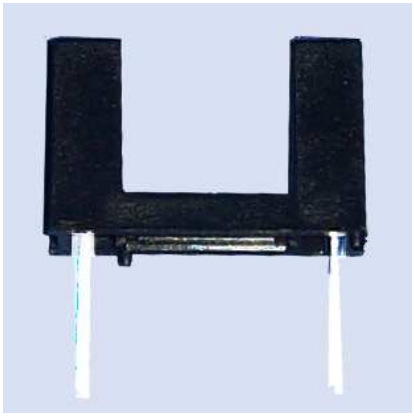
Technical Data Sheet
Opto Interrupter SGM2010

■ Features



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

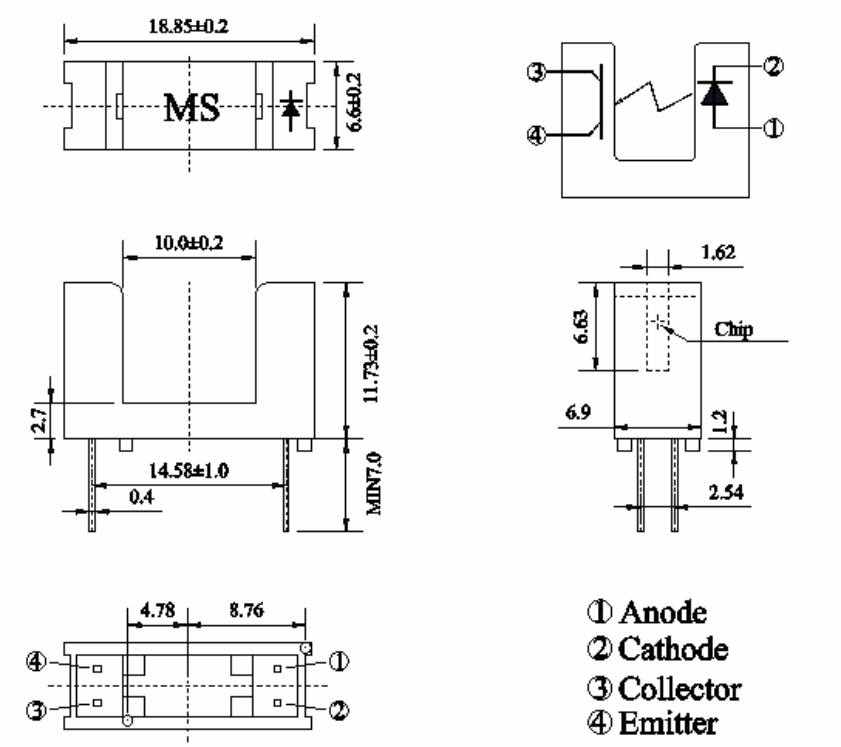
■ Descriptions

The SGM2010 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 receives radiation from the IR LED only. This is the normal situation. But when an object is in between , phototransistor could not receives the radiation.

■ **Applications**

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

■ Package Dimensions



Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ±0.2mm
3. Lead spacing is measured where the lead emerge from the package

■ Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	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	Pd	75	mW
	Collector Current	I_C	20	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~+85	℃
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_F	---	1.2	1.5	V	I_F=20mA
	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 C urrent	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)	0.5	---	10	mA	V_{CE}=5V I_F=20mA
		Ic(OFF)	---	---	20	μA	
	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

