

# SG278

The SG278 photointerrupter high-performance standard type, combines high-output GaAs IRED with high sensitive phototransistor.

## FEATURES

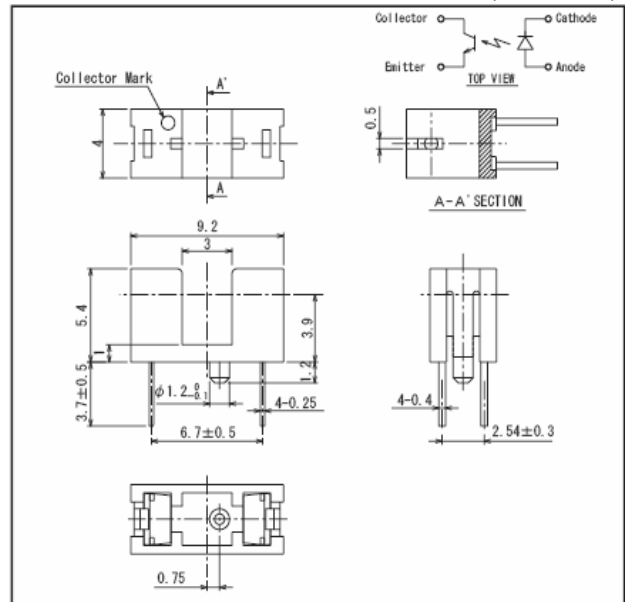
- PWB direct mount type
- GAP : 3.0mm
- Compact/High performance
- With the installation positioning boss

## APPLICATIONS

- Printers
- Facsimiles
- Car stereo
- Card readers/writers

## DIMENSIONS

(Unit : mm)



## MAXIMUM RATINGS

(Ta=25°C)

Item		Symbol	Rating	Unit
Input	Power dissipation	$P_D$	75	mW
	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	5	V
	Pulse forward current *1	$I_{FP}$	1	A
Output	Collector power dissipation	$P_C$	75	mW
	Collector current	$I_C$	20	mA
	Collector-Emitter voltage	$V_{CEO}$	30	V
	Emitter-Collector voltage	$V_{ECO}$	5	V
Operating temp. *2		$T_{opr.}$	-20 ~ +85	°C
Storage temp. *2		$T_{stg.}$	-30 ~ +85	°C
Soldering temp. *3		$T_{sol.}$	260	°C

\*1. Pulse width :  $t_w \leq 100\mu s$ , period  $T=10ms$ 

\*2. No icebound or dew      \*3. For MAX. 5 seconds at the position of 1mm from the resin edge.

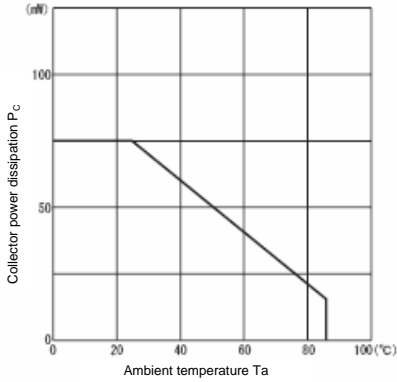
## ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

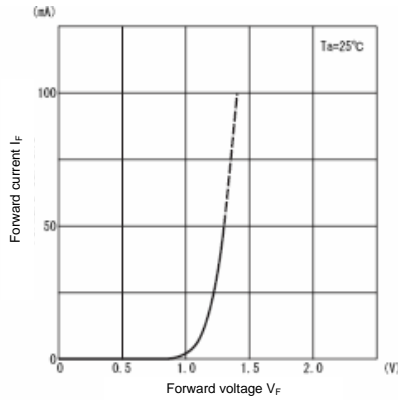
Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	$V_F$	$I_F=20mA$	-	1.2	1.4	V
	Reverse current	$I_R$	$V_R=5V$	-	-	10	$\mu A$
	Peak wavelength	$\lambda_p$	$I_F=20mA$	-	940	-	nm
Output	Collector dark current	$I_{CEO}$	$V_{CE}=10V, 0lx$	-	1	100	nA
Trans- mission	Light current	$I_C$	$I_F=20mA, V_{CE}=5V$ (Non-Shading)	0.7	-	14	mA
	Leakage current	$I_{CEOD}$	$I_F=20mA, V_{CE}=5V$ (Shading)	-	0.5	10	$\mu A$
	C-E saturation voltage	$V_{CE(sat)}$	$I_F=20mA, I_C=0.1mA$	-	0.15	0.4	V
Rise time		$t_r$	$V_{CC}=5V, I_C=2mA, R_L=100\Omega$	-	4	-	$\mu s$
Fall time		$t_f$		-	5	-	$\mu s$

