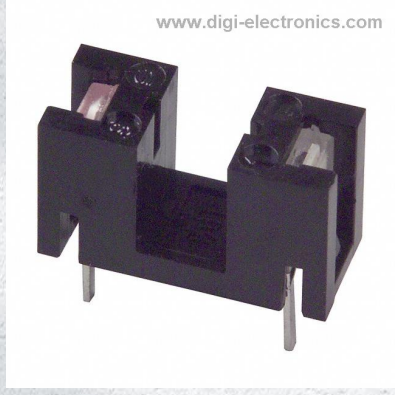
GP1S561 Datasheet



DiGi Electronics Part Number	GP1S561-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	GP1S561
Description	SENSOR OPT SLOT PHOTOTRAN PCB MT
Detailed Description	Optical Sensor Through-Beam 0.118" (3mm) Photo transistor PCB Mount

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Manufacturer Product Number:	Manufacturer:
GP1S561	Sharp Microelectronics
Series:	Product Status:
-	Obsolete
Sensing Distance:	Sensing Method:
0.118" (3mm)	Through-Beam
Output Configuration:	Current - DC Forward (If) (Max):
Phototransistor	50 mA
Current - Collector (Ic) (Max):	Voltage - Collector Emitter Breakdown (Max):
20 mA	35 V
Response Time:	Operating Temperature:
3µs, 4µs	-25°C ~ 85°C
Mounting Type:	Package / Case:
Through Hole	PCB Mount
Type:	
Unamplified	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.49.8000

GP1S561

Compact and Thin Photointerrupter

■ Features

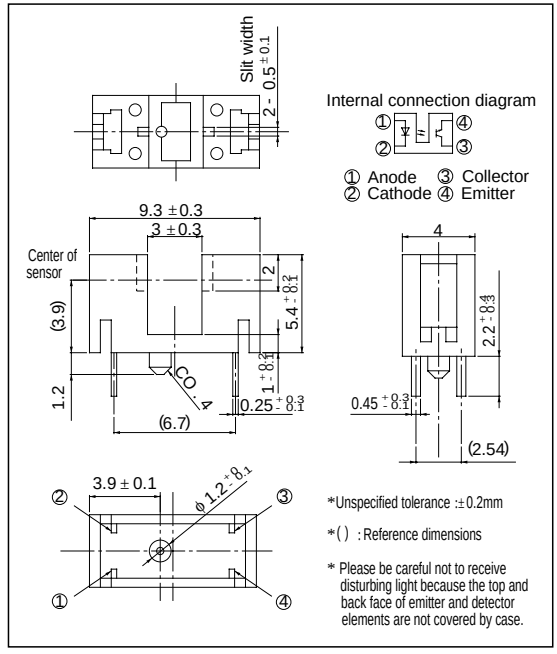
1. Compact and thin package
   (Thickness of case: 4mm)
2. With a positioning pin

■ Applications

1. Floppy disk Ratings drivers
2. VCRs

■ Outline Dimensions

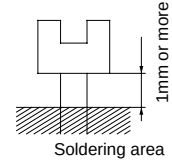
(Unit : mm)



■ Absolute Maximum Ratings

(Ta= 25˚C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1Peak 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
*2Soldering temperature		T_{sol}	260	˚C



*1 Pulse width<= 100μs, Duty ratio: 0.01
*2 For 3 seconds

■ Electro-optical characteristics

(Ta = 25˚C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V_F	I_F = 20mA	-	1.25	1.4	V
	Peak forward voltage		V_{FM}	I_{FM} = 0.5A	-	3	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} = 10V, I_F = 9mA	0.3	-	6	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 40mA, I_C = 0.1mA	-	-	0.4	V
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 1mA	-	3	15	μs
		Fall time	t_f	R_L = 100Ω	-	4	20	μs

