

GP1S563/GP1S566

Long Case, Snap-in Mounting Type Photointerrupter

■ Features

1. Long case type
Case height
(GP1S563 : 20.9mm)
(GP1S566 : 21.9mm)
2. Snap-in mounting type
3. Gap between light emitter and detector : 3.0mm
4. Case width : 5.0mm

■ Applications

1. VCR

■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Input	*1 Forward current	I _F	50 mA
	*1,2 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
	*1 Collector power dissipation	P _C	75 mW
	Operating temperature	T _{opr}	-25 to +85 °C
	Storage temperature	T _{stg}	-40 to +100 °C
	*3 Soldering temperature	T _{sol}	260 °C

*1 The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig.1 to 3

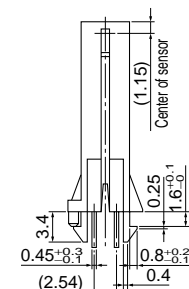
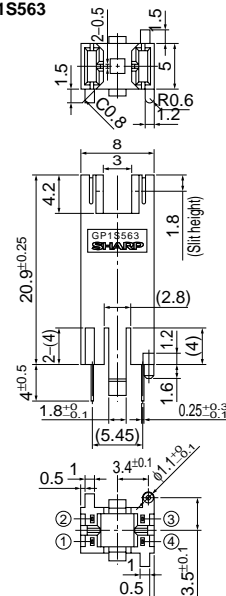
*2 Pulse width ≤ 100μs, Duty ratio : 0.01

*3 For 5s

■ Outline Dimensions

(Unit : mm)

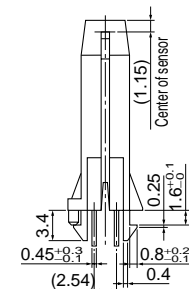
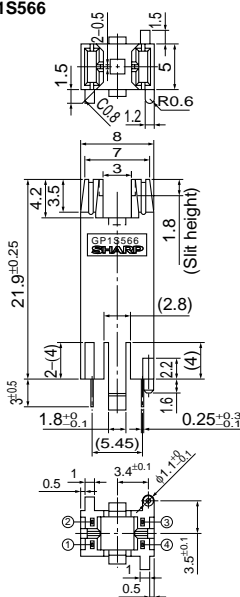
GP1S563



Internal connection diagram

① Anode ③ Collector
② Cathode ④ Emitter

GP1S566



Internal connection diagram

① Anode ③ Collector
② Cathode ④ Emitter

※ Unspecified tolerance : ±0.2mm

※ () : Reference dimensions

■ Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F=20\text{mA}$	—	1.25	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}	$V_{CE}=20\text{V}$	—	1	100	nA
Transfer characteristics	Collector current	GP1S563 I_C	$V_{CE}=5\text{V}, I_F=20\text{mA}$	0.5	—	15	mA
		GP1S566 I_C	$V_{CE}=5\text{V}, I_F=20\text{mA}$	0.5	—	5.0	mA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=40\text{mA}, I_C=0.5\text{mA}$	—	—	0.4	V
	Response time	Rise time t_r	$V_{CE}=2\text{V}, I_C=2\text{mA}, R_L=100\Omega$	—	3	15	μs
		Fall time t_f		—	4	20	μs

