

KI1310,1311

Wide Gap Type

Description

Model **KI1310/1311** consist of an Infra Red LED and a High sensitive Photo IC(Digital Output).

Feature

- Built-in amplifier, Pull-up Resistor output type.
- Wide gap-8mm.
- The other model; Phototransistor type ... **KI1314**

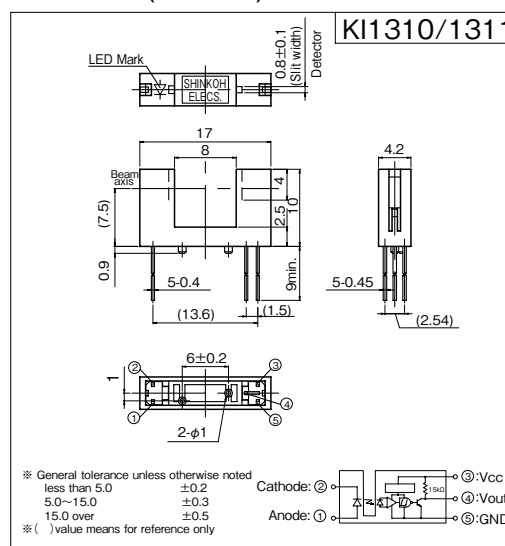
Application

- 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 ~ +85	°C
Storage Temperature		T_{stg}	-30 ~ +85	°C
Soldering Temperature ^{※2}		T_{sol}	260	°C

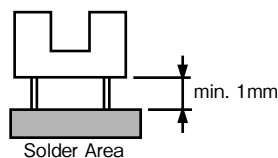
Dimension (Unit:mm)



Model	Operating mode
KI1310	at Beam detecting Low
KI1311	at Beam detecting High

<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.
 - ※ 3. Output is "Low $\rightarrow$ High" of Forward current.
- Hysteresis is I_{FHL}/I_{FLH} .

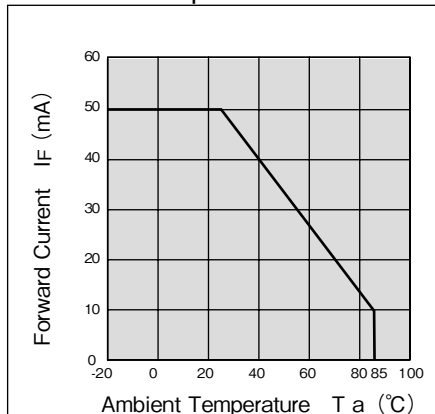
Electro-Optical Characteristics [Ta=25°C Unless otherwise noted] () means value of **KI1311**.

Item			Symbol	Condition		min.	typ.	max.	Units	
Emitter	Forward Voltage		V _F	I _F =20mA		—	1.2	1.5	V	
	Reverse Current		I _R	V _R =5V		—	—	10	μ A	
Detector	Low Level Output Voltage		V _{OL}	I _{OL} =16mA, I _F =15mA (I _F =0mA)		—	0.15	0.4	V	
	High Level Output Voltage		V _{OH}	I _F =0mA (I _F =15mA)		V _{CC} × 0.9	—	—	V	
	Low Level Supply Current		I _{CC} L	V _{CC} =5V, I _F =15mA (I _F =0mA)		—	—	3.4	mA	
	High Level Supply Current		I _{CC} H	V _{CC} =5V, I _F =0mA (I _F =15mA)		—	—	2.2	mA	
Coupled	Threshold Input Current		I _{FHL}	KI1310	High → Low	V _{CC} =5V	—	—	10	mA
			I _{FLH}	KI1311	Low → High		—	—	10	
	H y s t e r e s i s ^{※3}		I _{FHL} /I _{FLH}	V _{CC} =5V		—	0.65	—	—	
			I _{FLH} /I _{FHL}							
	Response Time		Rise	tr	V _{CC} =5V, I _F =20mA, R _L =280 Ω		—	0.1	—	μ sec
			Fall	tf			—	0.04	—	

