

PT370/PT371 PT372

Compact, Stem Type Phototransistor

■ Features

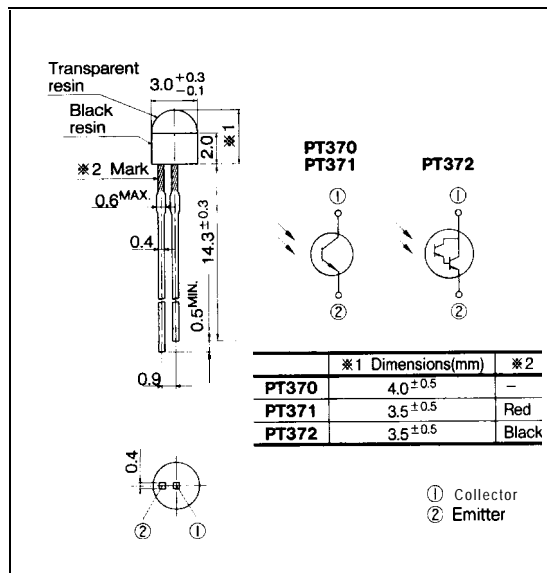
1. ϕ 3mm compact, resin stem type
2. Acceptance PT370 $A \theta$: TYP. $\pm 45^\circ$
PT371 $\Delta \theta$: TYP. $\pm 65^\circ$
PT372 $A \theta$: TYP. $\pm 70^\circ$
3. Single phototransistor output : PT370/PT371
Darlington phototransistor output : PT372

■ Applications

1. Floppy disk drives
2. VCRs
3. Automatic stroboscopes
4. Optoelectronic switches, optoelectronic counters

■ 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	PT370/PT371	20	mA
	PT372	50	
Collector power dissipation	P_C	75	mW
Operating temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-25 to +85	°C
*1 Soldering temperature	T_{sol}	260	°C

*] For 3 seconds at the position of 1.5mm from the bottom face of resin package

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX	Unit
*Collector current	PT370	I _C	*3)E _v = 100 lx, V _{CE} = 5V (PT372 : V _{CE} = 2V)	100	300	900	μA
	PT371			100	—	900	
	PT372			3.0	—	23	mA
Collector dark current	PT370/PT371	i _{CEO}	E _e = 0, V _{CE} = 20V	—	2.0	100	nA
	PT372		E _e = 0, V _{CE} = 10V	—	—	1.0	μA
Collector -emitter saturation voltage	PT370/PT371	V _{CE(sat)}	*3)E _e = 10mW/cm ² , I _C = 0.5mA	—	0.2	0.4	V
	PT372		*3)E _e = 1mW/cm ² , I _C = 2.5mA	—	0.8	1.0	
Peak sensitivity wavelength		λ _p	—	—	800	—	nm
Response time	Rise time	PT370/PT371	V _{CC} = 20V, I _C = 1mA, R _L = 1kΩ	—	10	40	μs
		PT372	V _{CC} = 2V, I _C = 10mA, R _L = 100Ω	—	100	400	μs
	Fall time	PT370/PT371	V _{CC} = 20V, I _C = 1mA, R _L = 1kΩ	—	8	35	μs
		PT372	V _{CE} = 2V, I _C = 10mA, R _L = 100Ω	—	100	400	μs
Half intensity angle	PT370	Δθ	—	—	± 45	—	—
	PT371			—	± 65	—	
	PT372			—	± 70	—	

*2 The collector current (I_C) shall be classified into the ranks as follows before delivery

Rank	Collector current I _C		
	PT370 (PA)	PT371 (LA)	PT372 (mA)
A	100 to 216	100 to 244	3.0 to 9.66
B	170 to 320	192 to 463	7.14 to 23.0
c	252 to 533	363 to 900	—
D	419 to 900	—	—

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

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

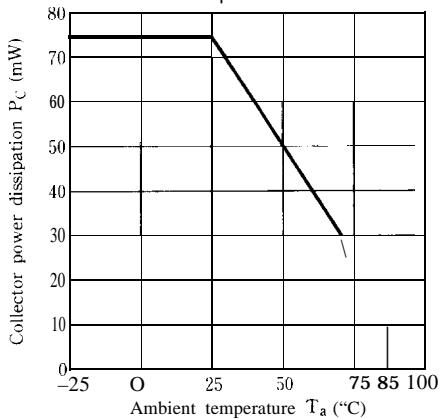
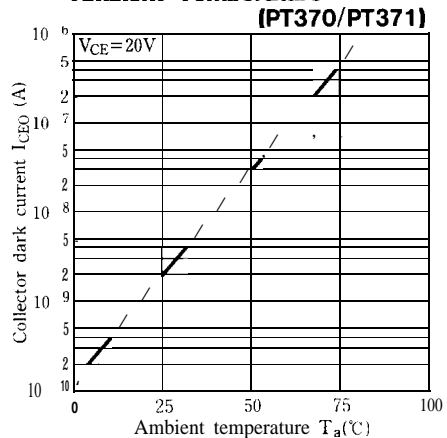


