GP2S22

Subminiature Photointerrupter

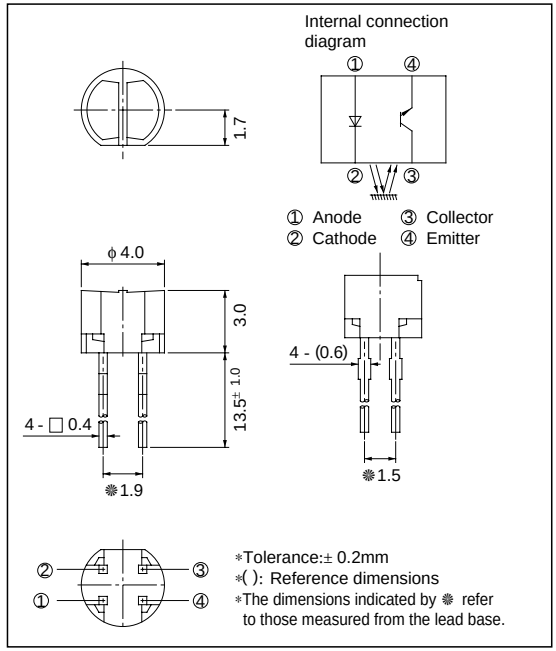
■ Features

1. ϕ 4mm compact resin mold type
2. Focal distanse: 0.6mm
3. Visible light cut-off type

■ Applications

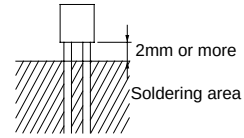
1. Audio equipment
2. VCRs

■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings (Ta = 25˚C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	20	mA
	Collector power dissipation	P_C	75	mW
Total power dissipation		P_{tot}	100	mW
Operating temperature		T_{opr}	- 25 to + 85	˚C
Storage temperature		T_{stg}	- 40 to + 100	˚C
∗1 Soldering temperature		T_{sol}	260	˚C



∗1 For 3 seconds by manual soldering

■ Electro-optical Characteristics

(Ta = 25˚C)

Parameter			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 = 6V	-	-	10	μA
Output	Collector dark current		I_{CEO}	V_{CE} = 20V, I_F = 0	-	10^{-9}	10^{-7}	A
Transfer characteristics	*2Collector current		I_C	V_{CE} = 2V, I_F = 4mA	20	-	125	μA
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 100μA	-	20	100	μs
		Fall time	t_f	R_L = 1kΩ, d = 1mm	-	20	100	μs
	*3Leak current		I_{LEAK}	V_{CE} = 2V, I_F = 4mA	-	-	0.1	μA

*2 The condition and arrangement of the reflective object are shown in the following drawing.
*3 Without reflective object

The ranking of collector current shall be classified into the following 6 ranks.

Rank	I_C (μA)
A	58 to 125
B	34 to 71
C	20 to 42
A or B	34 to 125
B or C	20 to 71
A, B or C	20 to 125

