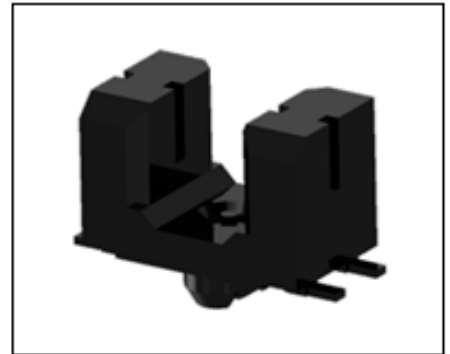


## Photo Interrupter

## KIT2011S

### Description

The KIT2011S photo interrupter high-performance standard type, combines high-output GaAs IRED with high sensitivity phototransistor.



### Features

- Transmissive with phototransistor output
- 2.0mm gap, 0.3mm slit with
- Compact size
- Lead Free and RoHS Compliant.
- MSL 3

### Applications

- Cameras.
- Encoders.
- Printers.
- DVD.

### Absolute Maximum Ratings (T<sub>a</sub>=25°C, Unless otherwise specified)

Characteristic		Symbol	Ratings	Unit
Input LED	Power Dissipation	P <sub>D</sub>	75	mW
	Forward Current	I <sub>F</sub>	50	mA
	Reverse Voltage	V <sub>R</sub>	6	V
	Pulse Forward Current *1	I <sub>FP</sub>	0.5	A
Output Detector	Collector Dissipation	P <sub>C</sub>	75	mW
	Collector Current	I <sub>C</sub>	20	mA
	C-E Voltage	V <sub>CEO</sub>	35	V
	E-C Voltage	V <sub>ECO</sub>	6	V
Operating Temperature *2		Topr.	-40 ~ +95	°C
Storage Temperature *2		Tstg.	-40 ~ +100	°C
Soldering Temperature *3		Tsol.	260	°C

\*1 : Pulse width  $t_w \leq 100 \mu\text{s}$  period  $T=10 \text{ ms}$

\*2 : No icebound or dew

\*3 : The soldering should be 0.3mm or more away from bottom of the case t=within 3sec

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When using this product, would you please refer to the latest specifications.

## Electrical Characteristics ( $T_a=25^\circ\text{C}$ )

Characteristic		Symbol	Min.	Typ.	Max.	Unit	Condition
Input LED	Forward Voltage	$V_F$	-	1.2	1.4	V	$I_F=20\text{ mA}$
	Reverse Current	$I_R$	-	-	10	$\mu\text{A}$	$V_R=5\text{V}$
	Peak Wavelength	$\lambda_P$	-	940	-	nm	$I_F=20\text{ mA}$
Output Detector	Dark Current	$I_{CEO}$	-	1	100	nA	$V_{CE}=10\text{V}, 0\text{Lux}$
	Peak Wavelength	$\lambda_P$	-	880	-	nm	-
Transmission Characteristics	Light Current (Collector Current)	$I_C$	0.10	-	0.65	mA	$I_F=5\text{ mA}, V_{CE}=5\text{V}$ Non shading
	Leakage Current	$I_{CEO D}$	-	0.5	10	$\mu\text{A}$	$I_F=5\text{ mA}, V_{CE}=5\text{V}$ Shading
	C-E Saturation Voltage	$V_{CE}(\text{sat})$	-	0.15	0.4	V	$I_F=10\text{ mA}, I_C=0.04\text{ mA}$
Response Time	Rise Time	$t_r$	-	50	150	$\mu\text{s}$	$V_{CC}=5\text{V}, I_C=1\text{ mA}$ $R_L=1\text{k}\Omega$
	Fall Time	$t_f$	-	50	150	$\mu\text{s}$	

