

PT4800/PT4800F/PT4810 PT4810F/PT4850F

Thin Type Phototransistor

■ Features

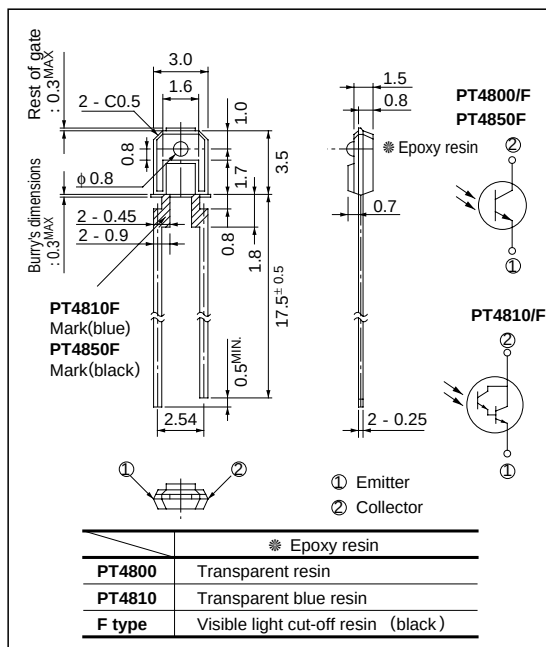
1. Thin type package (Thickness : 1.5mm)
2. Visible light cut-off type :
PT4800F/PT4810F/PT4850F
3. Single phototransistor output :
PT4800/PT4800F/PT4850F
Darlington phototransistor output:
PT4810/PT4810F
4. Thin type

■ Applications

1. VCRs
2. Floppy disk drives

■ 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	PT4800/PT4800F/PT4850F	I _C	20	mA
	PT4810/PT4810F		50	
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 3 seconds at the position of 1.8mm from the bottom face of resin package

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
*2Collector current	PT4800	I _C	E _e = 1mW/cm ² V _{CE} = 5V	0.12	0.4	1.0	mA	
	PT4800F			0.08	0.25	0.75	mA	
	PT4850F			0.12	-	0.56	mA	
	PT4810		E _e = 0.1mW/cm ² V _{CE} = 2V	0.45	-	7.0	mA	
	PT4810F			0.27	-	6.0	mA	
Collector dark current	PT4800/PT4800F	I _{CEO}	E _e = 0, V _{CE} = 20V	-	-	0.1	m A	
	PT4850F		E _e = 0, V _{CE} = 10V	-	-	1.0	m A	
	PT4810/PT4810F			-	-	1.0	m A	
*2Collector-emitter saturation voltage	PT4800/PT4800F	V _{CE} (sat)	E _e = 10mW/cm ² I _C = 0.5mA	-	-	0.4	V	
	PT4850F		E _e = 1mW/cm ² I _C = 2.5mA	-	-	1.0	V	
	PT4810/PT4810F			-	-	1.0	V	
Collector-emitter breakdown voltage		BV _{CEO}	I _C = 0.1mA E _e = 0	35	-	-	V	
Emitter-collector breakdown voltage		BV _{ECO}	I _E = 0.01mA E _e = 0	6	-	-	V	
Peak sensitivity wavelength	PT4800	λ _p	-	-	800	-	nm	
	PT4800F			-	860	-	nm	
	PT4850F			-	860	-	nm	
	PT4810			-	800	-	nm	
	PT4810F			-	860	-	nm	
Response time	Rise time	PT4800/PT4800F PT4850F	t _r	V _{CE} = 2V, I _C = 2mA R _L = 100Ω	-	3.0	-	μ s
				V _{CE} = 2V I _C = 10mA R _L = 100Ω	-	80	400	μ s
	Fall time	PT4800/PT4800F PT4850F	t _f	V _{CE} = 2V, I _C = 2mA R _L = 100Ω	-	3.5	-	μ s
				V _{CE} = 2V I _C = 10mA R _L = 100Ω	-	70	350	μ s
Half intensity angle		Δ θ	-	-	± 35	-	°	

*2 E_e : Irradiance by CIE standard light source A (tungsten lamp)