Fig.2-a Collector Dark Current vs. Ambient Temperature



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Fig.2-b Collector Dark Current vs. Ambient Temperature

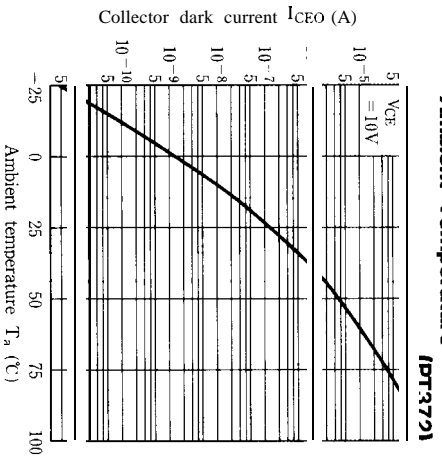


Fig.3-a Relative Collector Current vs. Ambient Temperature

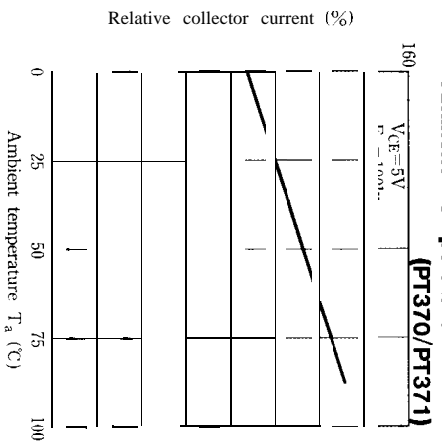


Fig.3-b Relative Collector Current vs. Ambient Temperature

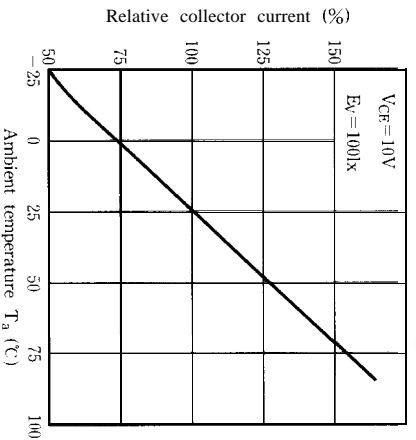


Fig.4-a Collector Current vs. Irradiance

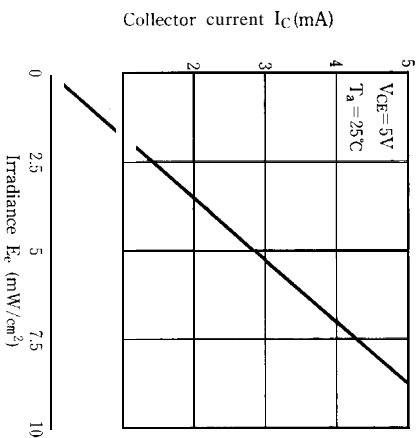


Fig.4-b Collector Current vs. Irradiance

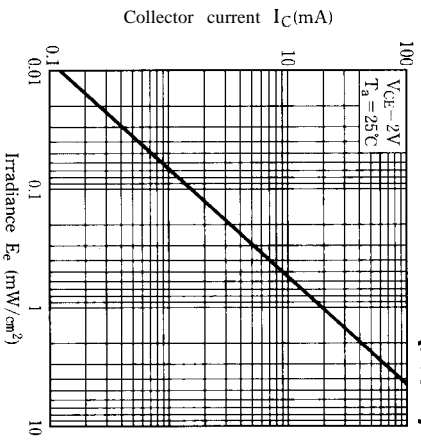


Fig.5-a Collector Current vs. Collector-emitter Voltage

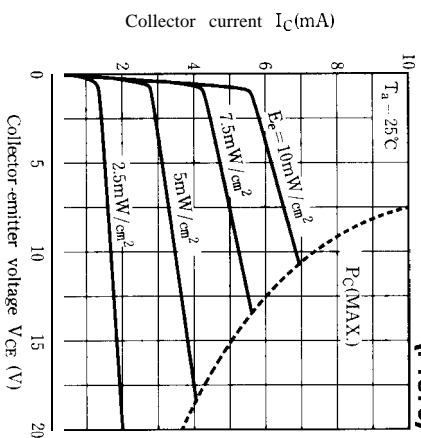


Fig.5-b Collector Current vs. Collector-emitter Voltage (PT371)