Fig.1 Forward Current vs. Ambient Temperature

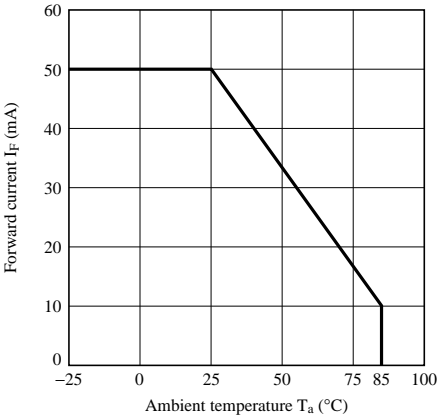


Fig.2 Collector Power Dissipation vs. Ambient Temperature

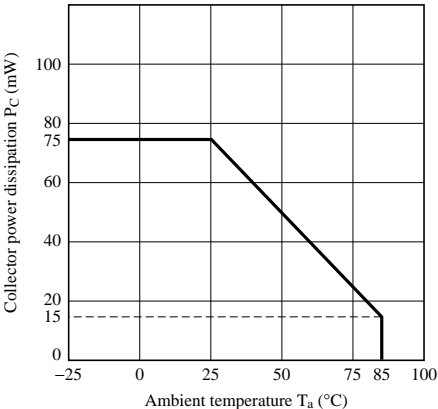


Fig.3 Peak Forward Current vs. Duty Ratio

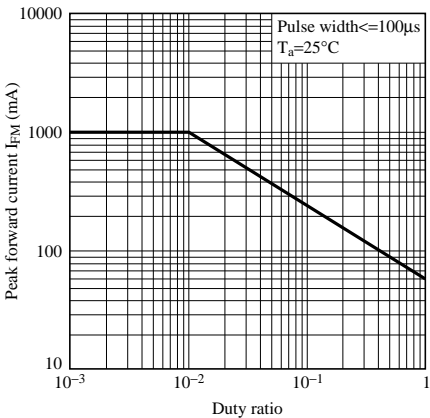


Fig.4 Forward Current vs. Forward Voltage

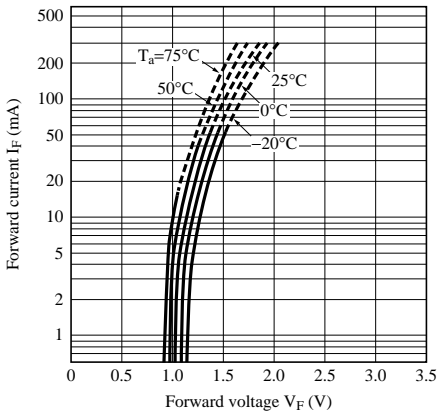


Fig.5 Collector Current vs. Forward Current

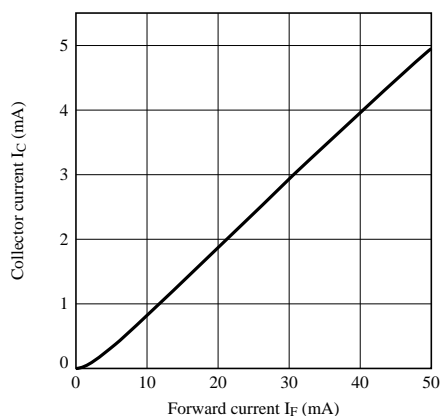


Fig.6 Collector Current vs. Collector-emitter Voltage

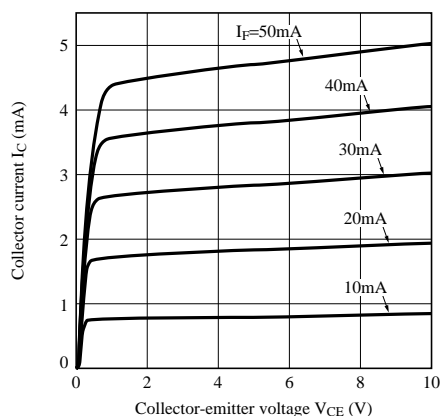


Fig.7 Collector Current vs. Ambient Temperature

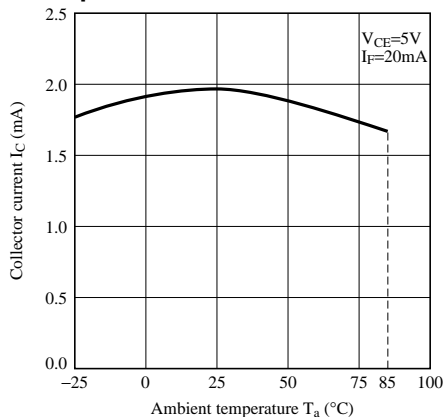


Fig.8 Collector - emitter Saturation Voltage vs. Ambient Temperature