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

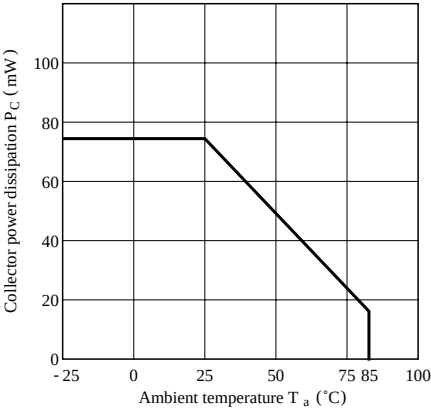


Fig. 2-a Collector Dark Current vs. Ambient Temperature (PT4800/PT4800F/PT4850F)

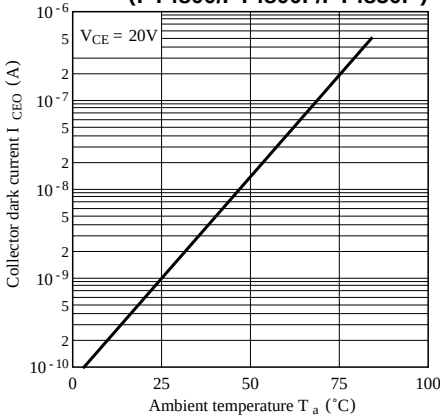


Fig. 2-b Collector Dark Current vs. Ambient Temperature

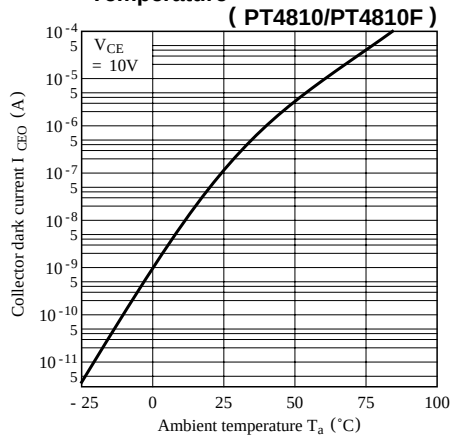


Fig. 3-a Relative Collector Current vs. Ambient Temperature

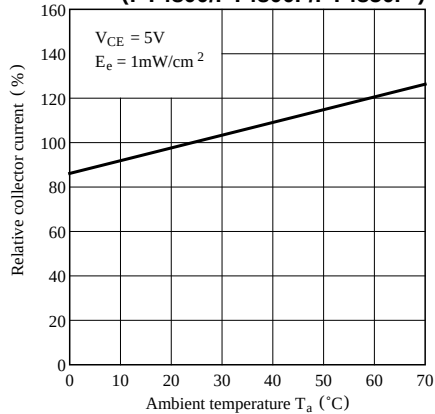


Fig. 3-b Relative Collector Current vs. Ambient Temperature

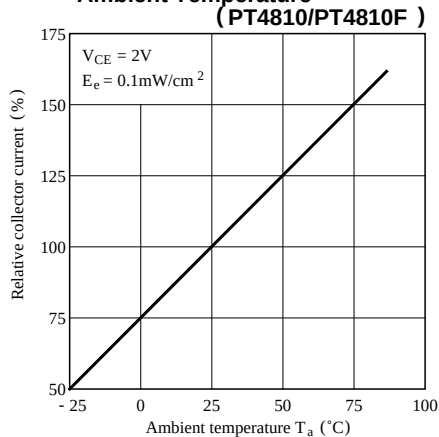


Fig. 4-a Collector Current vs. Irradiance

