Technical Data Sheet

Opto Interrupter SGM9908

■ Features

- Fast response time
- High analytic
- Peak wavelength λp=940nm
- High sensitivity
- Pb free

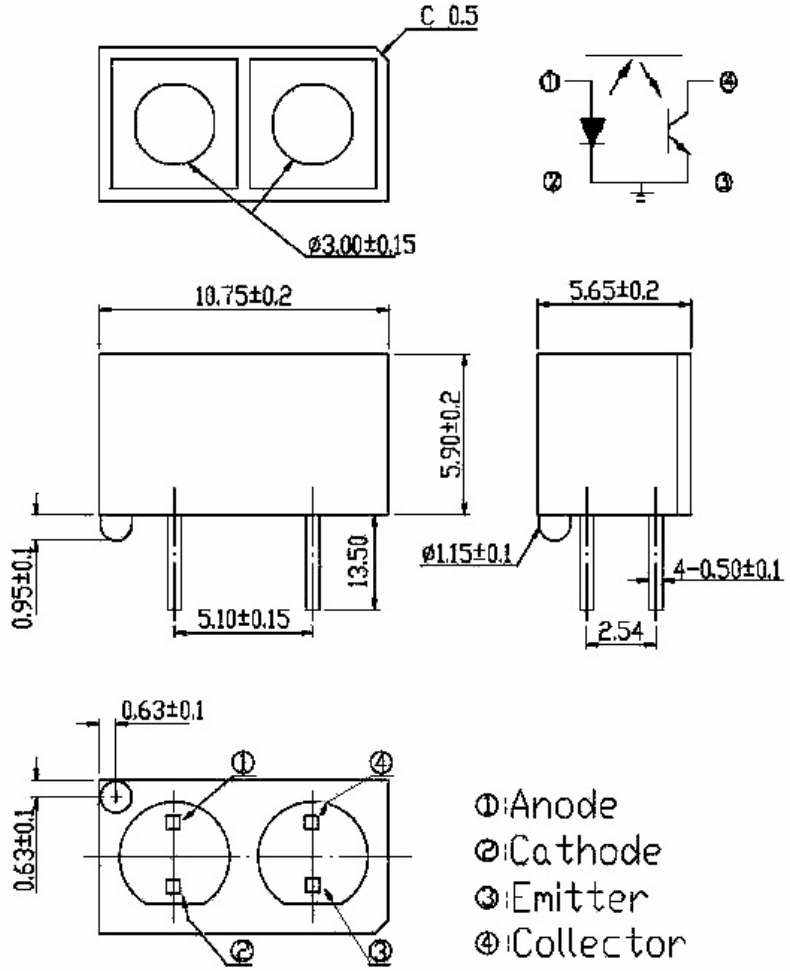
■ Descriptions

The SGM9908 consist of an infrared emitting diode and an NPN silicon phototransistor,encased side-by-side on converging optical axis in a black thermoplastic housing .The phototransistor does not receive radiation from IR LED in normal situation, but when an object comes closer, the radiation is reflected by the object and phototransistor receives the more radiation as closer the object comes.

■ **Applications**

- Non-contact Switching
- Switch Scanner
- For Direct Board
- Floppy disk driver

■ Package Dimensions



■ Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	100	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current (*1) Pulse width ≤100 μs, Duty cycle=1%	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	100	mW
	Collector Current	I_C	50	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+100	℃
Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds)		Tsol	260	℃

(＊1) tw=100 μsec., T=10 msec. (＊2) t=5 Sec

Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V_{F1}	---	1.2	1.5	V	I_F=20mA
		V_{F2}	---	1.4	1.85		I_F=100mA,tp=100μs,tp/T=0.01
		V_{F3}	---	2.6	4.0		I_F=1A,tp=100μs,tp/T=0.01
	Reverse Current	I_R	---	---	10	μA	V_R=5V
	Peak Wavelength	λ_P	---	940	---	nm	I_F=20mA
	View Angle	2θ1/2	---	60	---	Deg	I_F=20mA
Output	Dark Current	I_{CEO}	---	---	100	nA	V_{CE}=20V,Ee=0mW/cm^2
	C-E Saturation Voltage	V_{CE}(sat)	---	---	0.4	V	I_C=2mA ,Ee=1mW/cm^2
Transfer Characteristics	Collect Current	I_C(ON)	0.2	---	---	mA	V_{CE}=5V I_F=20mA
	Rise time	t_r	---	15	---	μsec	V_{CE}=5V I_C=1mA R_L=1KΩ
	Fall time	t_f	---	15	---	μsec	

Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs. Ambient Temperature

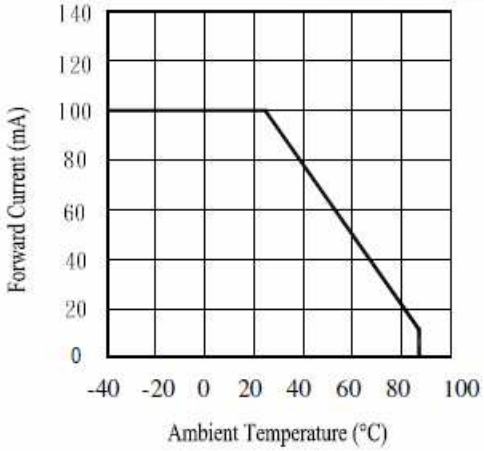


Fig.2 Spectral Distribution

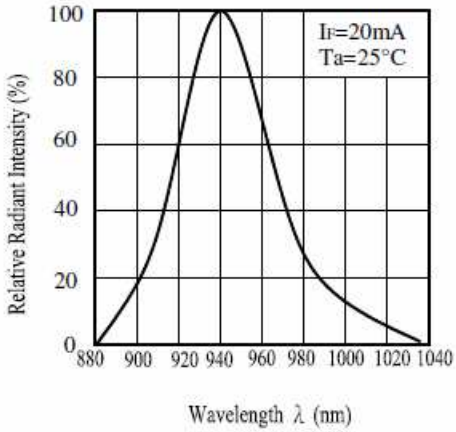


Fig.3 Radiant Intensity vs. Forward Current

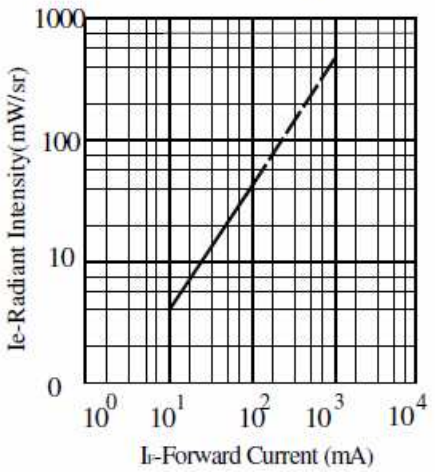


Fig.4 Relative Radiant Intensity vs. Angular Displacement

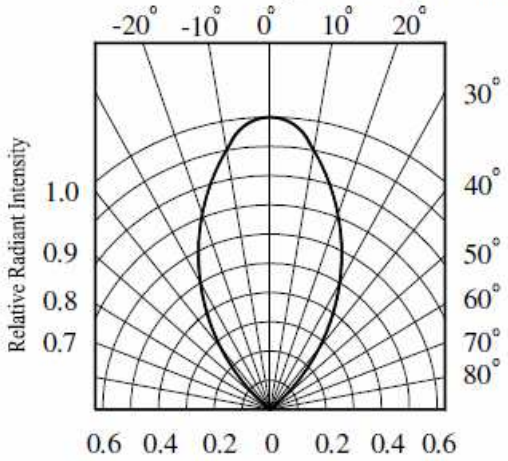


Fig.5 Forward Current vs. Forward Voltage

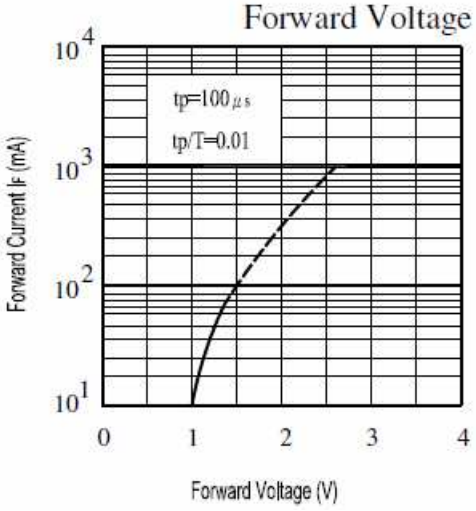
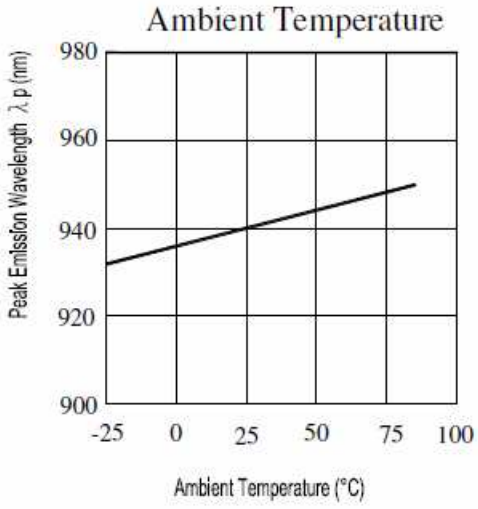


Fig.6 Peak Emission Wavelength Ambient Temperature



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1 Collector Power Dissipation vs. Ambient Temperature