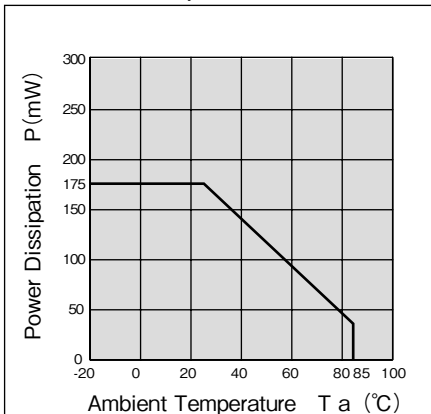
KI1310/1311

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

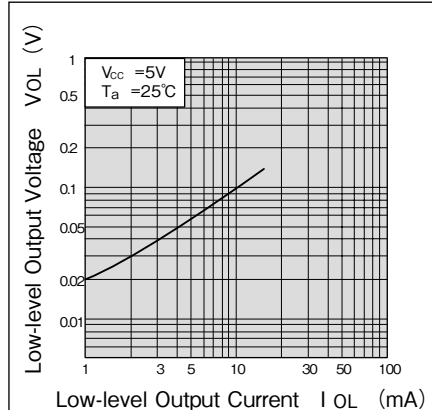
Forward Current vs.
Ambient Temperature



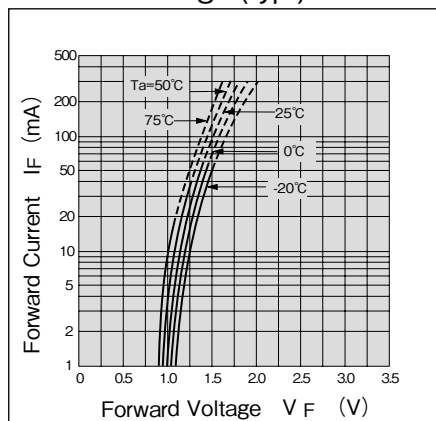
Collector Power Dissipation vs.
Ambient Temperature



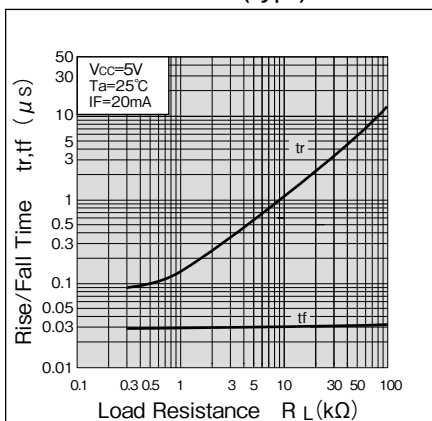
Low-level Output Voltage vs.
Low-level Output Current (typ.)



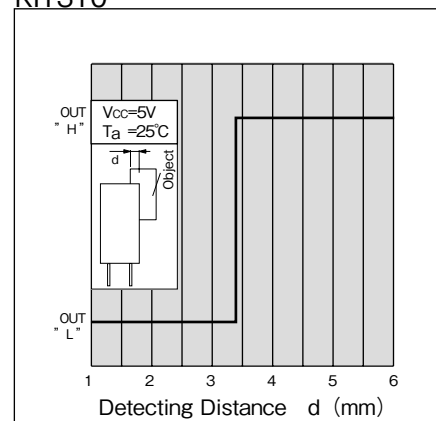
Forward Current vs.
Forward Voltage (typ.)



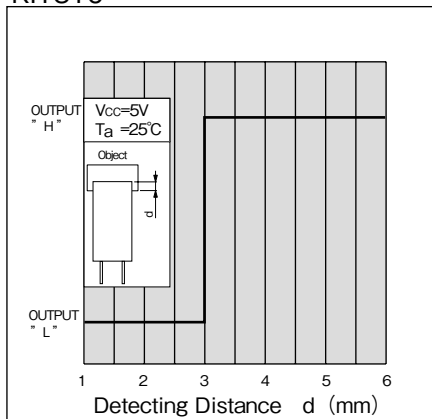
Rise/Fall Time vs.
Load Resistance (typ.)



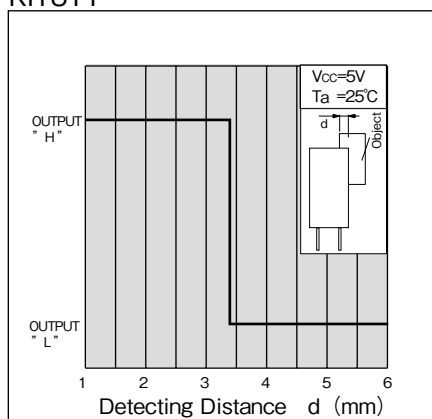
Detecting Position vs.
Relative Light Current (typ.)
KI1310



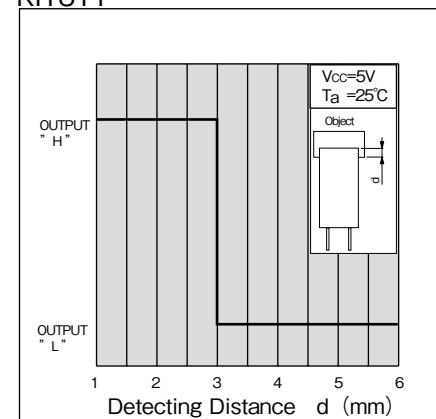
Detecting Position vs.
Relative Light Current (typ.)
KI1310



Detecting Position vs.
Relative Light Current (typ.)
KI1311



Detecting Position vs.
Relative Light Current (typ.)
KI1311



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

06.10-1A



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