SPECIFICATION

FOR PRELIMINARY

ISSUED DATE : **2020. 12. 14**

DOCUMENT NO :

CUSTOMER :

DESCRIPTION : **Photo Interrupter**

MODEL NO. : **KEITU011A**

[AUE CORP.]

ISSUE DEPT.			PRODUCTION		Q/A	
ISSUE	REVIEW	APPR'L	REVIEW	APPR'L	REVIEW	APPR'L
HS.Mo	SJ.Kim	CH.Cho				

[CUSTOMER APPROVAL]

ISSUE	REVIEW					

[REVISION]

NO	DATE	REVISION ITEMS	ISSUED BY	APPR'D BY
0	20. 11. 16	Issue	HS.Mo	CH.Cho
1	20. 12. 14	Update (Cautions in Usage)	HS.Mo	CH.Cho

AUE CORP. takes no responsibility for damage caused by improper use of the devices which does not meet the conditions and absolute maximum ratings to be used specified in the relevant specification sheet.

Please obey the instructions mentioned below for actual use of this device.

① This device is designed for general electronic equipment.
Main use of this device are as follows;

(* Computer * OA equipment * Telecommunication equipment(Terminal)
* Measuring instrument * Machine tool *Industrial robot
* AV equipment * Home appliance,etc.)

② Please take proper steps in order to maintain reliability and safety, in case this device is used for the uses mentioned below which require high reliability.

(* Unit concerning control and safety of a vehicle (air plane,train,automobile, etc.)
* Traffic signal * Gas leak detection breaker
* Fire box and burglar alarm box * Other safety equipment,etc.)

③ Please don't use for the uses mentioned below which require extremely high reliability.

(* Space equipment * Telecommunication equipment(Trunk)
* Nuclear control equipment * Medical equipment(relating to any fatal element),etc.)

1. Description

The KEITU011A is a high performance transmissive type photointerrupter, combines high-output GaAs IRED with high sensitive phototransistor.

2. Features

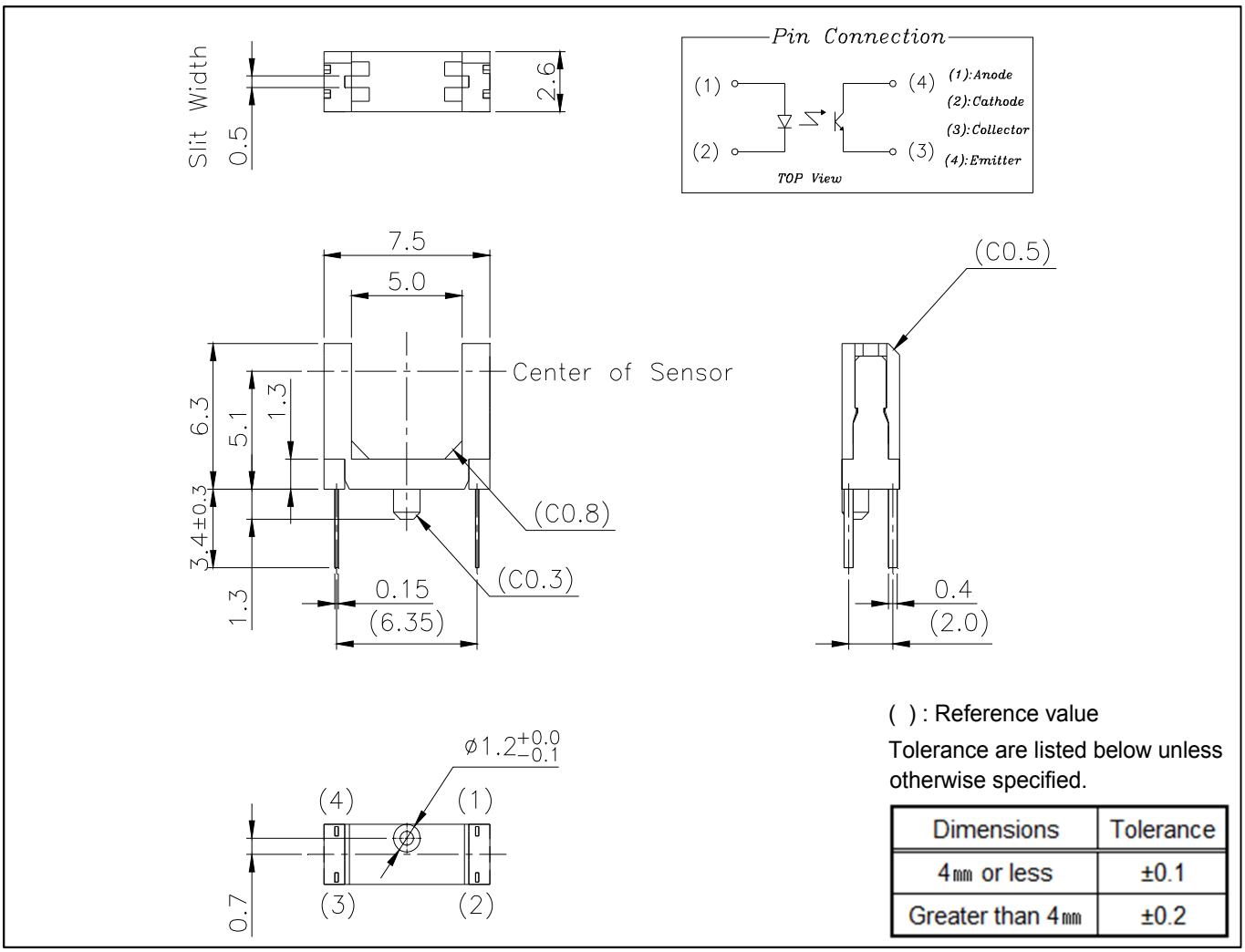
- Compact Package : 7.5 (w) × 6.3(h) × 2.6(d)㎜
- PCB Direct Mounting
- RoHS Compliance
- Gap Size : 5㎜
- Resolution : Slit Width = 0.5㎜

