

PT4120

Side View and Thin Flat Type 2-Phase Output Phototransistor

■ Features

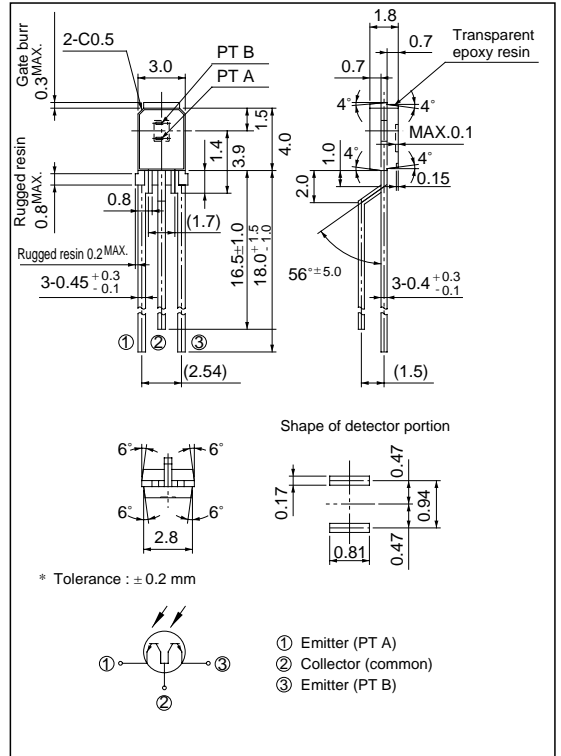
1. 2-phase PT output type
(Read pitch : 0.94 mm)
2. Compact, thin and flat package

■ Applications

1. Mouses
2. Track balls
3. Encoders

■ Outline Dimensions

(Unit : mm)

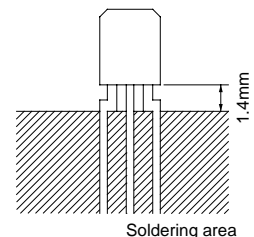


■ Absolute Maximum Ratings

(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
*1 Soldering 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		λ _p		-	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