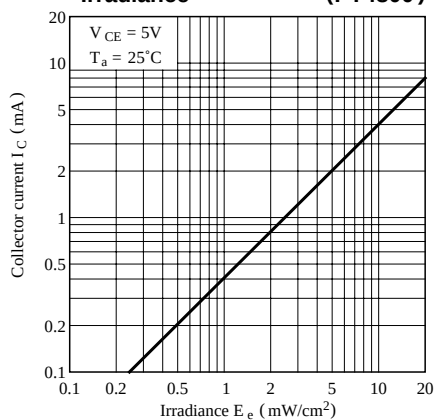


Fig. 4-b Collector Current vs. Irradiance

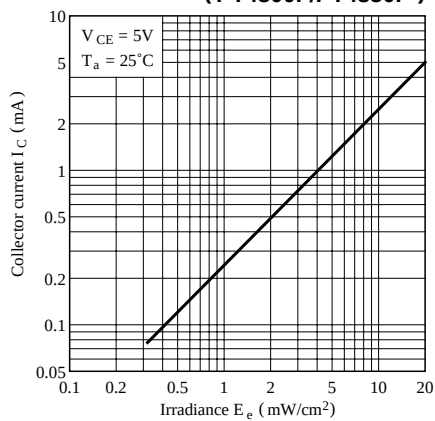


Fig. 4-c Collector Current vs. Irradiance

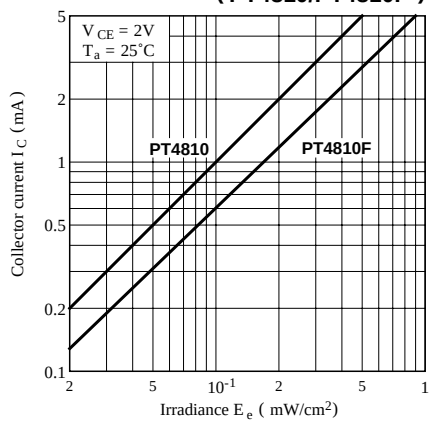


Fig. 5-a Collector Current vs. Collector-emitter Voltage

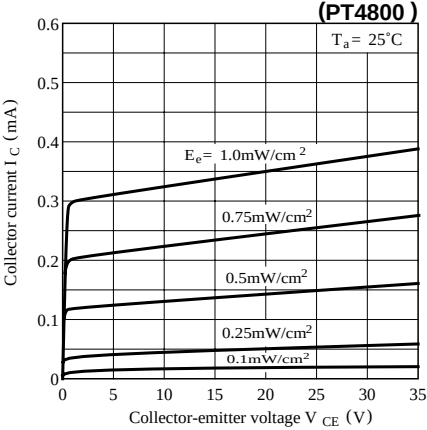


Fig. 5-b Collector Current vs. Collector-emitter Voltage (PT4800F/PT4850F)

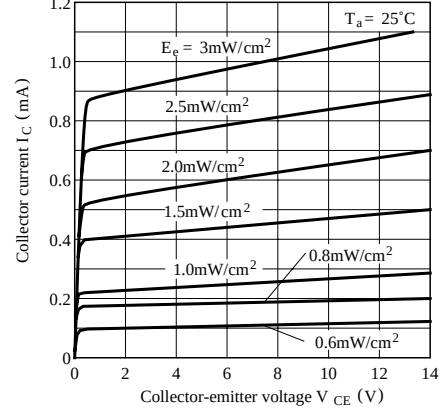


Fig. 5-c Collector Current vs. Collector-emitter Voltage

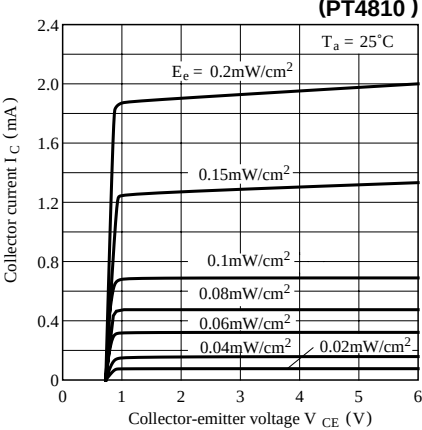


Fig. 5-d Collector Current vs. Collector-emitter Voltage (PT4810F)