- Circuit for measuring response time

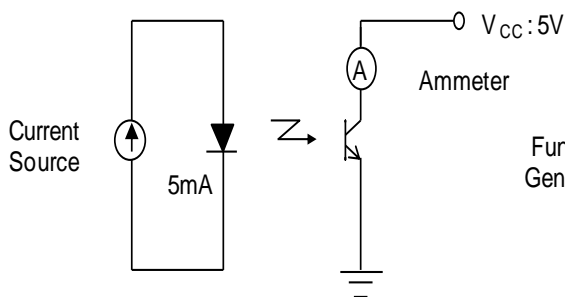


Fig 1. Test Circuit for  $I_C$

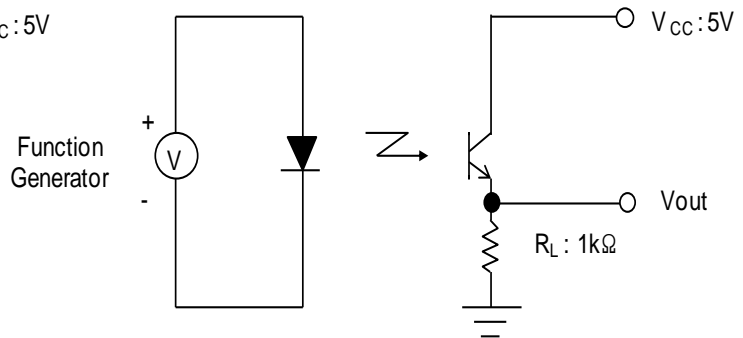


Fig 2. Test Circuit for Rise and Fall Time

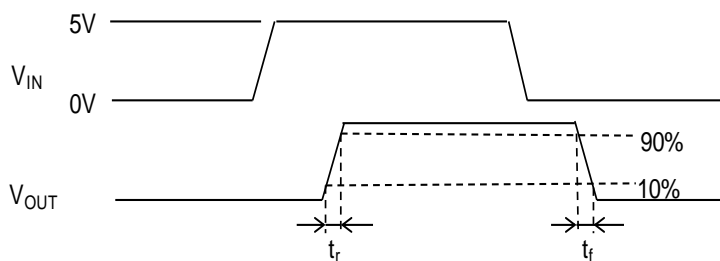
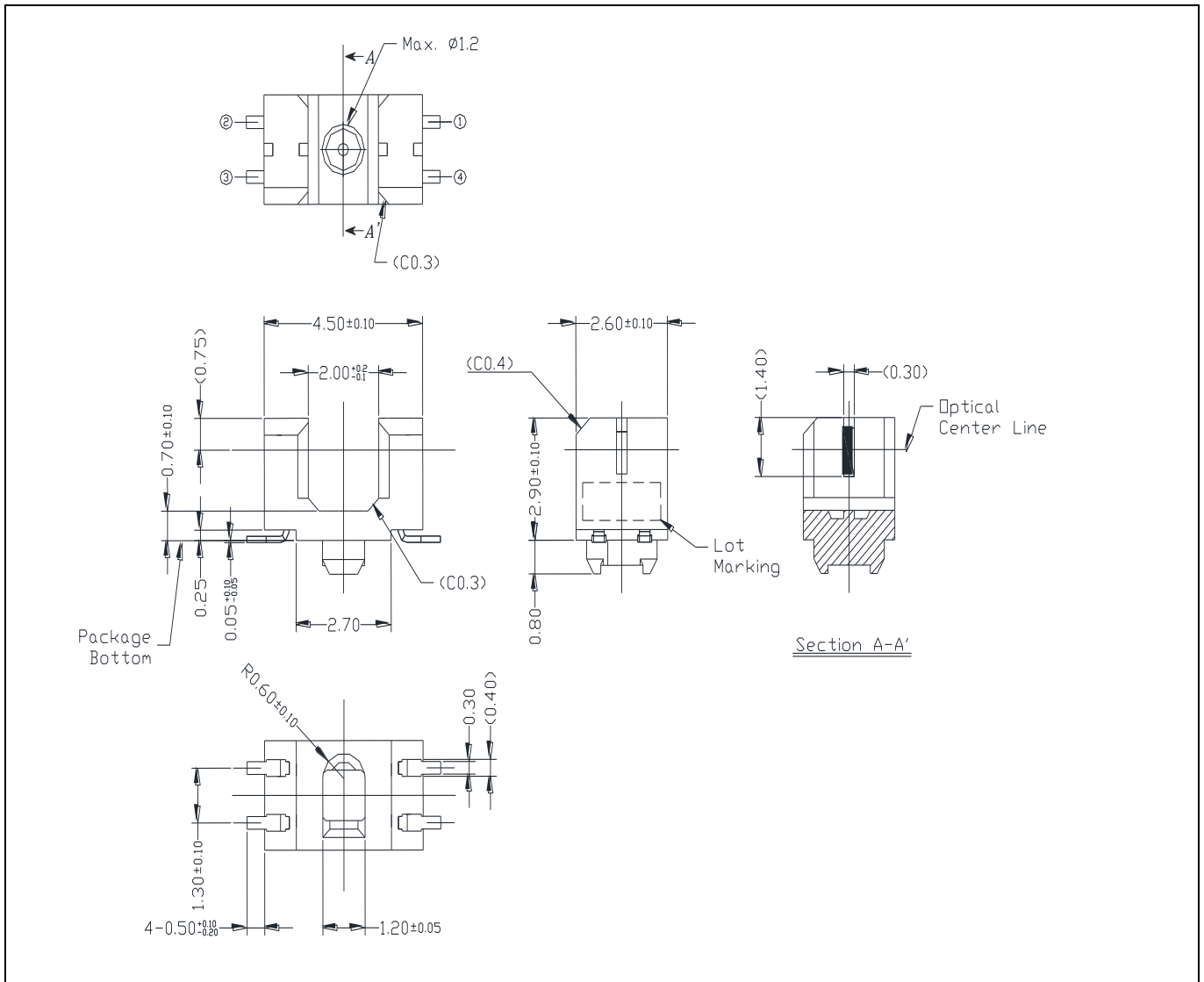


Fig 3. Definitions for Response Times

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## Package Outline Dimensions



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