GP2S40

Long Focal Distance, Subminiature Photointerrupter

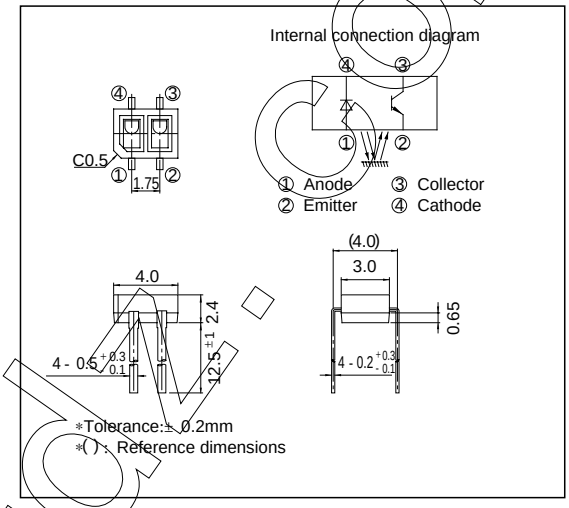
■ Features

1. Ultra compact DIP package
   (Volume: 1/3 of **GP2S05**)
2. Long focal distance type
   (focal distance: 3mm)
3. Effective detection distance: 1.5 to 6.5mm

■ Applications

1. Copiers
2. Facsimiles
3. Printers

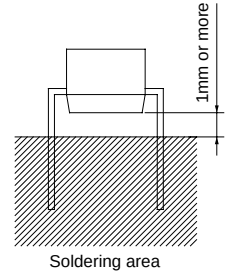
■ Outline Dimensions (Unit: mm)



■ 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_D	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
	*1Soldering temperature	T_{sol}	260	˚C

*1 For 5 seconds



■ Electro-optical Characteristics

(Ta= 25˚C)

Parameter			Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 20mA	-	1.2	1.4	V
	Reverse current		I_R	V_R = 3V	-	-	10	μA
Output	Collector dark current		I_{CEO}	V_{CE} = 20V	-	1	100	nA
Transfer characteristics	Collector current		I_C	V_{CE} = 5V, I_F = 20mA	0.5	-	3.0	mA
	*2Leak current		I_{LEAK}	V_{CE} = 5V, I_F = 20mA	-	-	500	nA
	*3Response time	Rise time	t_r	V_{CE} = 2V, I_C = 100μA	-	50	150	μs
		Fall time	t_f	R_L = 1 000Ω, d= 4mm	-	50	150	μs

*2 No reflective object
*3 "d" is glass thickness of reflective mirror.