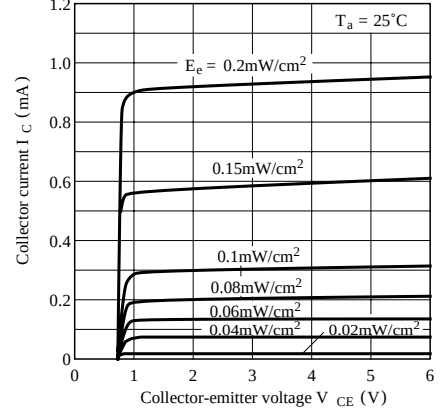


Fig. 6 Spectral Sensitivity

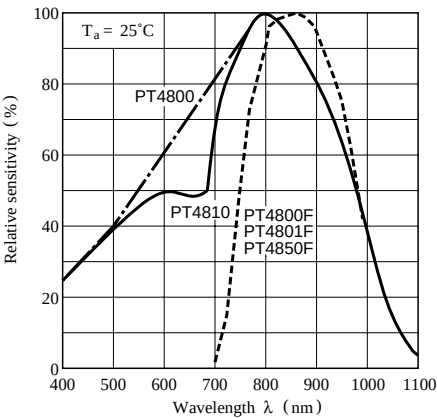


Fig. 7-a Response Time vs. Load Resistance (PT4800/PT4800F/PT4850F)

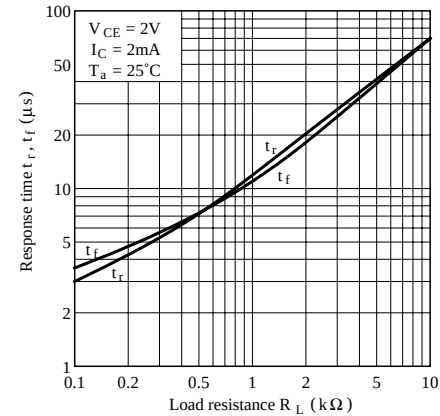
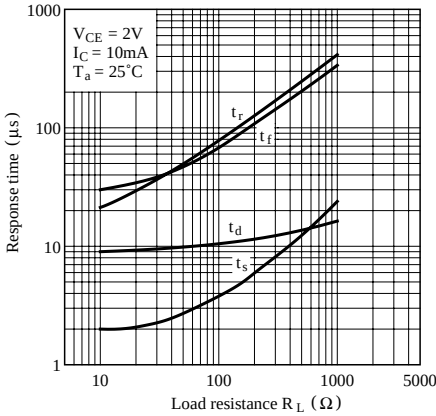
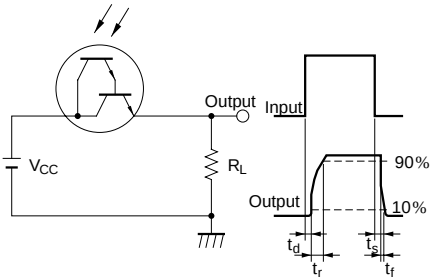


Fig. 7-b Response Time vs. Load Resistance
(PT4810/ PT4810F)



Test Circuit for Response Time
(PT4810/ PT4810F)



Test Circuit for Response Time
(PT4800/ PT4800F/ PT4850F)

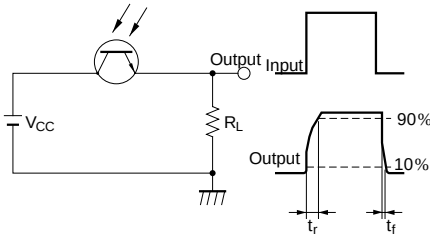


Fig. 8 Sensitivity Diagram ($T_a = 25^\circ C$)

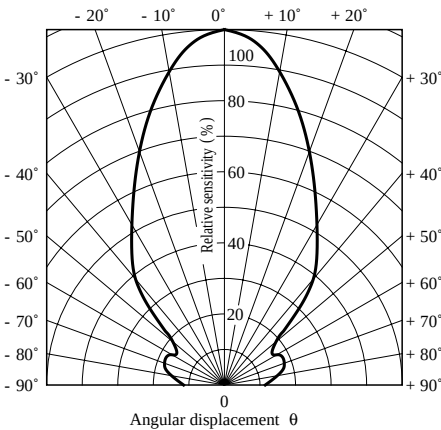


Fig. 9-a Collector-emitter Saturation
Voltage vs. Irradiance

(PT4800)

