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GP2S03

Long Focal Distance Type Photointerrupter

■ Features

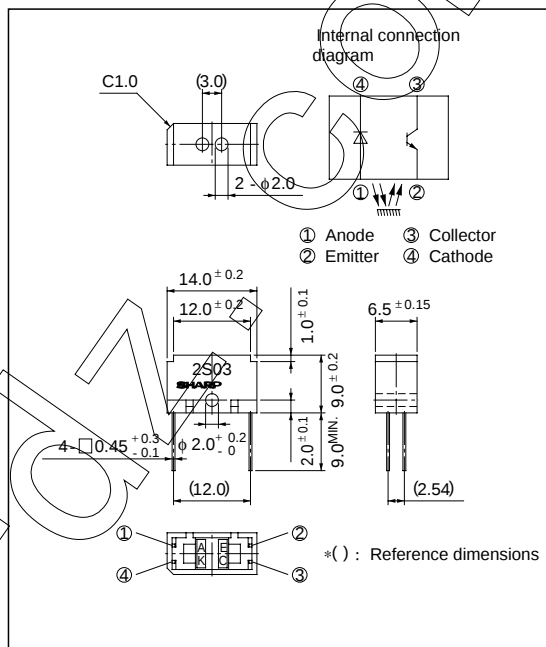
1. Long focal distance (4mm)
2. Visible light cut-off type

■ Applications

1. Analyzers, measuring instruments
2. Copiers, printers
3. Optoelectronic switches, optoelectronic counters

■ Outline Dimensions

(Unit: mm)



■ Absolute Maximum Ratings

(Ta= 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	50	mA
	*1 Peak forward current	I _{FM}	1	A
	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
	Operating temperature	T _{opr}	- 25 to + 85	°C
	Storage temperature	T _{stg}	- 40 to + 100	°C
	*2 Soldering temperature	T _{sol}	260	°C

*1 Pulse width ≤ 100 μs, Duty ratio = 0.01

*2 For 5 seconds

■ Electro-optical Characteristics

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V
	Peak forward voltage		V_{FM}	$I_{FM} = 0.5\text{A}$	-	3	4	V
	Reverse current		I_R	$V_R = 3\text{V}$	-	-	10	μA
Output	Collector dark current		I_{CEO}	$V_{CE} = 20\text{V}$	-	10^{-9}	10^{-7}	A
Transfer-characteristics	*3Collector Current		I_C	$I_F = 20\text{mA}, V_{CE} = 5\text{V}$	0.16	-	-	mA
	Response time	Rise time	t_r	$I_C = 200\mu\text{A}, V_{CE} = 2\text{V}, R_L = 1\text{k}\Omega$ $d = 5\text{mm}$	-	30	90	μs
		Fall time	t_f		-	40	120	
	*4Leak current		I_{LEAK}	$I_F = 20\text{mA}, V_{CE} = 5\text{V}$	-	-	10	μA

*3 Test method: A reflective object shall be an OMS test card (white) specified by Sharp, and be 5.0mm away from the sensor.

*4 Without reflective object.