Fig. 1 Forward Current vs. Ambient Temperature

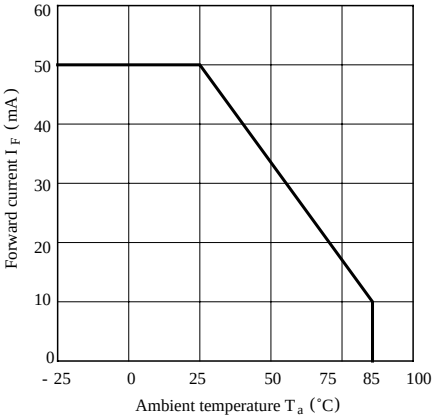


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

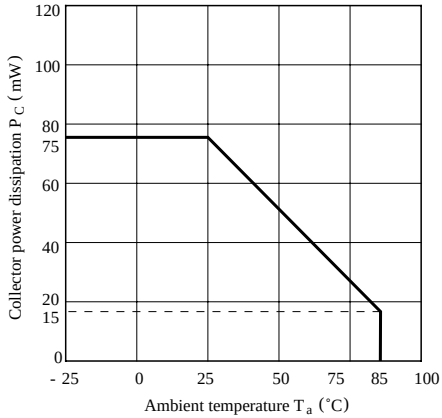


Fig. 3 Peak Forward Current vs. Duty Ratio

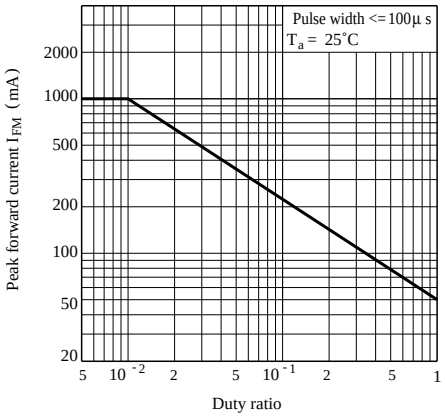


Fig. 4 Forward Current vs. Forward Voltage

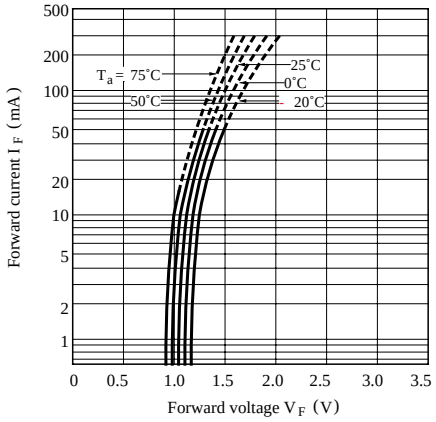


Fig. 5 Collector Current vs. Forward Current

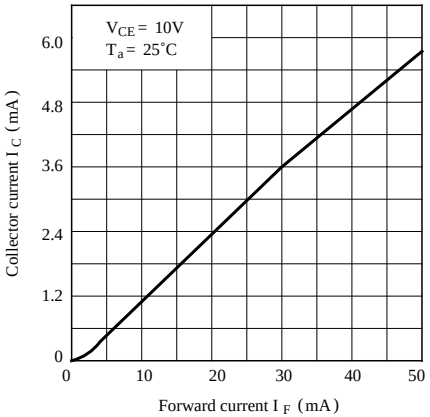


Fig. 6 Collector Current vs. Collector-emitter Voltage

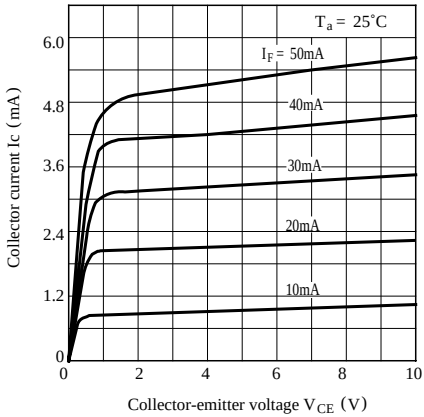


Fig. 7 Collector Current vs. Ambient Temperature

