

# KIT-1001A

## DESCRIPTION

The photointerrupter high-performance standard type KIT-1001A combines a high-output GaAs IRED with a high sensitivity phototransistor.

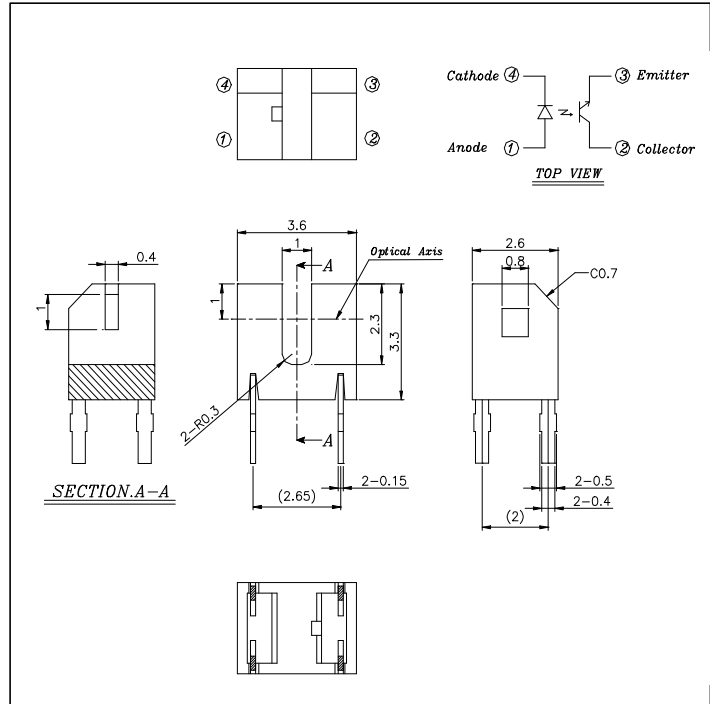
## FEATURES

- PWB direct mount type
- GAP : 1.0mm
- Ultra - compact

## APPLICATIONS

- Cameras
- Floppy disk drives
- Encoders

## DIMENSIONS



## ABSOLUTE MAXIMUM RATINGS

(Ta=25 )

Parameter		Symbol	Rating	Unit
Input	Forward Current	$I_F$	50	mA
	Pulse Forward Current <sup>*1</sup>	$I_{FP}$	0.5	A
	Reverse Voltage	$V_R$	5	V
	Power Dissipation	$P_D$	75	mW
Output	Collector Emitter Voltage	$V_{CEO}$	30	V
	Emitter Collector Voltage	$V_{ECO}$	5	V
	Collector Current	$I_C$	20	mA
	Collector Power Dissipation	$P_C$	75	mW
Operating Temperature <sup>*2</sup>		$T_{OPR}$	-20 ~ +85	
Storage Temperature <sup>*2</sup>		$T_{STG}$	-30 ~ +100	
Soldering Temperature <sup>*3</sup>		$T_{SOL}$	260	

\*1. Pulse width :  $t_w$  100  $\mu$ sec, period : T=10msec

\*2. No icebound or dew

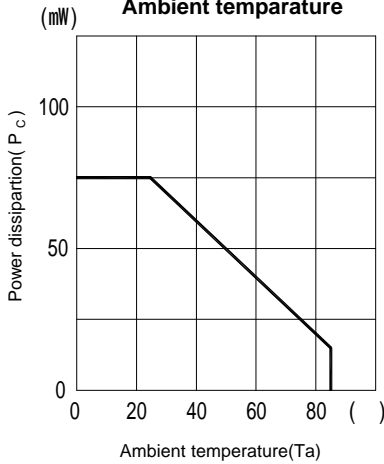
\*3. For MAX. 5 seconds at the position of 1mm from the package

## ELECTRO-OPTICAL CHARACTERISTICS

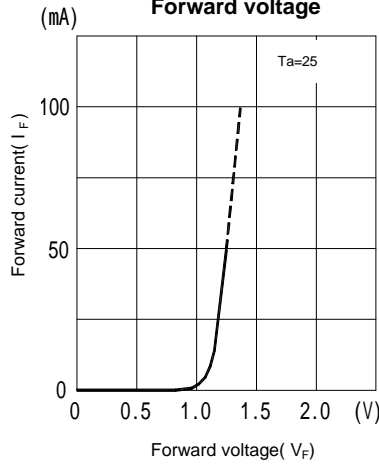
(Ta=25 )