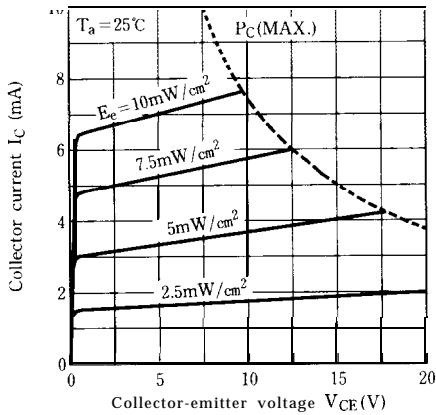


Fig.5-c Collector Current vs. Collector-emitter Voltage (PT372)

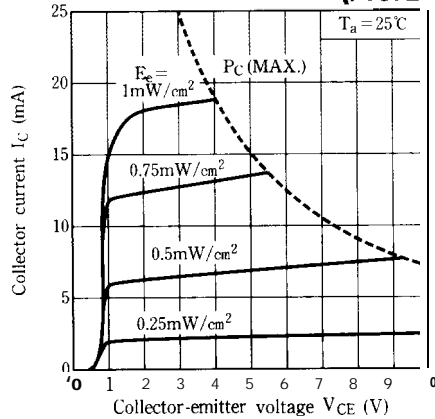


Fig. 6 Spectral Sensitivity

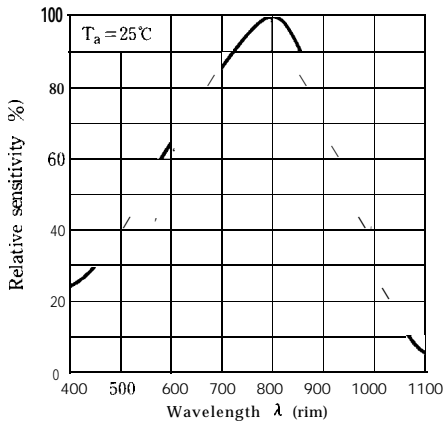


Fig.7-a Response Time vs. Load Resistance (PT370/PT371)

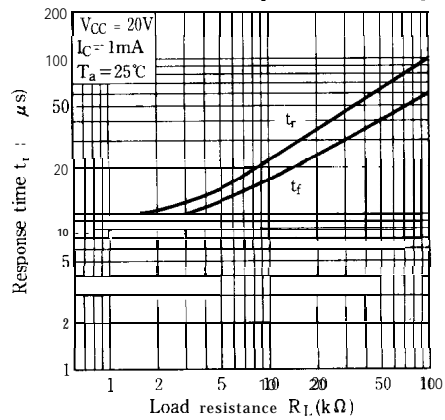
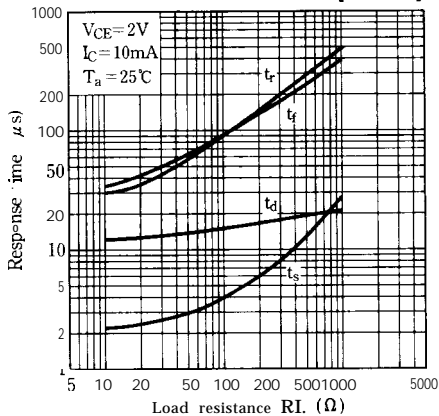
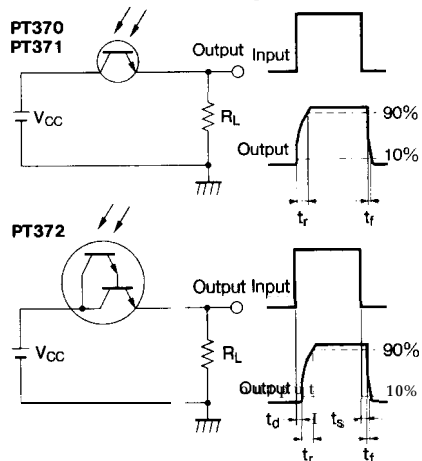


