

SG - 257

The SG 257 photointerrupter high – performance standard type, combines high – output GaAs IRED with high sensitive phototransistor.

FEATURES

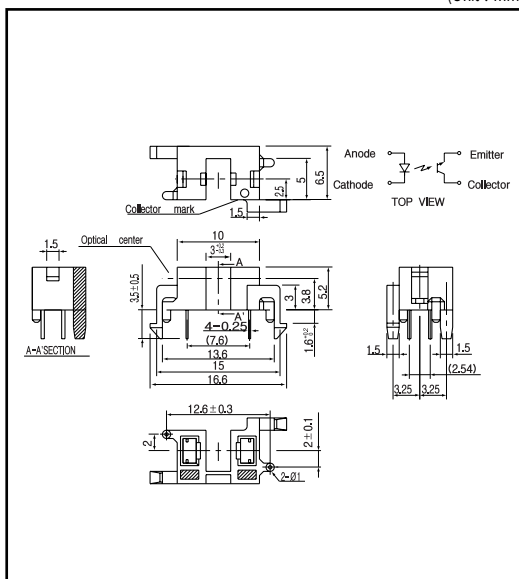
- PWB direct mount type
- GAP : 3.0mm
- Snap-in mount
- Horizontal slit
- Convenient for vertical lever operation

APPLICATIONS

- Mouses
- Rotary encoders
- Facsimiles
- Scanners

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
	C - E voltage	V_{CEO}	30	V
	E - C 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 : $t_w \leq 100 \mu\text{sec}$. period : $T = 10\text{msec}$.

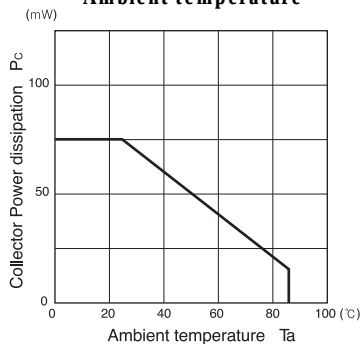
*2. No icebound or dew *3. For MAX.5 seconds at the position of 1mm from the package

ELECTRO-OPTICAL CHARACTERISTICS

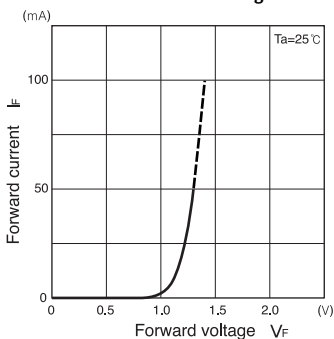
($T_a = 25^\circ\text{C}$)

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V_F	$I_F = 20\text{mA}$		1.2	1.4	V
	Reverse current	I_R	$V_R = 5\text{V}$			10	μA
	Peak wavelength	λ_p	$I_F = 20\text{mA}$		940		nm
Output	Collector dark current	I_{CEO}	$V_{CE} = 10\text{V}$		1	100	nA
	Light current	I_C	$I_F = 20\text{mA}, V_E = 5\text{V}$ (Non-shading)	0.7		14	mA
Transmissi	leakage current	I_{CEDD}	$I_F = 20\text{mA}, V_E = 5\text{V}$ (shading)		0.5	10	μA
	C - E saturation voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 0.3\text{mA}$		0.15	0.4	V
	Rise time	t_r	$V_{CC} = 5\text{V}, I_C = 2\text{mA}, R = 100\Omega$		4		$\mu\text{sec.}$
	Fall time	t_f			5		$\mu\text{sec.}$

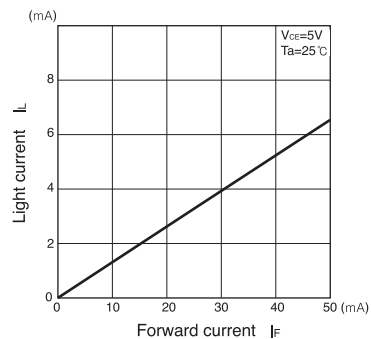
Collector power dissipation Vs. Ambient temperature



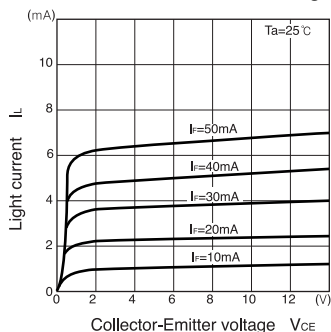
Forward current Vs. Forward voltage



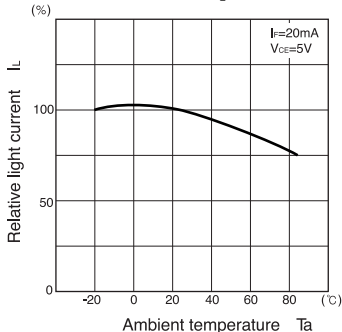
Light current Vs. Forward current



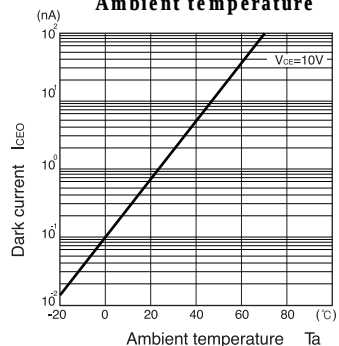
Light current Vs. Collector-Emitter voltage



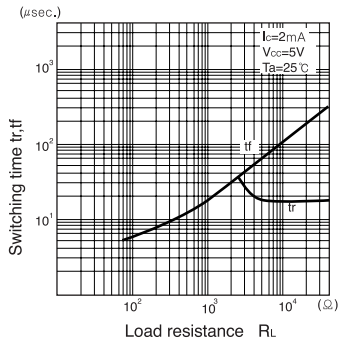
Relative light current Vs. Ambient temperature



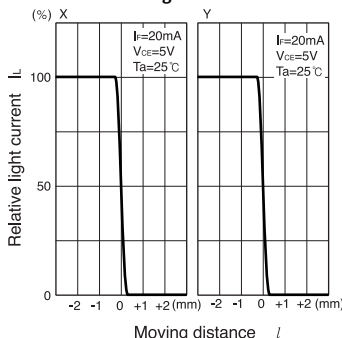
Dark current Vs. Ambient temperature



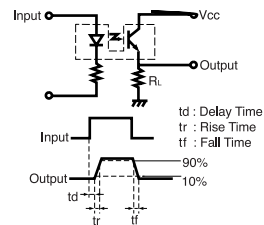
Switching time Vs. Load resistance



Relative light current Vs. Moving distance



Switching time measurement circuit



Method of measuring position detection characteristic