# SG278

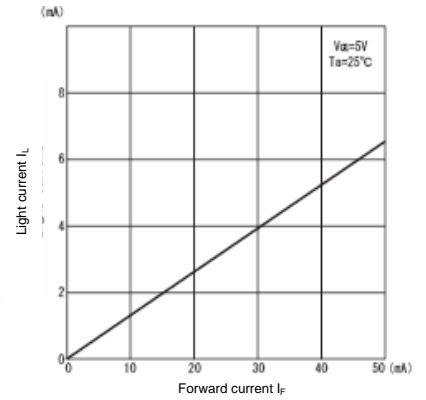
**Collector power dissipation Vs. Ambient temperature**



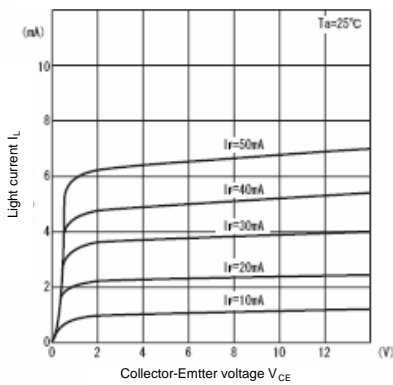
**Forward current Vs. Forward voltage**



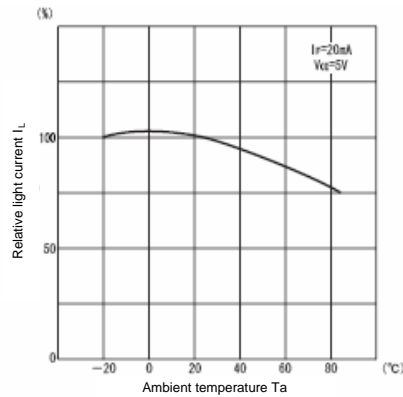
**Light current Vs. Forward current**



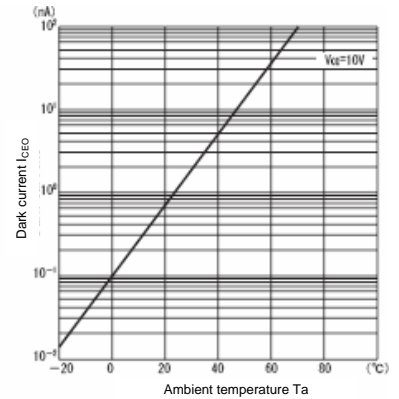
**Light current Vs. Collector-Emitter voltage**



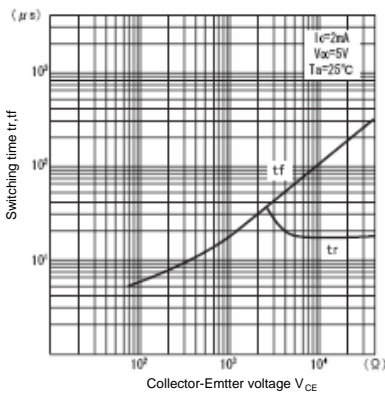
**Relative light current Vs. Ambient temperature**



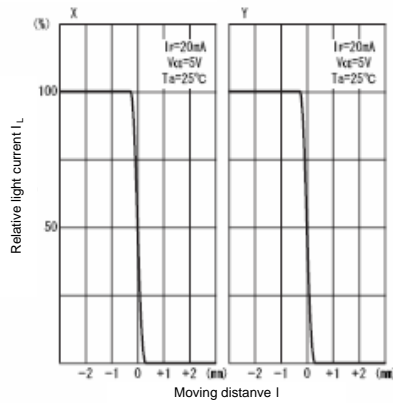
**Dark current Vs. Ambient temperature**



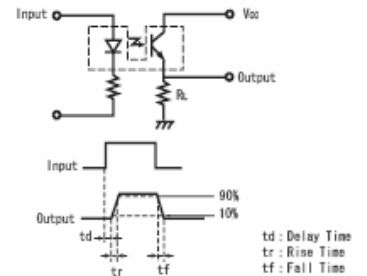
**Switching time Vs. Load resistance \*1**



**Relative light current Vs. Moving distance \*2**



\*1 Switching time measurement circuit



\*2 Method of measuring position detection characteristic

