PT4120

Side View and Thin Flat Type 2-Phase Output Phototransistor

■ Features

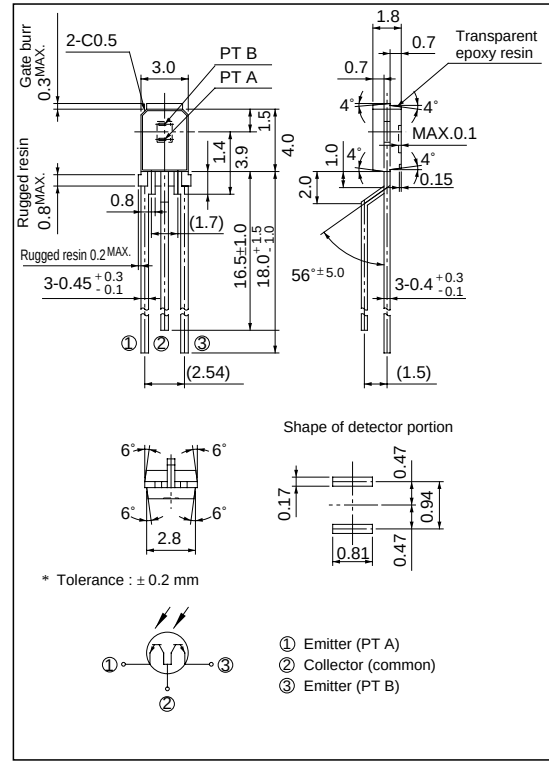
1. 2-phase PT output type
   (Read pitch : 0.94 mm)
2. Compact, thin and flat package

■ Applications

1. Mouses
2. Track balls
3. Encoders

■ Outline Dimensions

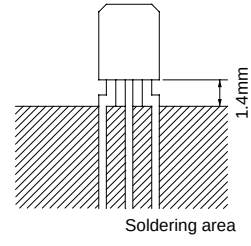
(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25˚C)

Parameter	Symbol	Rating	Unit
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 +85	˚C
*1Soldering temperature	T_{sol}	260	˚C



*1 For MAX. 5 seconds at the position of 1.4 mm from the resin edge

■ Electro-optical Characteristics

(Ta = 25˚C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector current		I_C	*2 E_V = 1 000 lx, V_{CE} = 5V	0.45	-	1.8	mA
Dark current		I_{CEO}	*2 E_e = 0, V_{CE} = 20V	-	-	0.1	μA
Collector-emitter saturation voltage		$V_{CE(sat)}$	*2 E_V = 1 000 lx, I_C = 0.1mA	-	0.1	0.4	V
Collector-emitter breakdown voltage		BV_{CEO}	I_C = 0.1mA, *2 E_e = 0	35	-	-	V
Emitter-collector breakdown voltage		BV_{ECO}	I_E = 0.01mA, *2 E_e = 0	6	-	-	V
Peak sensitivity wavelength		λp		-	800	-	nm
Response time	Rise Time	t_r	V_{CE} = 2V, I_C = 2mA, R_L = 100Ω	-	3.0	-	μs
	Fall Time	t_f		-	3.5	-	μs
2-element I_C variation		R	$I_{C(a)}/I_{C(b)}$	0.7	-	1.3	-

*2 E_v, E_e : Illuminance, irradiance by CIE standard light source A (tungsten lamp)

*3 Terminals other than test terminal shall be released.