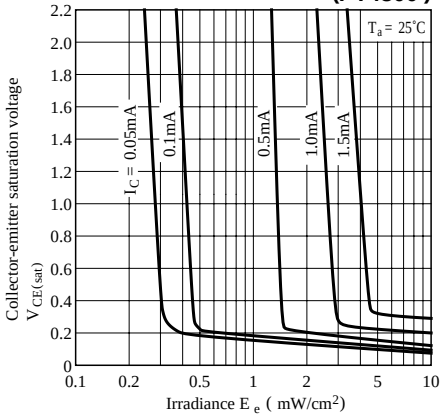


Fig. 9-b Collector-emitter Saturation
Voltage vs. Irradiance

(PT4800F/ PT4850F)

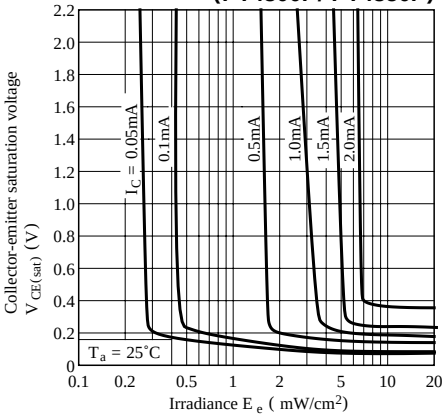


Fig. 9-c Collector-emitter Saturation Voltage vs. Irradiance (PT4810)

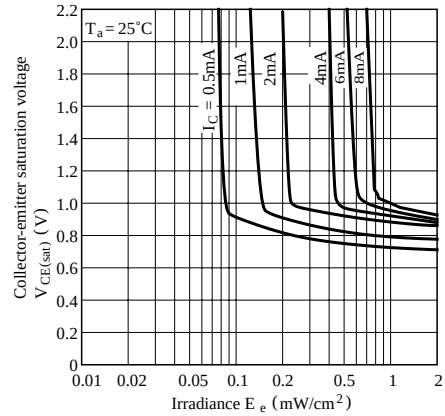


Fig.9-d Collector-emitter Saturation Voltage vs. Irradiance (PT4810F)

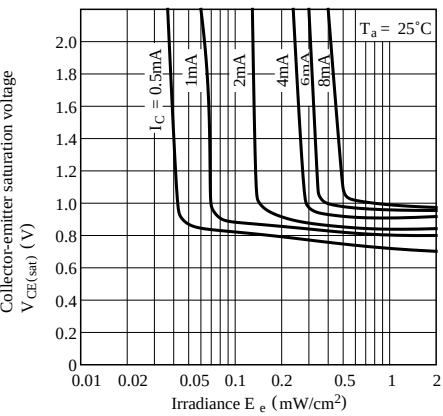


Fig.10-a Relative Output vs. Distance (PT4800F) (Emitter : GL4800)

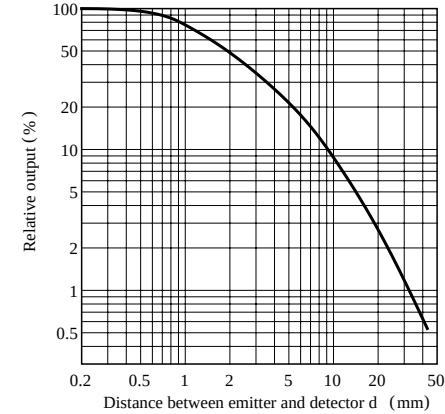
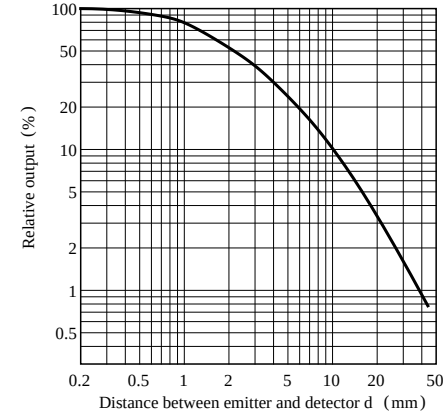


Fig.10-b Relative Output vs. Distance (PT4810F) (Emitter : GL4800)



● Please refer to the chapter “Precautions for Use”