3. Applications

- Printers
- Copiers
- Position Detection

4. Outline Dimensions

[Unit : ㎜]



( ) : Reference value

Tolerance are listed below unless otherwise specified.

Dimensions	Tolerance
4㎜ or less	±0.1
Greater than 4㎜	±0.2

5. Absolute Maximum Ratings

[Ta=25℃]

Parameter		Symbol	Rating	Unit
Input (LED)	Power Dissipation	P_D	75	mW
	Forward Current	I_F	30	mA
	Reverse Voltage	V_R	5	V
	Pulse Forward Current *1	I_{FP}	1	A
Output (Photo TR)	Collector Disspation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	V_{CEO}	35	V
	Emitter-Collector Voltage	V_{ECO}	5	V
Soldering Temperature for 5 Seconds		$T_{sol.}$	260	℃
Operating Temperature		$T_{opr.}$	-30 ~ +85	℃
Storage Temperature Range		$T_{stg.}$	-40 ~ +100	℃
ESD Withstand Voltage (Human Body Model)		V_{ESD}	±2.0	kV

*1 : pulse width : tw ≤100μsec.period : T-10msec.

6. Electrical Characteristics

[Ta=25℃]

Parameter		Symbol	Conditions	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	I_F=10mA	1.0	1.2	1.4	V
	Reverse Current	I_R	V_R=5V	-	-	10	μA
	Peak Wavelength	λ_P	I_F=10mA	-	940	-	nm
Output	Dark Current	I_{CEO}	V_{CE}=25V, I_F=0mA, E=0 lux	-	-	100	nA
	Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=20mA, I_C=0.25mA	-	-	0.4	V
Transfer Charac-teristics	Collector Current	I_C	I_F=10mA, V_{CE}=5V	0.25	-	1.0	mA
	Rise Time *2	t_r	V_{CE}=5V, I_C=1mA, R_L=1kΩ	-	15	50	μs
	Fall Time *2	t_f		-	15	50	

