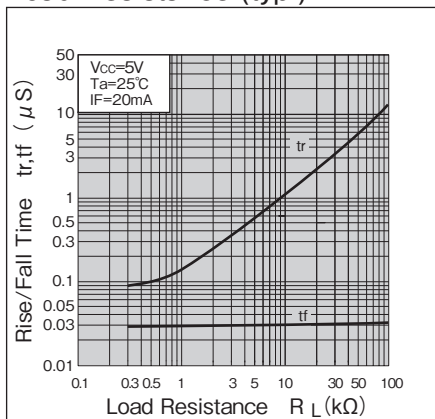
Low-level Output Voltage vs. Low-level Output Current (typ.)



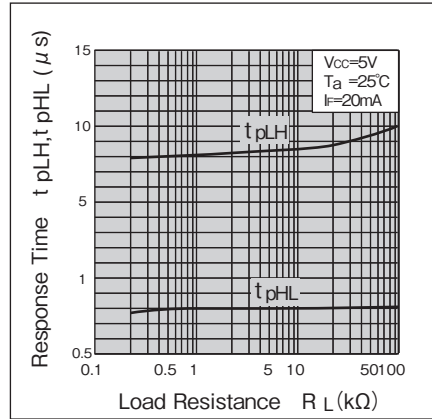
Forward Current vs. Forward Voltage (typ.)



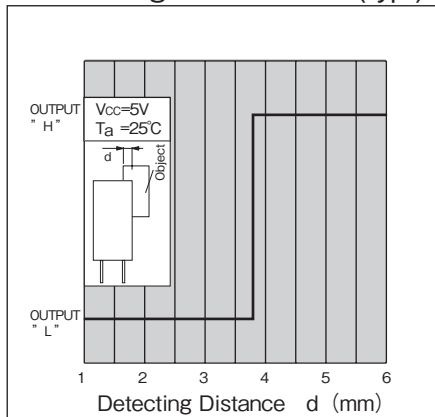
Rise, Fall Time vs. Load Resistance (typ.)



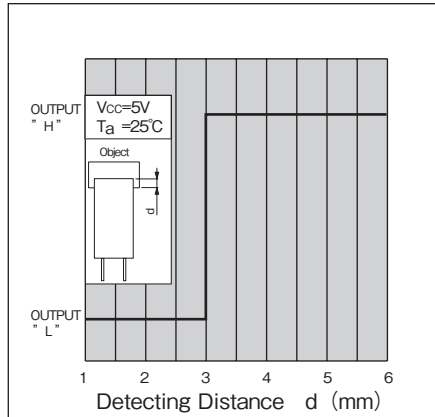
Response Time vs. Load Resistance (typ.)



Detecting Position vs. Relative Light Current 1 (typ.)



Detecting Position vs. Relative Light Current 2 (typ.)



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

04.09-1A

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