Fig.7-b Response Time vs. Load Resistance (PT372)



Test Circuit for Response Time



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Fig.8-a Sensitivity Diagram (PT370)
($T_a = 25^\circ\text{C}$)

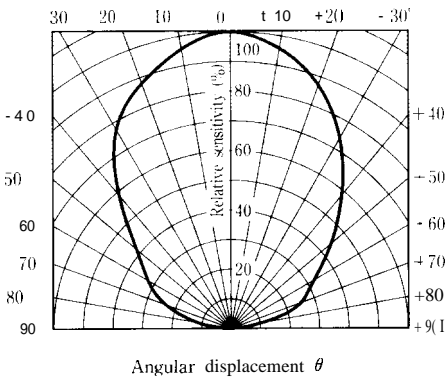


Fig.8-b Sensitivity Diagram (PT371)
($T_a = 25^\circ\text{C}$)

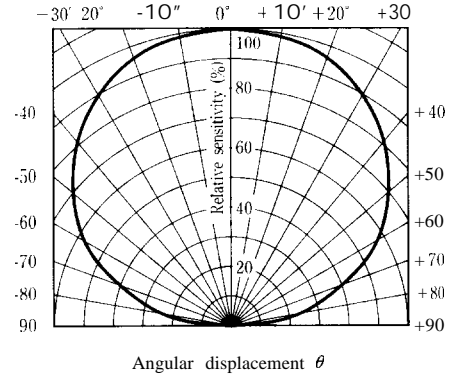


Fig.8-c Sensitivity Diagram (PT372)
($T_a = 25^\circ\text{C}$)

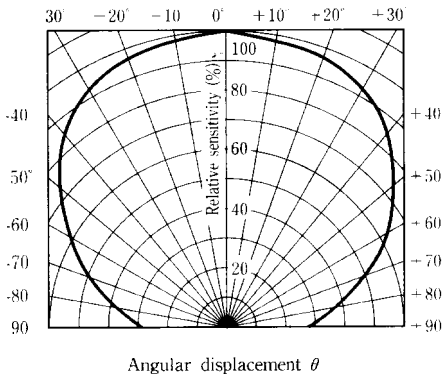


Fig.9-a Collector-emitter Saturation Voltage vs. Irradiance (PT370)

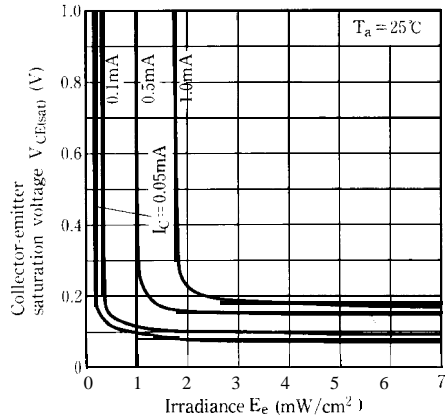


Fig.9-b Collector-emitter Saturation Voltage vs. Irradiance (PT371)

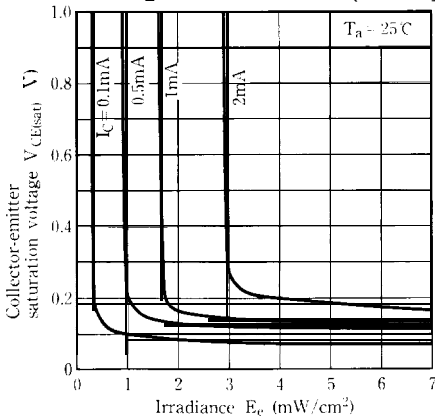
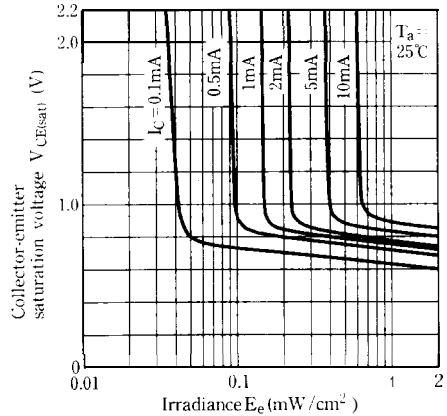


Fig.9-c Collector-emitter Saturation Voltage vs. Irradiance (PT372)



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