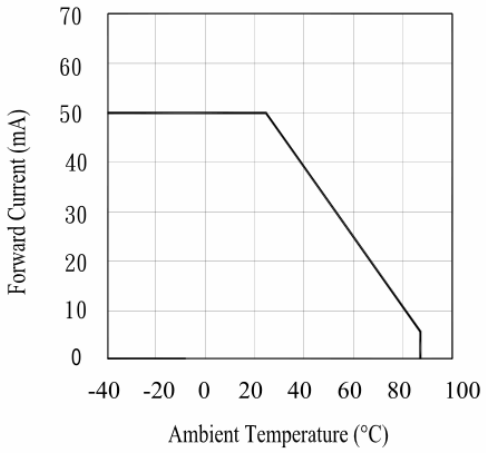


Fig.2 Spectral Distribution

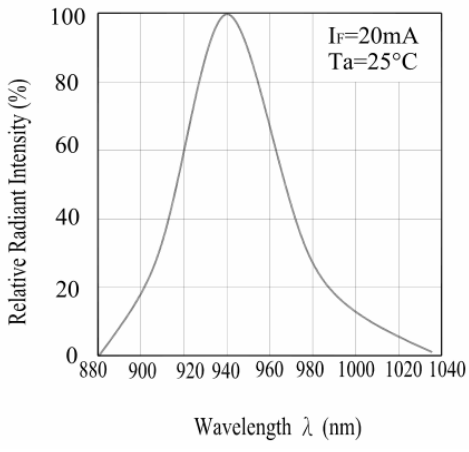


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

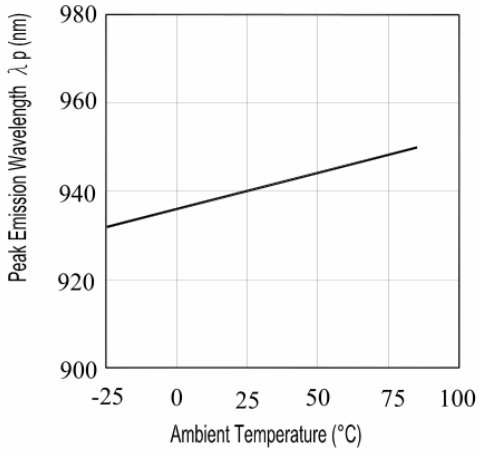


Fig.4 Forward Current vs. Forward Voltage

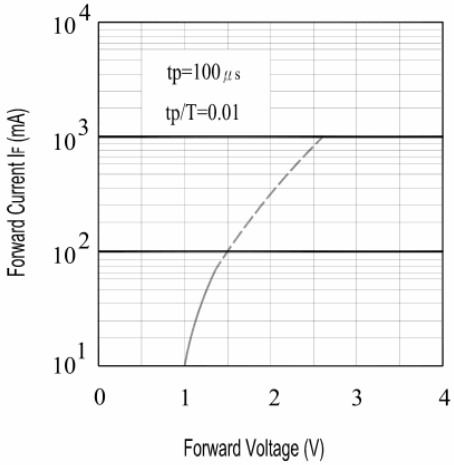


Fig.5 Forward Current vs Ambient Temperature(°C)

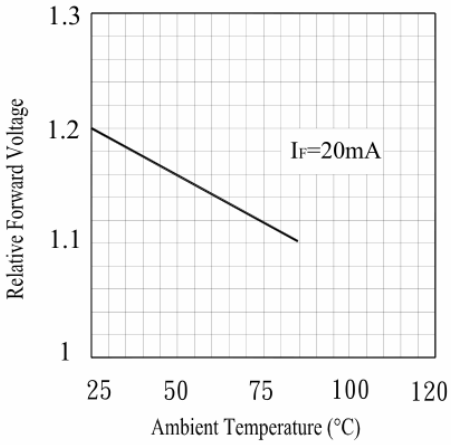
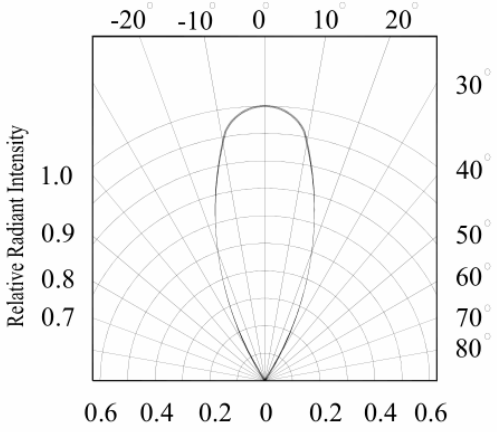