Test Condition and Arrangement for Collector Current

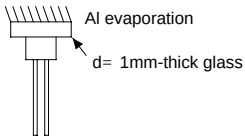


Fig. 1 Forward Current vs. Ambient Temperature

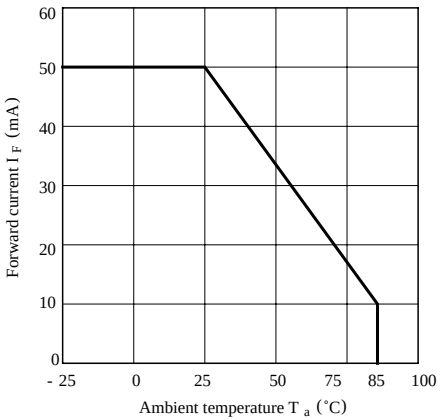


Fig. 2 Power Dissipation vs. Ambient Temperature

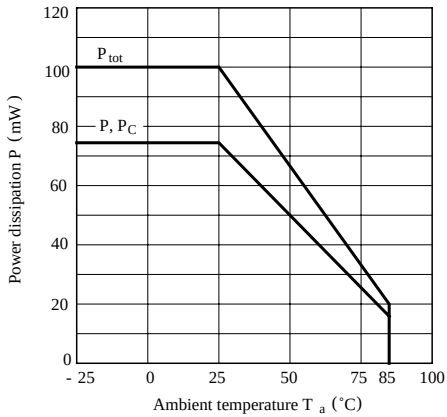


Fig.3 Forward Current vs. Forward Voltage

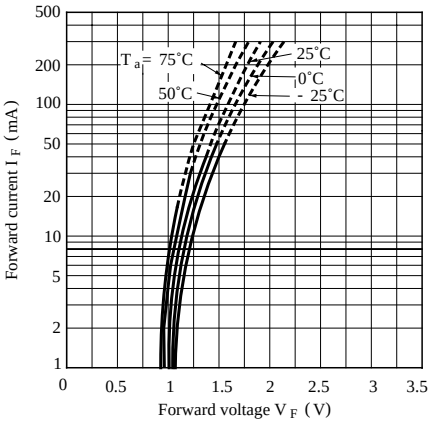


Fig.4 Collector Current vs. Forward Current

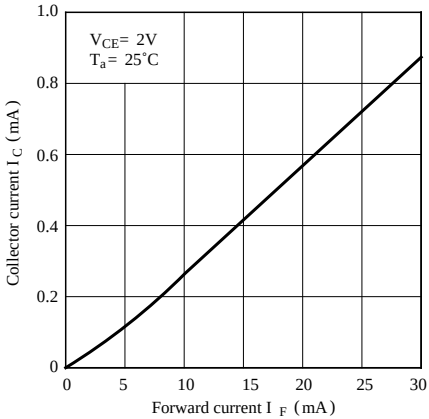


Fig. 5 Collector Current vs. Collector-emitter Voltage

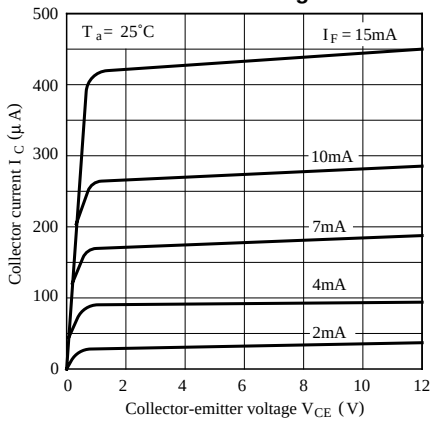


Fig. 6 Collector Current vs. Ambient Temperature

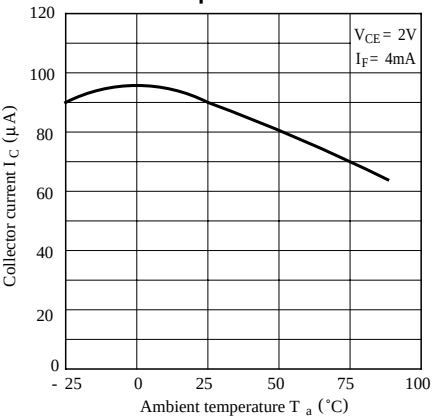


Fig. 7 Collector Dark Current vs. Ambient Temperature

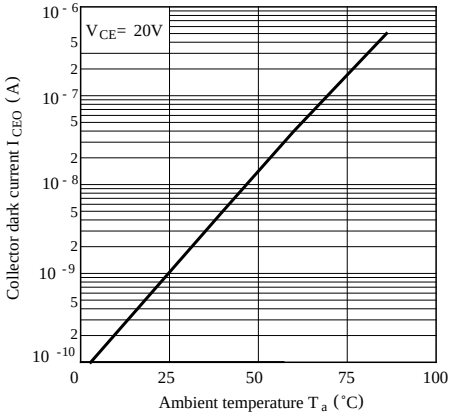
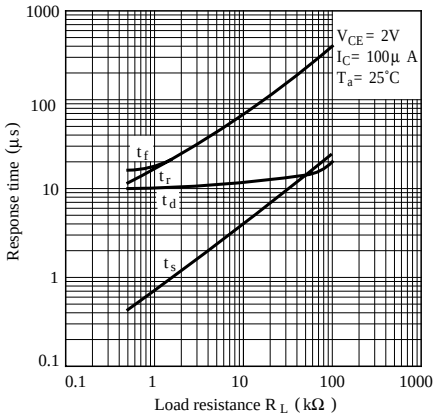


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response Time

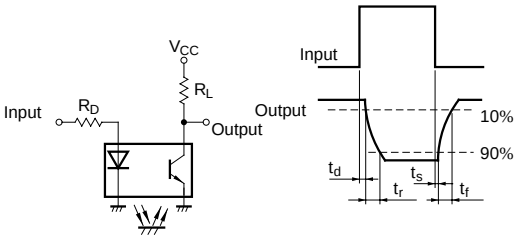
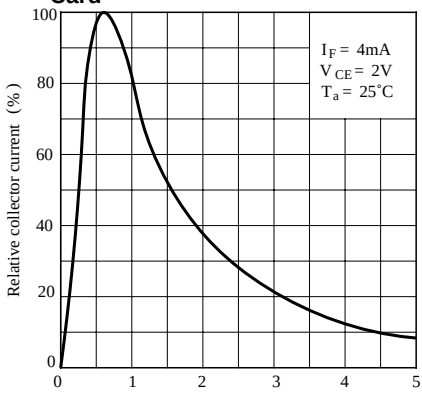
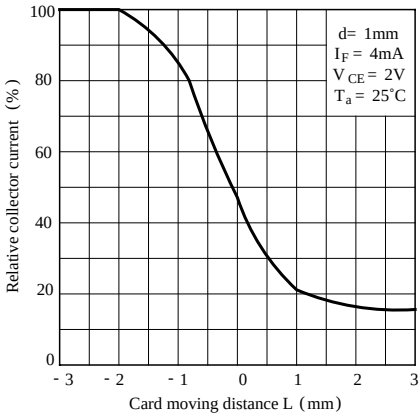


Fig. 9 Relative Collector Current vs. Distance between GP2S22 and Card

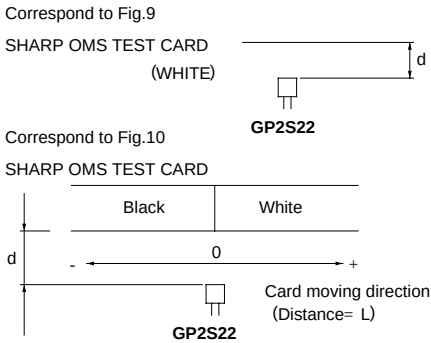


Distance between **GP2S22** and test card d (mm)

Fig.10 Relative Collector Current vs. Card Moving Distance



Distance Characteristics Test Condition



■ Precautions for Use

(1) Perform soldering manually

(2) Please refrain from soldering under preheating and refrain from soldering by reflow.

(3) As for other general cautions, refer to the chapter "Precautions for Use".

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