*2 : Adjust amplitude and offset of square wave so that Vout transitions from 10% to 90% of Vout range of the Device Under Test(DUT)

◆ TEST CIRCUIT

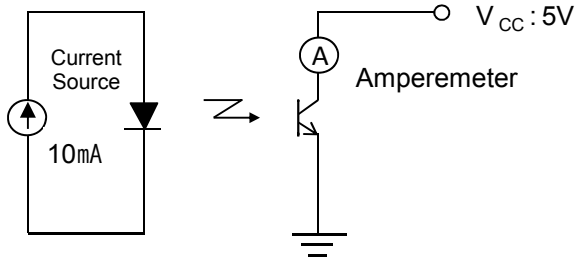


Fig 1. Test Circuit for I_C

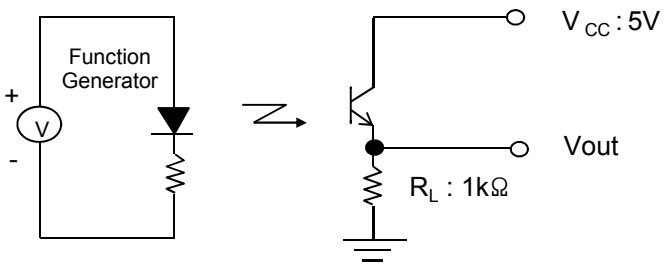


Fig 2. Test Circuit for Rise and Fall Time

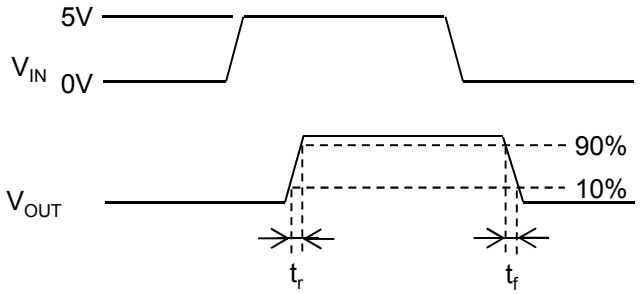


Fig 3. Definitions for Response Times

7. Packaging

7-1. The part package contain the following information:

- Symbol
- Date Code
- Lot Code
- The words "RoHS Compliant"

8. Cautions in Usage

8-1. Store and use where there is no exterior force that will cause change in shape.

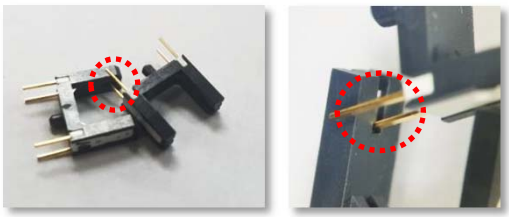
8-2. Store and use where there is no Hydrogen Sulfide gas, or any other corrosive gas.

8-3. The bending or cutting of the lead should be done at room temperature, no force being applied on the package.

8-4. Solder the lead pin under conditions of the absolute maximum rating chart, and do not apply force on the lead pin after soldering.

8-5. When assembling the product, be careful not to let the lead pin penetrate through the slits.

Wrong Case)



9. Guarantee Period and Scope

9-1. Period

One year after delivery to the desired place.

9-2. Scope

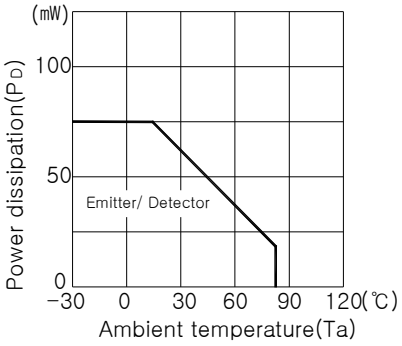
Replacement of products will be done, if any problems lie in our company's products. However, we are not liable for your damage by lack of caution.