Fig.6 Relative Radiant Intensity vs. Angular Displacement



Typical Electrical/Optical/Characteristics Curves for PT

Fig.1Collector Power Dissipation vs. Ambient Temperature

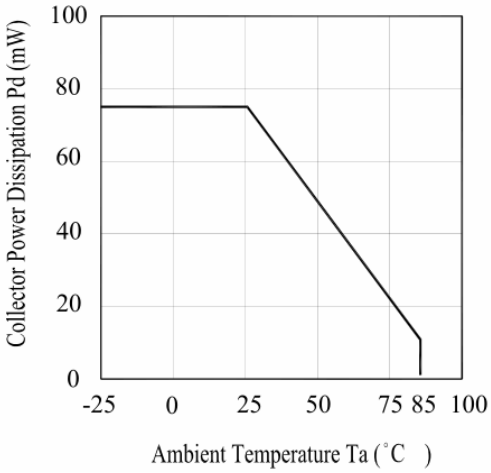


Fig.2 Spectral Sensitivity

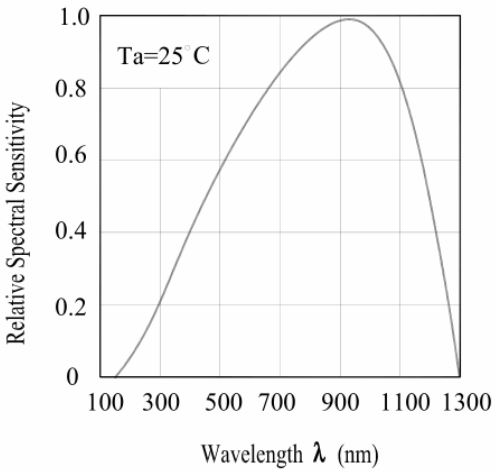


Fig.3 Relative Collector Current vs. Ambient Temperature

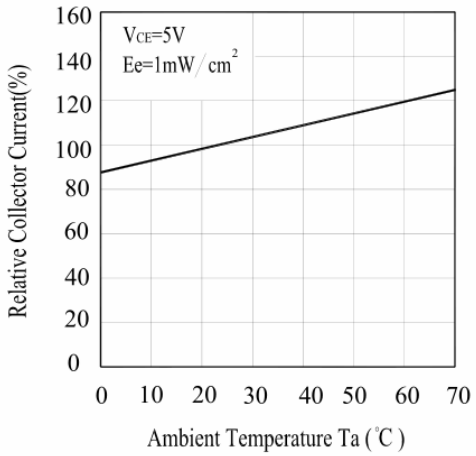


Fig.4 Collector Current vs. Irradiance

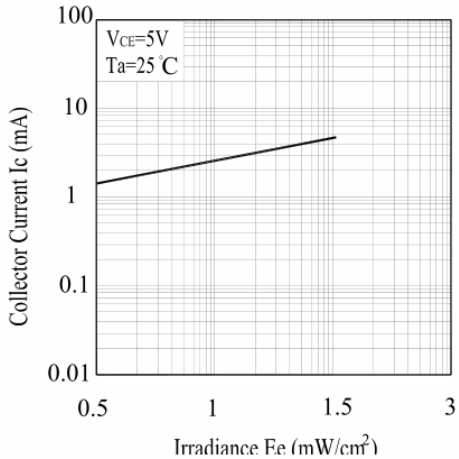


Fig.5 Collector Dark Current vs. Ambient Temperature

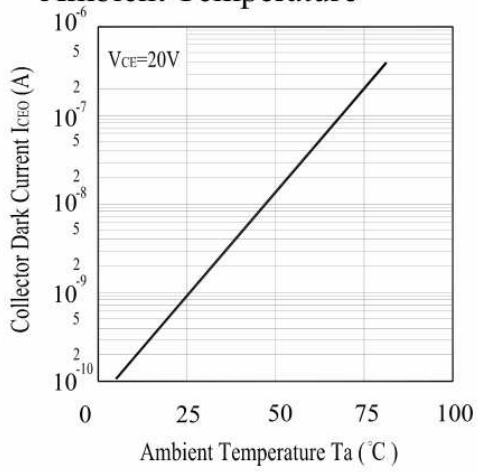
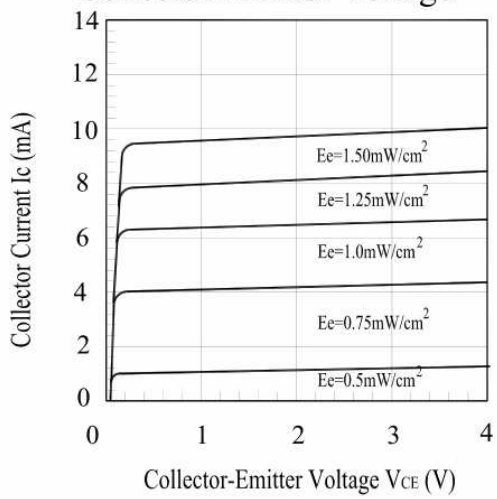


Fig.6 Collector Current vs. Collector-Emitter Voltage



■ 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.
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