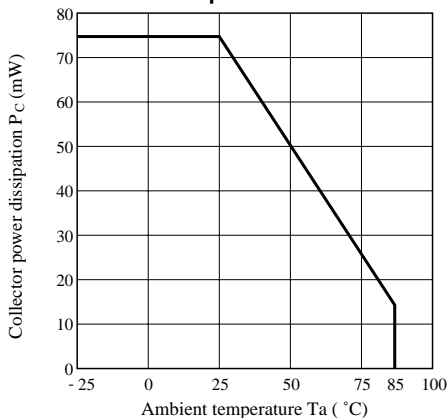


Fig. 2 Dark Current vs. Ambient Temperature

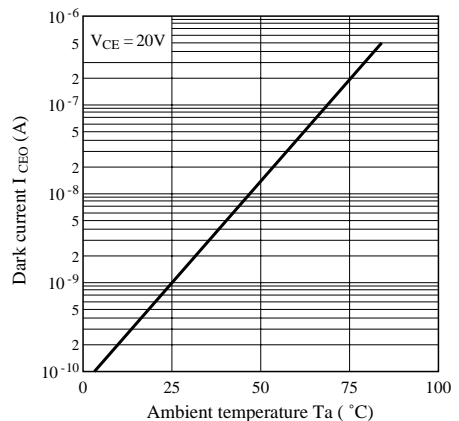


Fig. 3 Relative Collector Current vs. Ambient Temperature

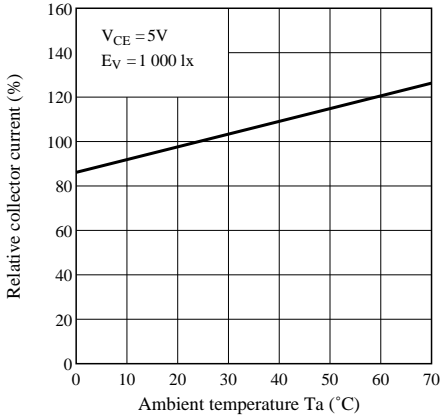


Fig. 4 Collector Current vs. Illuminance

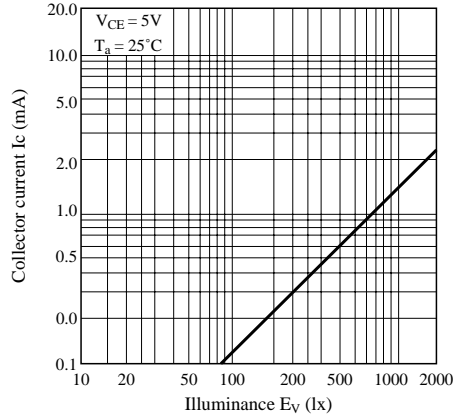


Fig. 5 Collector Current vs. Collector-emitter Voltage

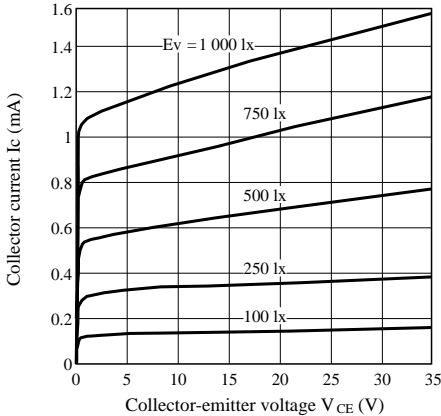


Fig. 6 Spectral Sensitivity

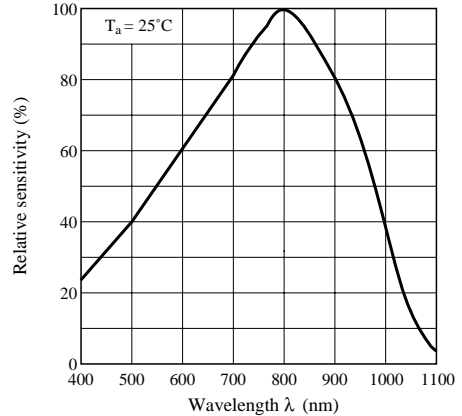
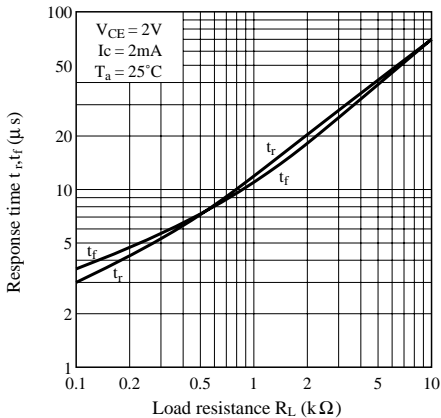


Fig. 7 Response Time vs. Load Resistance



Test Circuit for Response Time

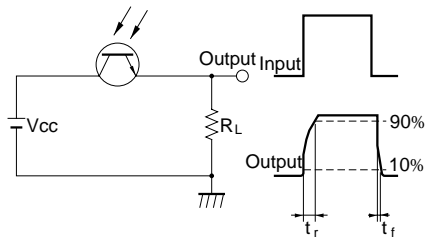


Fig. 9 Collector-emitter Saturation Voltage vs. Irradiance

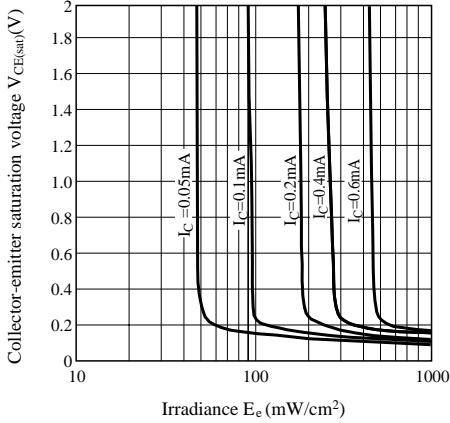
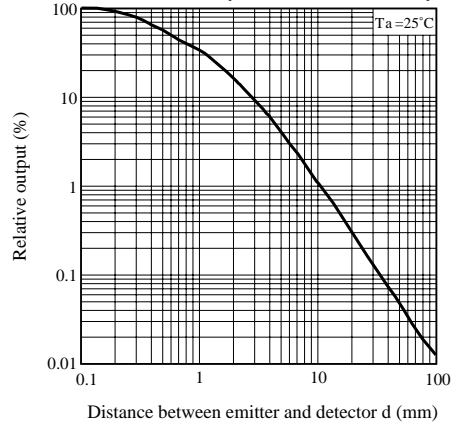


Fig. 10 Relative Output vs. Distance (Detector : GL4100)



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