10. Others

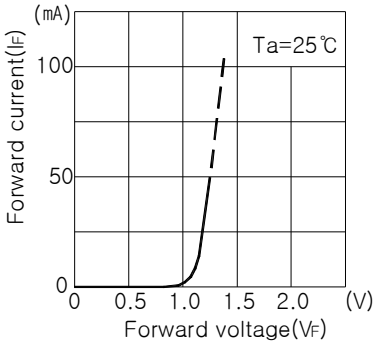
Any doubts concerning this specification should be discussed fully by both parties.

■ Characteristics

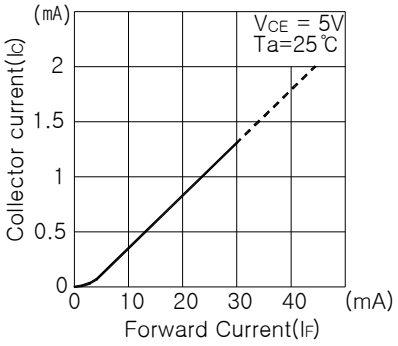
Power dissipation Vs. Ambient temperature



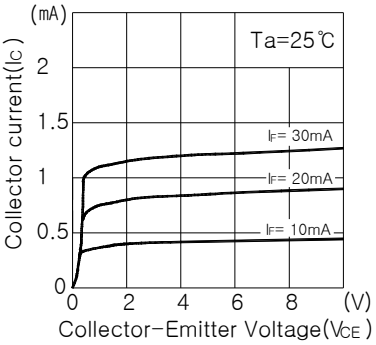
Forward current Vs. Forward voltage



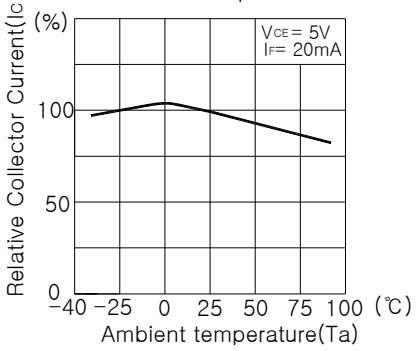
Collector Current Vs. Forward Current



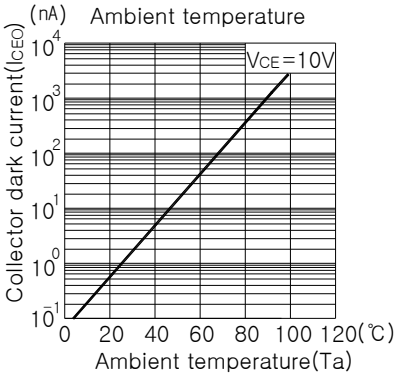
Collector Current Vs. Collector−Emitter Voltage



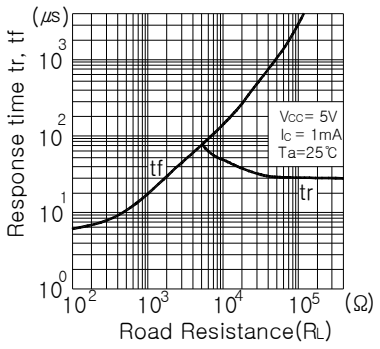
Relative Collector Current Vs. Ambient temperature



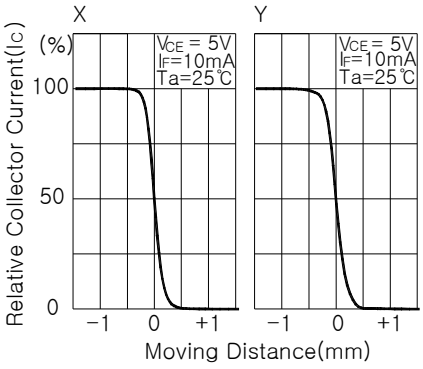
Dark current Vs. Ambient temperature



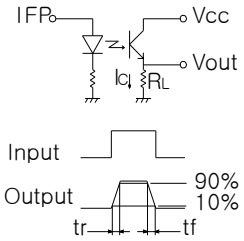
Switching time Vs. Load resistance



Relative Collector Current Vs. Moving distance



Switching time measurement circuit



Method of measuring position detection characteristic