

# SG 211V

The SG-211V photointerrupter high-performance standard type, combines high-output GaAs IRED with high sensitive phototransistor. Compact size.

### FEATURES

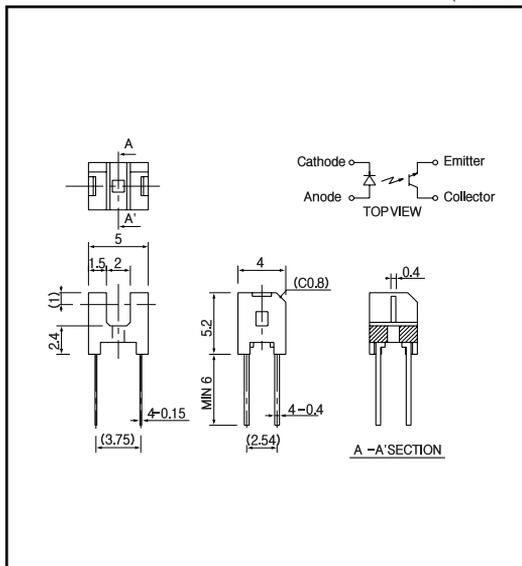
- PWB direct mount type
- GAP : 2.0mm
- Compact
- Low cost

### APPLICATIONS

- Floppy disk drives
- CD-ROM drives
- Printers
- Facsimiles
- Cameras

### 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 <sup>*1</sup>	$I_{FP}$	0.5	A
Output	Collector power dissipation	$P_C$	75	mW
	Collector current	$I_C$	20	mA
	C - E voltage	$V_{CE0}$	30	V
	E - C voltage	$V_{ECO}$	5	V
	Operating temp. <sup>*2</sup>	$T_{opr.}$	- 20 ~ + 85	
	Storage temp. <sup>*2</sup>	$T_{stg.}$	- 30 ~ + 100	
	Soldering temp. <sup>*3</sup>	$T_{sol.}$	260	

\*1. t w 100 μsec. period : T=10msec. \*2. No icebound or dew

\*3. For MAX. 5 seconds at the position of 2mm from the package

### ELECTRO-OPTICAL CHARACTERISTICS

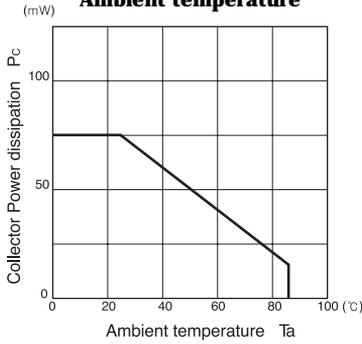
(Ta=25 °C)

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	μA
	Peak wavelength	$\lambda_p$	$I_F=20mA$		940	nm
Output	Collector dark current	$I_{CE0}$	$V_{CE}=10V$	1	100	nA
	Light current	$I_C$	$I_F=10mA, V_E=5V, (Nonshading)$	0.25		1.2
Transmission	leakage current	$I_{CEOD}$	$I_F=10mA, V_E=5V, (shading)$	0.5	10	μA
	C - E saturation voltage	$V_{CE(sat)}$	$I_F=10mA, I_C=0.03mA$	0.15	0.4	V
	Rise time	$t_r$	$V_{CC}=5V, I_C=0.1mA, R=1k$		50	150
Fall time	$t_f$			50	150	μsec.

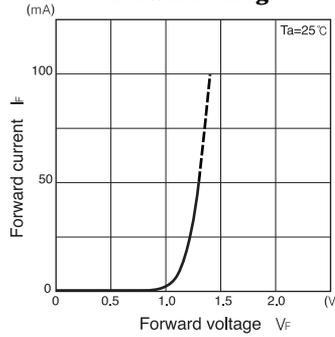
Photo interrupters(Transmissive)

SG 211V

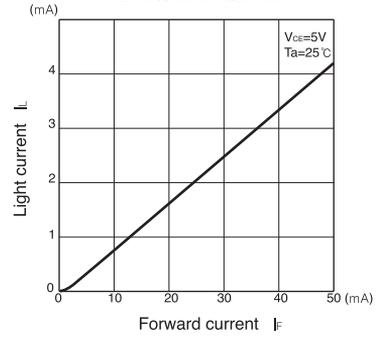
**Collector power dissipation Vs. Ambient temperature**



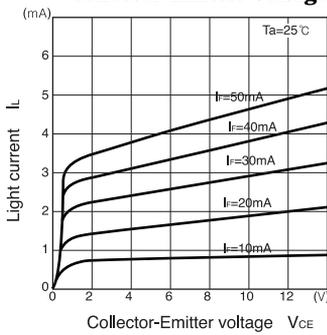
**Forward current Vs. Forward voltage**



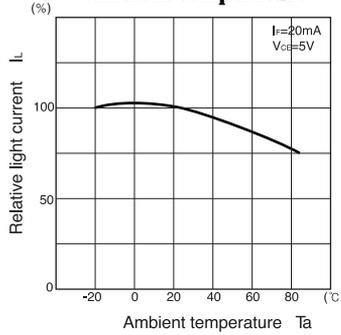
**Light current Vs. Forward current**



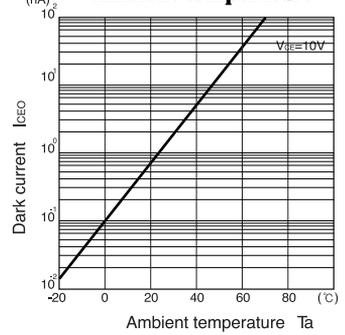
**Light current Vs. Collector-Emitter voltage**



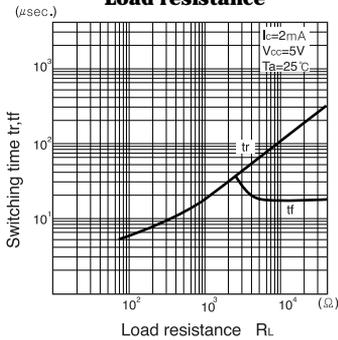
**Relative light current Vs. Ambient temperature**



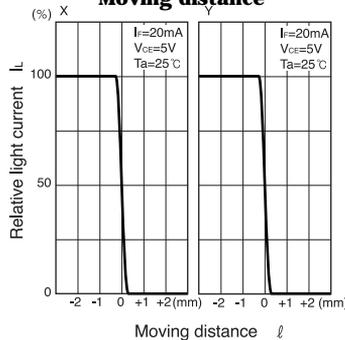
**Dark current Vs. Ambient temperature**



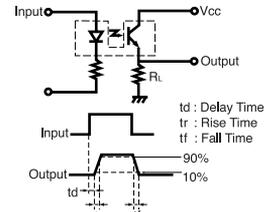
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



Switching time measurement circuit



Method of measuring position detection characteristic