Fig. 1 Forward Current vs. Ambient Temperature

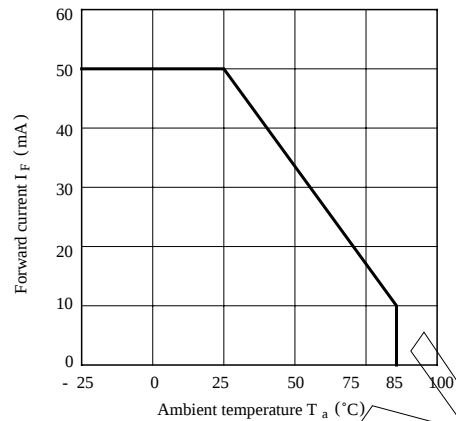


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

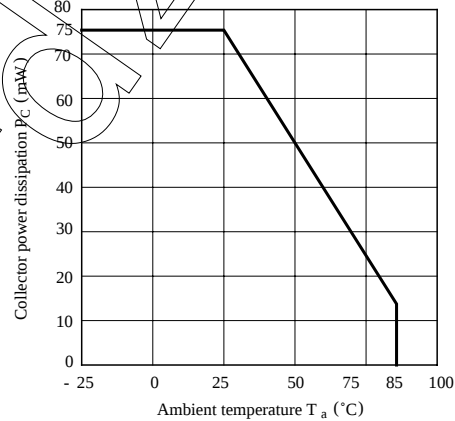


Fig. 3 Peak Forward Current vs. Duty Ratio

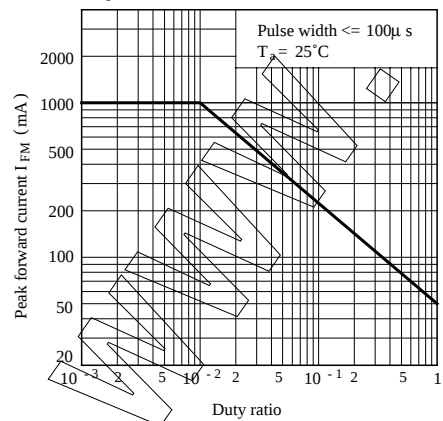


Fig. 4 Forward Current vs. Forward Voltage

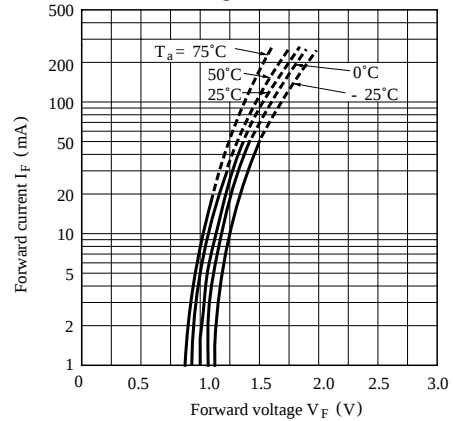


Fig. 5 Collector Current vs. Forward Current

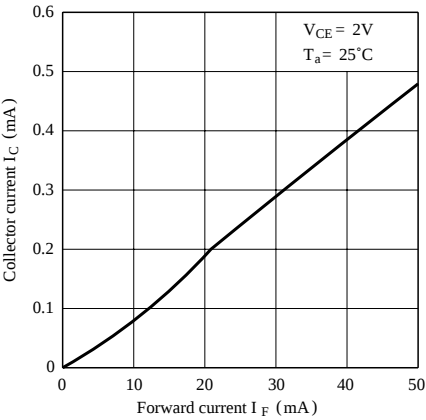


Fig. 6 Collector Current vs. Collector-emitter Voltage

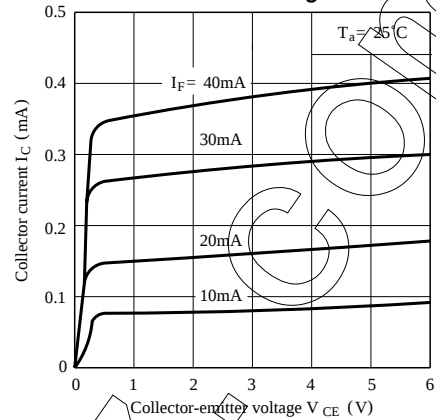
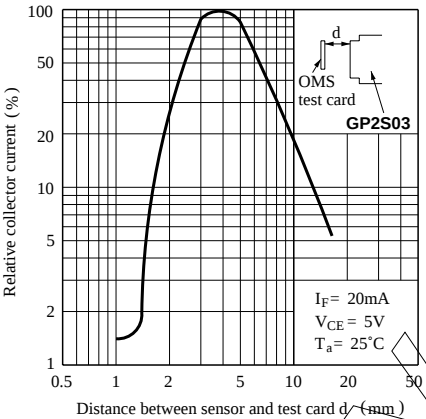


Fig. 7 Relative Collector Current vs. Distance between Sensor and Card



- Please refer to the chapter “Precautions for Use”.