

KI1230,1231

Wide Gap Type

Description

Model **KI1230/1231** consist of an Infra Red LED and a Photo IC.

Feature

- Built-in amplifier, Pull-up Resistor output type.
- Deep ditch-12mm.
- Wide gap-10mm.
- Other models: Phototransistor out put type ... **KI1222**

Application

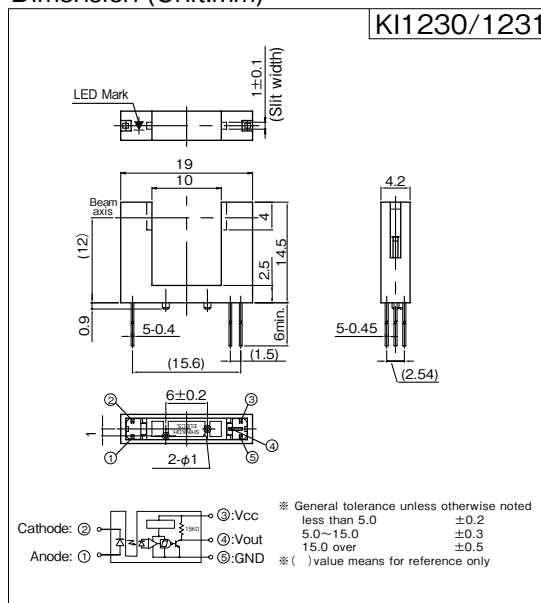
- Object passing for Card reader, Bill exchanger.
- Coin-passing for Auto vending machine and Amusement.
- Paper detection for O.A. equipment.

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

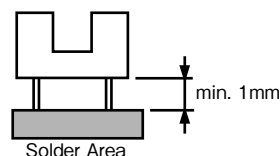
Dimension (Unit:mm)



Model	Operating mode
KI1230	at Beam detecting Low
KI1231	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} .

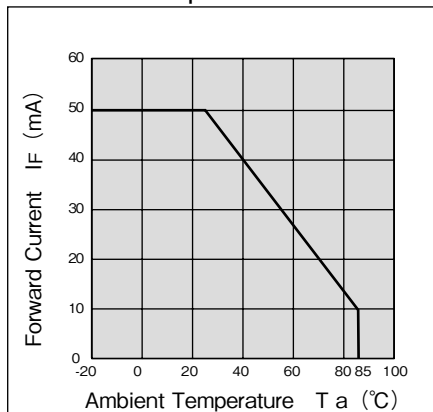
Electro-Optical Characteristics [Vcc=5V,Ta=25°C Unless otherwise noted] () means value of **KI1231**

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 =0)		—	0.15	0.4	V	
	High-Level Output Voltage		V _{OH}	I _F =0(I _F =15mA)		V _{CC} × 0.9	—	—	V	
	Low-Level Supply Current		I _{CC} L	V _{CC} =5V, I _F =15mA(I _F =0)		—	—	3.4	mA	
	High-Level Supply Current		I _{CC} H	V _{CC} =5V, I _F =0(I _F =15mA)		—	—	2.2	mA	
Coupled	Threshold Input Current		I _{FHL}	KI1230	High → Low	V _{CC} =5V	—	—	10	mA
			I _{FLH}	KI1231	Low → High					
	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				—	0.05	—	