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward Voltage	$V_F$	$I_F=20mA$	-	1.2	1.4	V	
	Reverse Current	$I_R$	$V_R=5V$	-	-	10	$\mu$ A	
	Peak Wavelength	$\lambda_P$	$I_F=20mA$	-	940	-	nm	
Output	Dark Current	$I_{CEO}$	$V_{CE}=10V, 0lx$	-	1	100	nA	
Coupled	Light Current (Collect Current)	$I_{L1}$	$V_{CE}=5V, I_F=10mA$ (Non-shading)	0.5	-	-	mA	
		$I_{L2}$	$V_{CE}=5V, I_F=5mA$ (Non-shading)	0.2	-	-	mA	
	Leakage Current	$I_{CEO(D)}$	$V_{CE}=5V, I_F=10mA$ (shading)	-	0.5	10	$\mu$ A	
	Collector Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_F=10mA, I_C=0.3mA$	-	0.15	0.4	V
	Response Time	Rise Time	$t_r$	$V_{CE}=5V, I_C=1mA, R_L=100$	-	10	-	$\mu$ s
Fall Time		$t_f$		-	10	-	$\mu$ s	

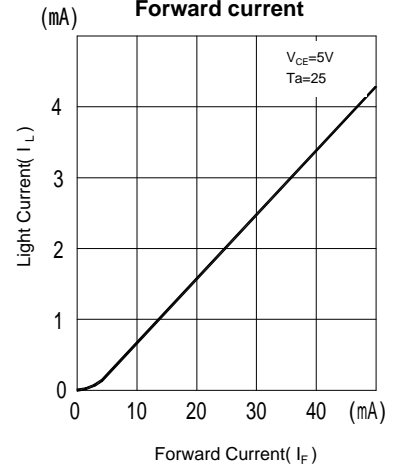
**Collector power dissipation Vs. Ambient temperature**



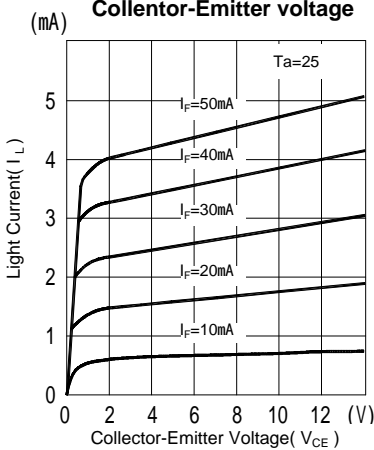
**Forward current Vs. Forward voltage**



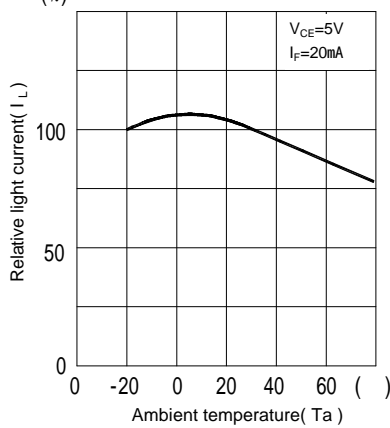
**Light current Vs. Forward current**



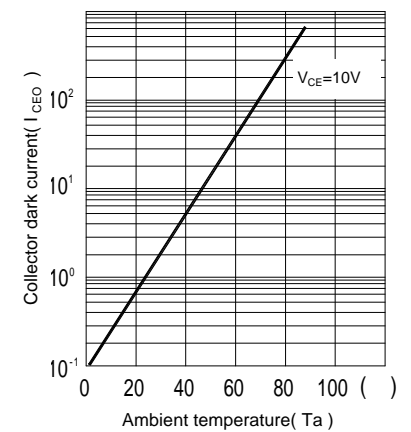
**Light current Vs. Collector-Emitter voltage**



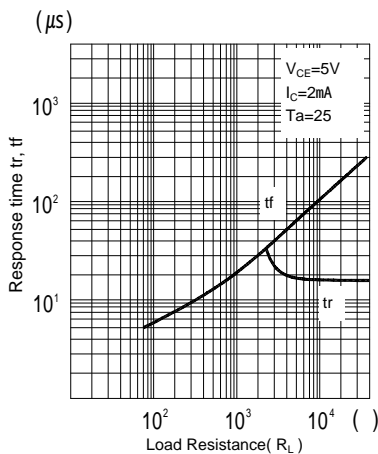
**Relative light current Vs. Ambient temperature**



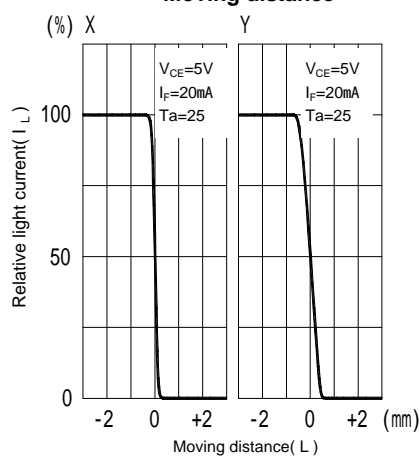
**Dark current Vs. Ambient temperature**



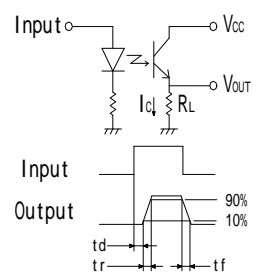
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



Response time measurement circuit



Method of measuring position detection characteristic