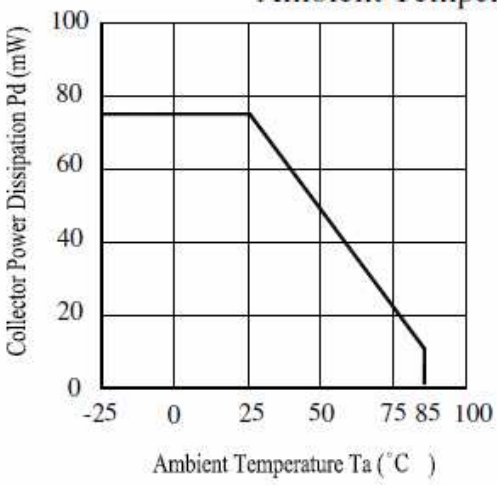


Fig.2 Spectral Sensitivity

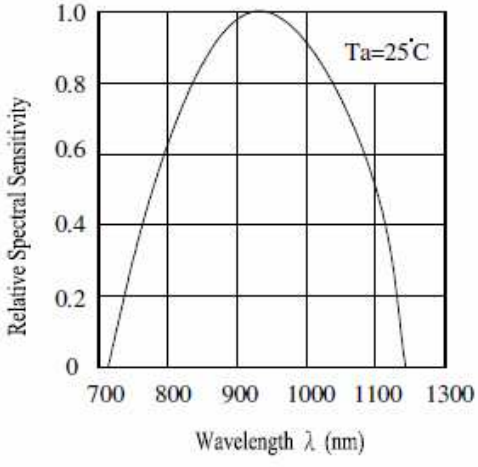


Fig.3 Relative Collector Current vs.. Ambient Temperature

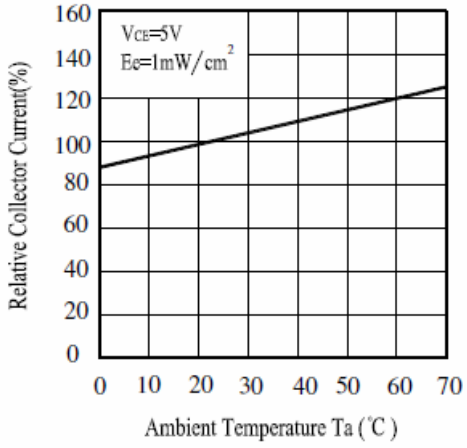


Fig.4 Collector Current vs. Irradiance

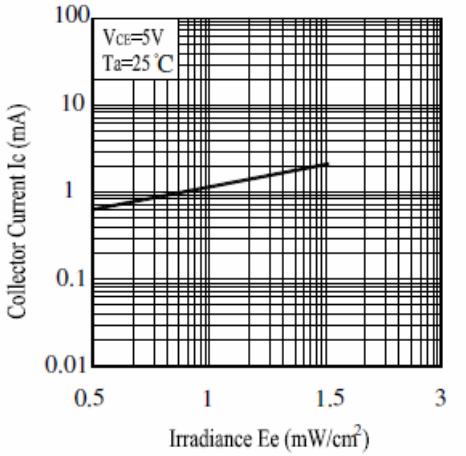


Fig.5 Collector Dark Current vs. Ambient Temperature

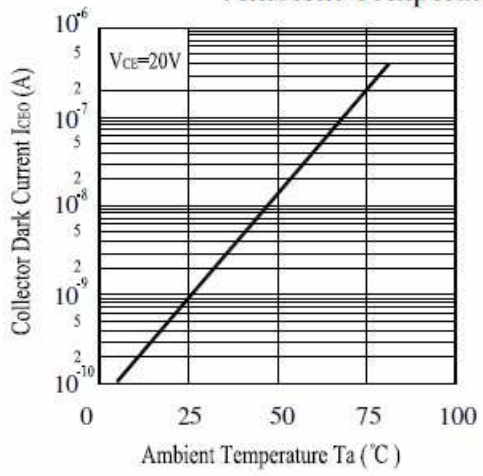
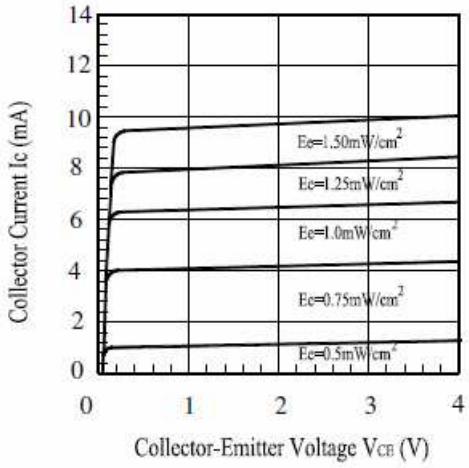


Fig.6 Collector Current vs. Collector-Emitter Voltage



■ Packing Quantity Specification

1. 100PCS/1Bag

■ Notes

1. Above specification may be changed without notice. SHUGUAN will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. SHUGUAN assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
3. These specification sheets include materials protected under copyright of SHUGUAN corporation. Please don't reproduce or cause anyone to reproduce them without SHUGUAN's consent.