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

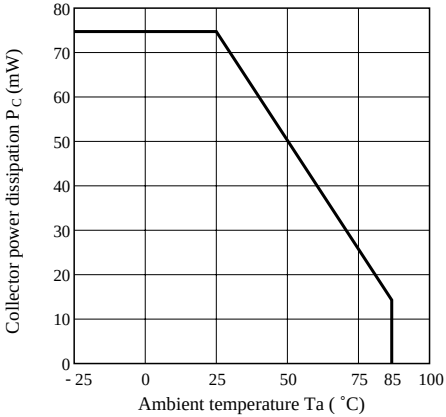


Fig. 2 Dark Current vs. Ambient Temperature

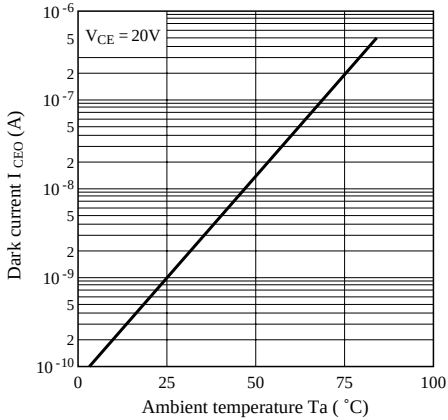


Fig. 3 Relative Collector Current vs. Ambient Temperature

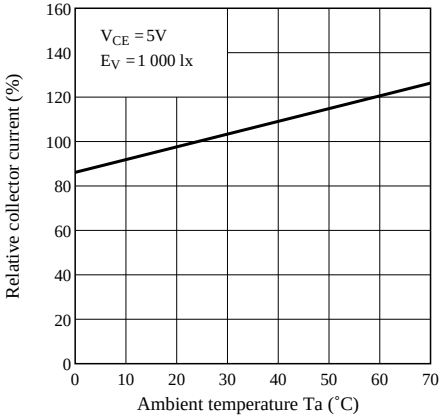


Fig. 4 Collector Current vs. Illuminance

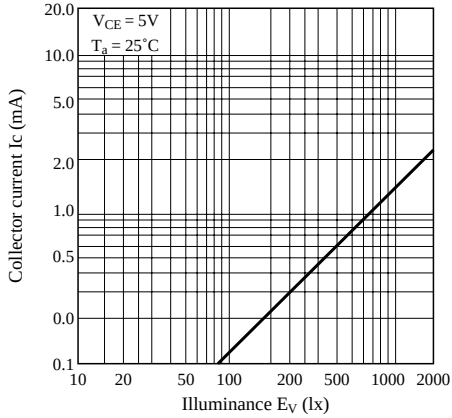


Fig. 5 Collector Current vs. Collector-emitter Voltage

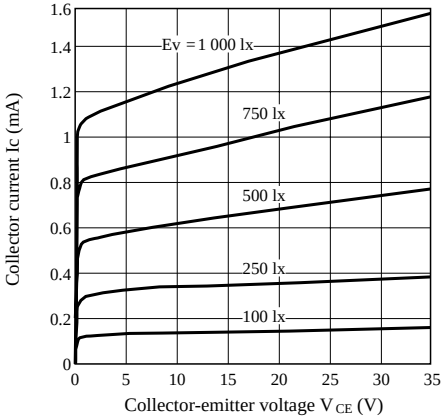


Fig. 6 Spectral Sensitivity

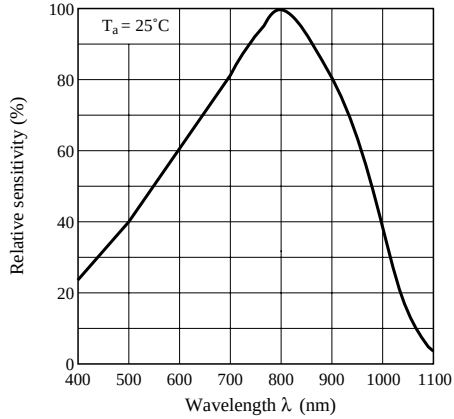
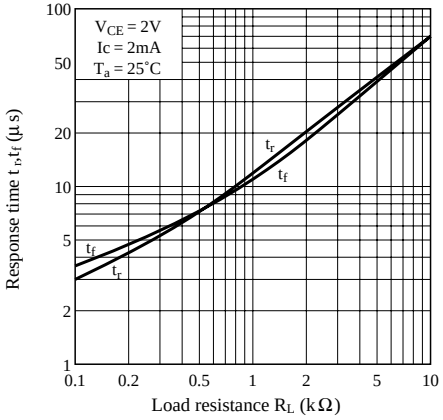


Fig. 7 Response Time vs. Load Resistance



Test Circuit for Response Time

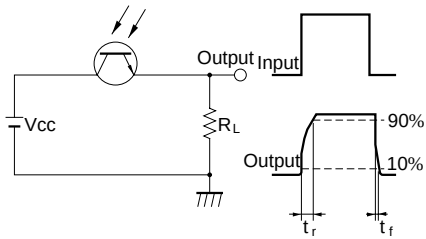


Fig. 9 Collector-emitter Saturation Voltage vs. Irradiance

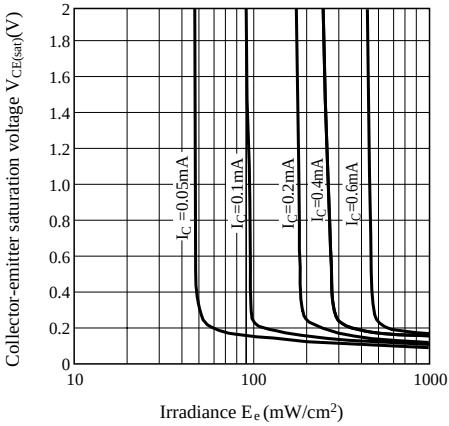
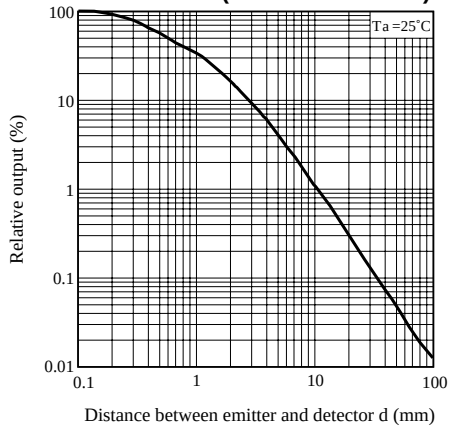


Fig. 10 Relative Output vs. Distance (Detector : GL4100)



● Please refer to the chapter "Precautions for Use". (Page 78 to 93)