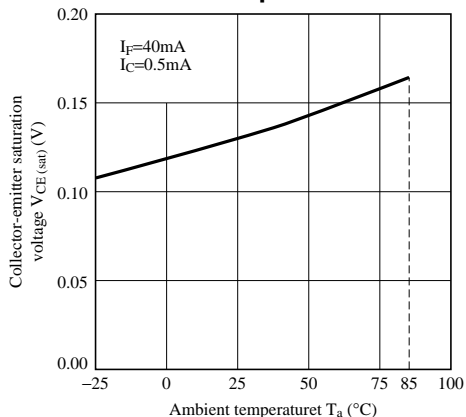


Fig.9 Collector Dark Current vs. Ambient Temperature

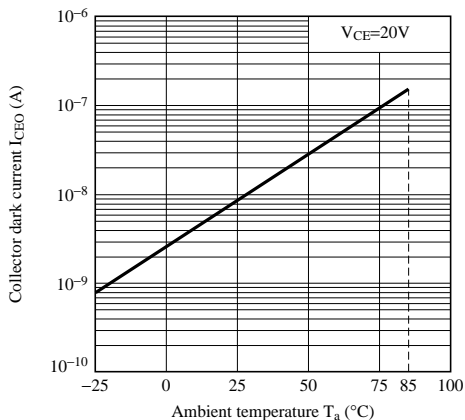


Fig.10 Response Time vs. Forward Current

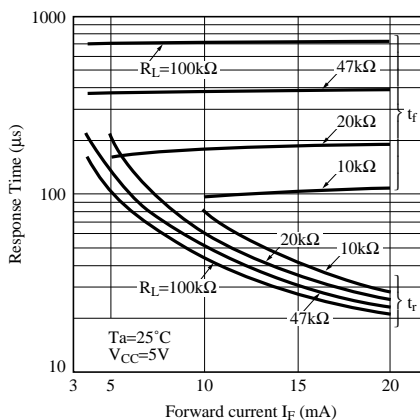


Fig.11 Response Time vs. Ambient Temperature

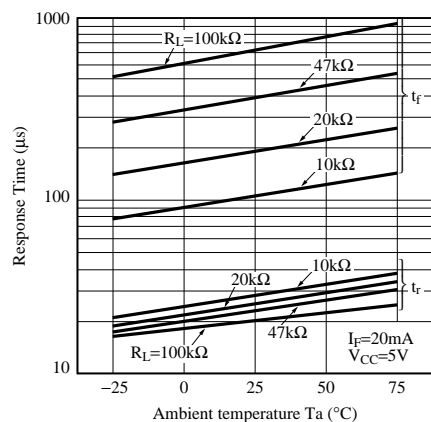


Fig.12 Test Circuit For Response Time

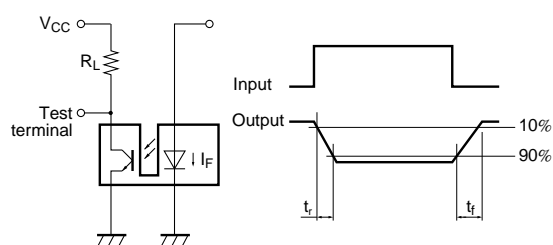


Fig.13 Relative Output Current vs. Moving Distance (Xdirection)

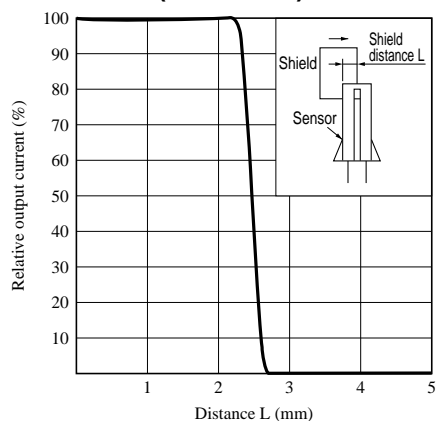
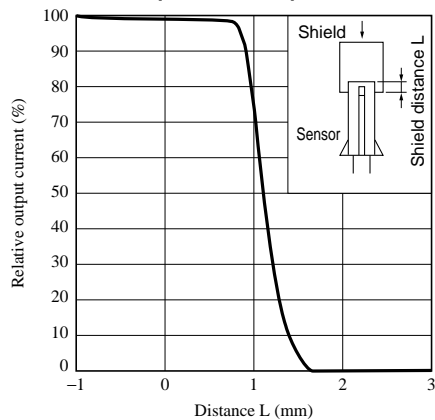


Fig.14 Relative Output Current vs. Moving Distance (Xdirection)



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