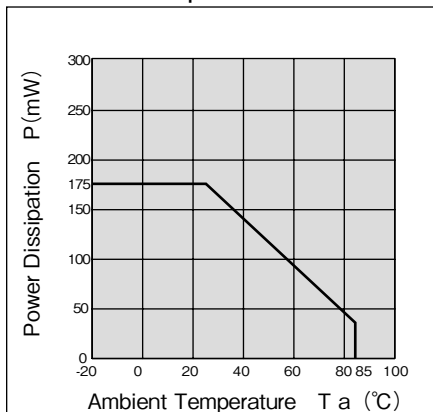
KI1230/1231

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

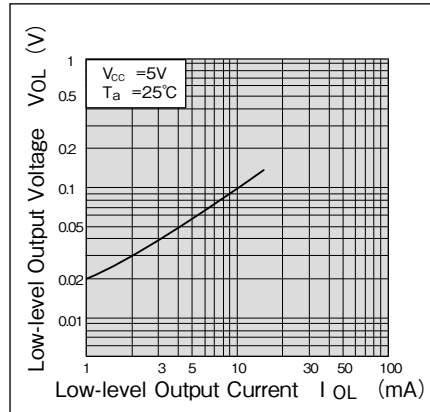
Forward Current vs.
Ambient Temperature



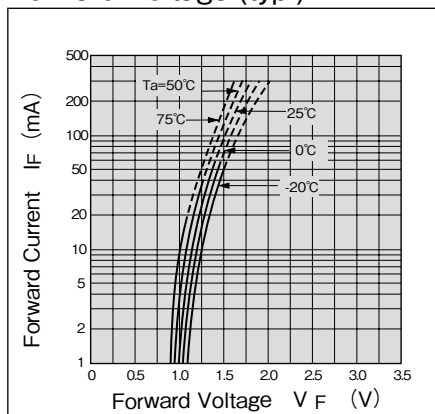
Power Dissipation vs.
Ambient Temperature



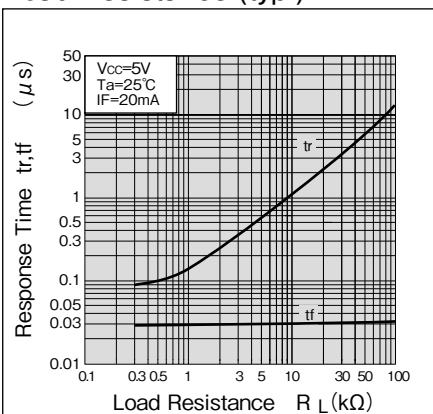
Low-level Output Voltage vs.
Low-level Output Current (typ.)



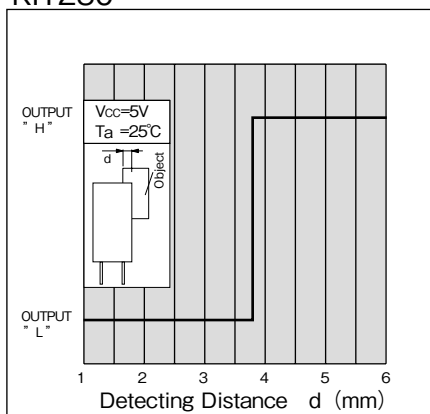
Forward Current vs.
Forward Voltage (typ.)



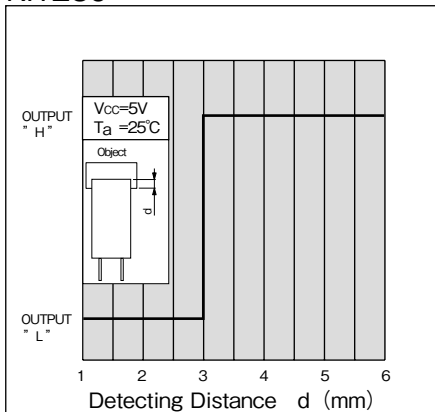
Response Time vs.
Load Resistance (typ.)



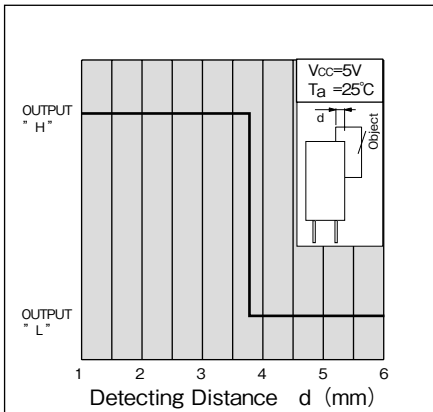
Detecting Position 1 (typ.)
KI1230



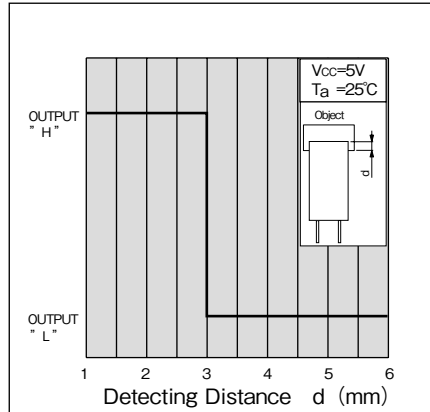
Detecting Position 2 (typ.)
KI1230



Detecting Position 1 (typ.)
KI1231



Detecting Position 2 (typ.)
KI1231



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

06.10-1A



Head Office: 3-16-9, Minami-Kamonomiya, Odawara, Kanagawa
Zip code: 250-0875 Japan
Tel: +81 -465-45-1212 / Fax: +81 -465-45-1213
Tokyo Office: 5F, Ebuchi Bld., 3-24-13, Minami-Ohi, Shinagawa,
Tokyo
Website: <http://www.shinkoh-elecs.com/>