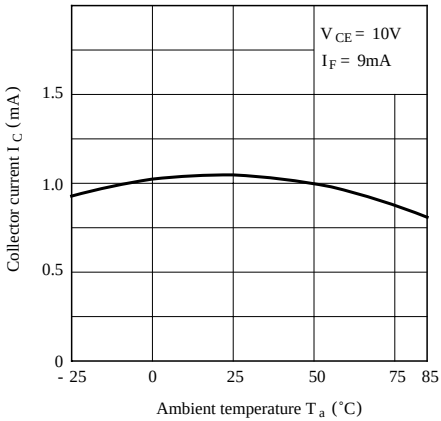


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

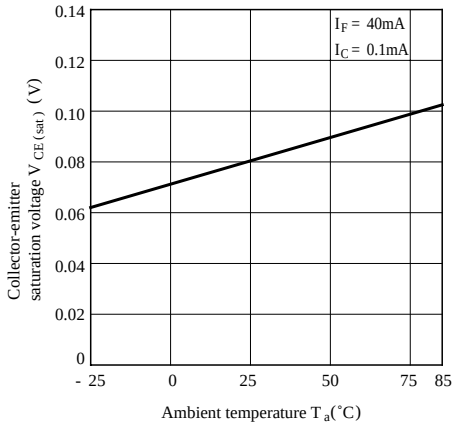
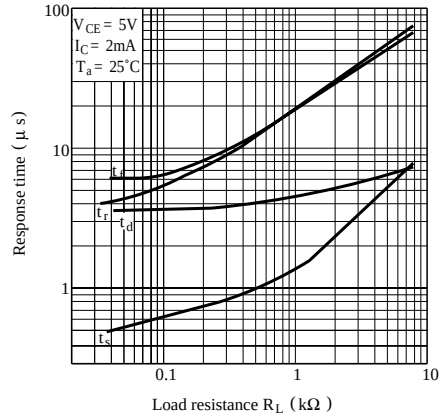


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

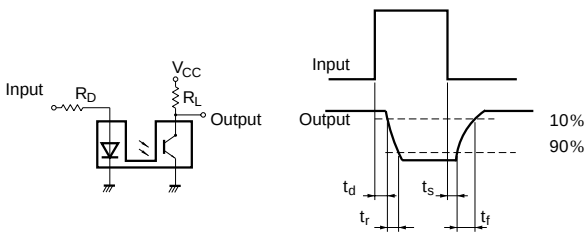


Fig.10 Frequency Response

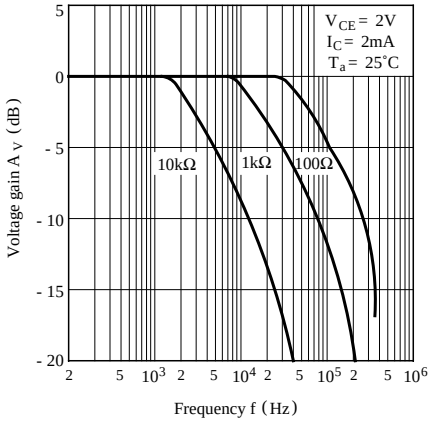
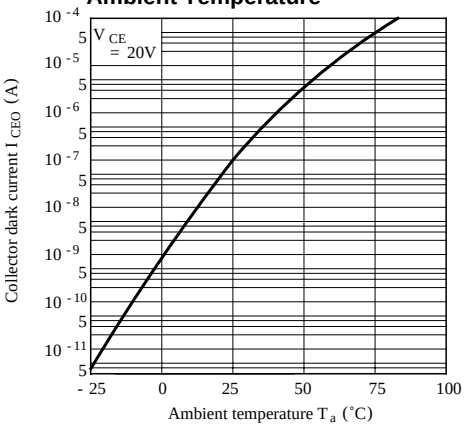


Fig.11 Collector Dark Current vs. Ambient Temperature



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

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— Consumer electronics

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