Test Arrangement of Collector Current

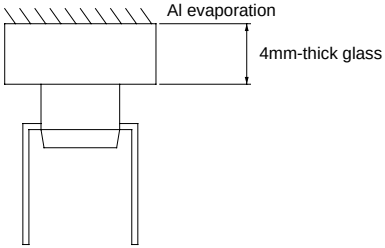


Fig. 1 Forward Current vs. Ambient Temperature

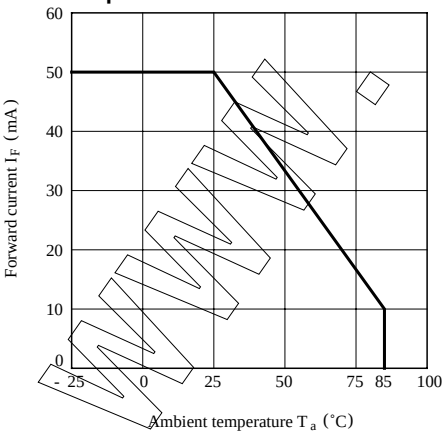


Fig. 2 Power Dissipation vs. Ambient Temperature

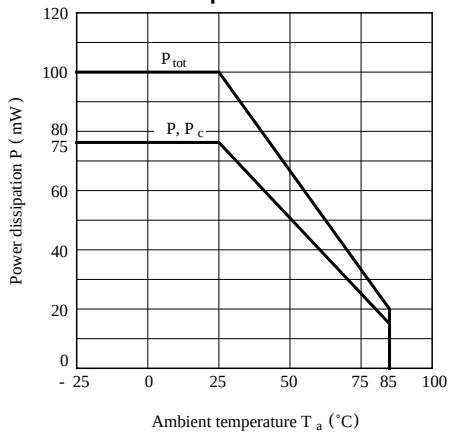


Fig. 3 Forward Current vs. Forward Voltage

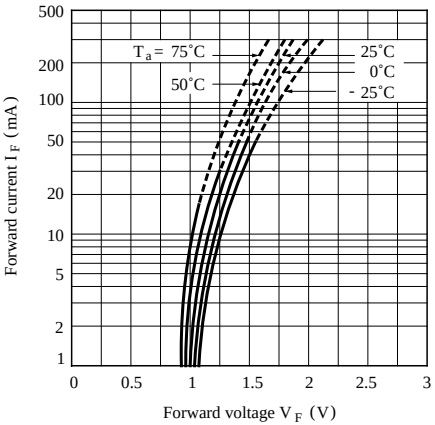


Fig. 4 Collector Current vs. Forward Current

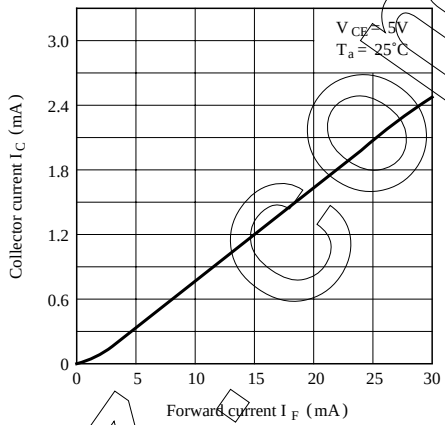


Fig. 5 Collector Current vs. Collector-emitter Voltage

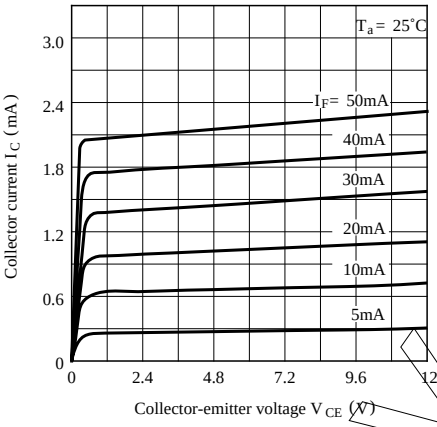


Fig. 6 Relative Collector Current vs. Ambient Temperature

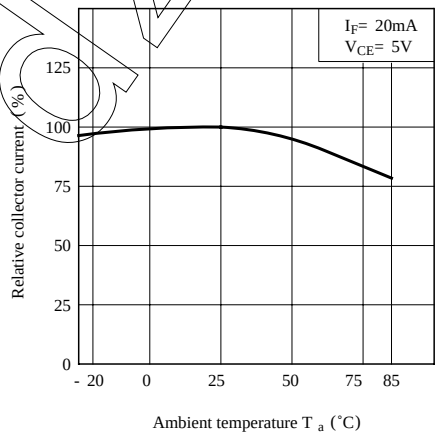


Fig. 7 Collector Dark Current vs. Ambient Temperature

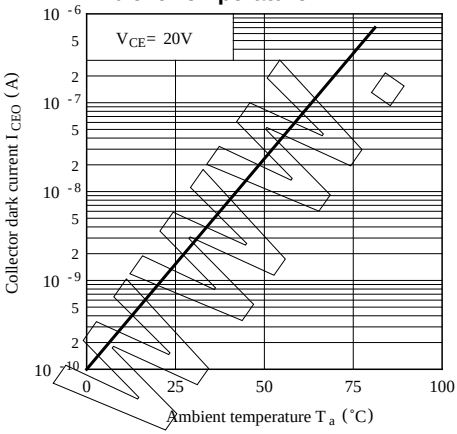
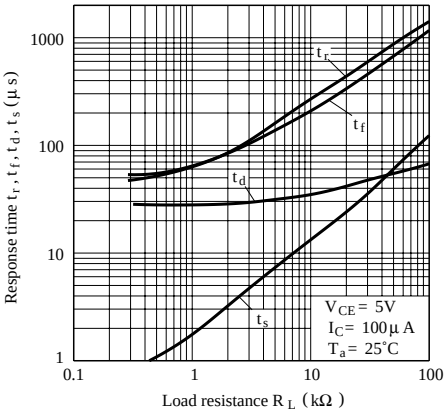


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response Time

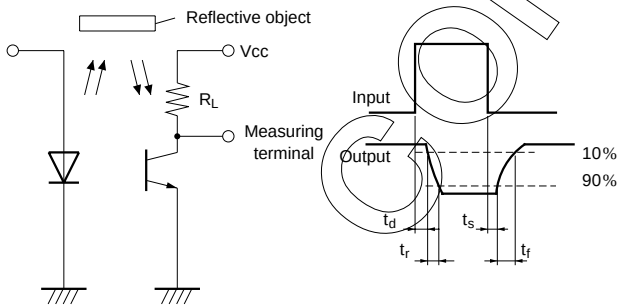


Fig. 9 Relative Collector Current vs. Sensor moving Distance (1)

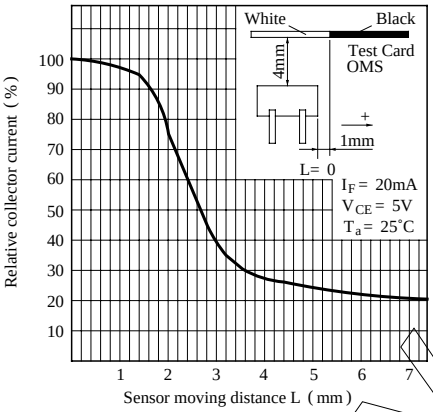


Fig.10 Relative Collector Current vs. Sensor moving Distance (2)

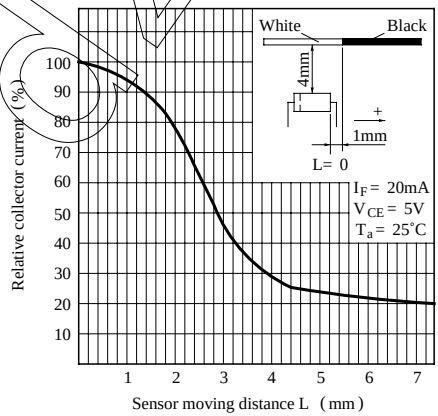
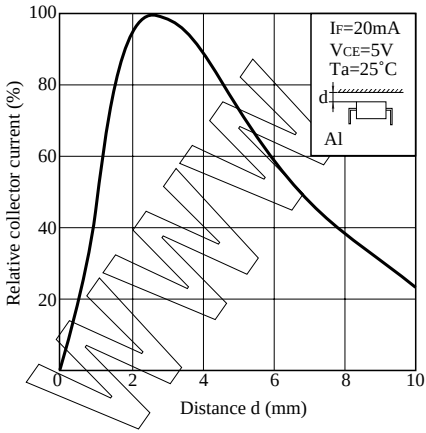


Fig. 11 Relative Collector Current vs. Distance



- Please refer to the chapter "Precautions for Use".

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