PT4800/PT4800F/PT4810 PT4810F/PT4850F

Thin Type Phototransistor

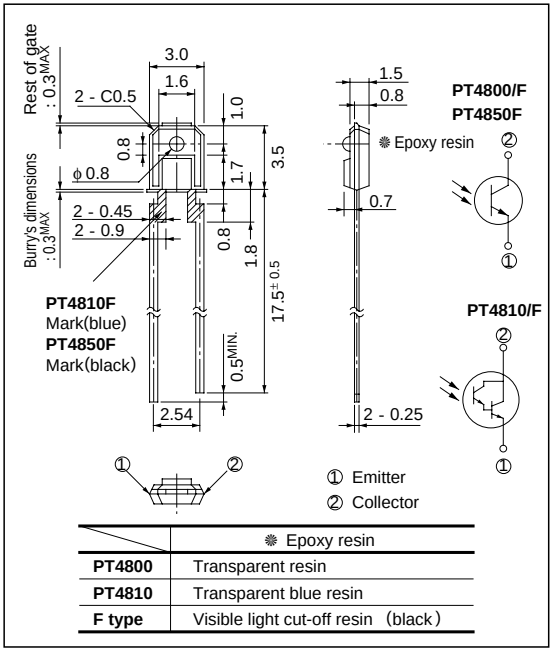
■ Features

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)



	✵ Epoxy resin
PT4800	Transparent resin
PT4810	Transparent blue resin
F type	Visible light cut-off resin (black)

■ 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
*1Soldering 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/cm² 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/cm²	0.45	-	7.0	mA
	PT4810F		V_{CE} = 2V	0.27	-	6.0	mA
Collector dark current	**PT4800/PT4800F PT4850F**	I_{CEO}	E_e = 0, V_{CE} = 20V	-	-	0.1	m A
	PT4810/PT4810F		E_e = 0, V_{CE} = 10V	-	-	1.0	m A
*2Collector-emitter saturation voltage	**PT4800/PT4800F PT4850F**	V_{CE} (sat)	E_e = 10mW/cm² I_C = 0.5mA	-	-	0.4	V
	PT4810/PT4810F		E_e = 1mW/cm² I_C = 2.5mA	-	-	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**	λp	-	-	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	-	µs
	PT4810/PT4810F		V_{CE} = 2V I_C = 10mA R_L = 100Ω	-	80	400	µs
Response time — Fall time	**PT4800/PT4800F PT4850F**	t_f	V_{CE} = 2V, I_C = 2mA R_L = 100Ω	-	3.5	-	µs
	PT4810/PT4810F		V_{CE} = 2V I_C = 10mA R_L = 100Ω	-	70	350	µs
Half intensity angle		$\Delta\theta$	-	-	± 35	-	°

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

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

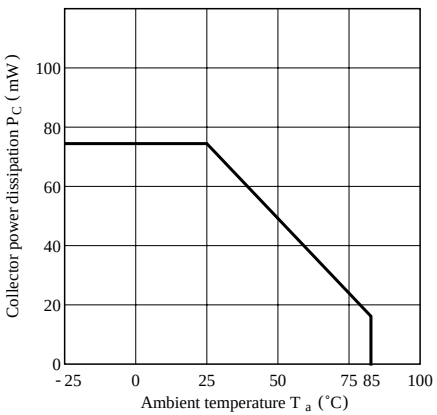


Fig. 2-a Collector Dark Current vs. Ambient Temperature (PT4800/PT4800F/PT4850F)

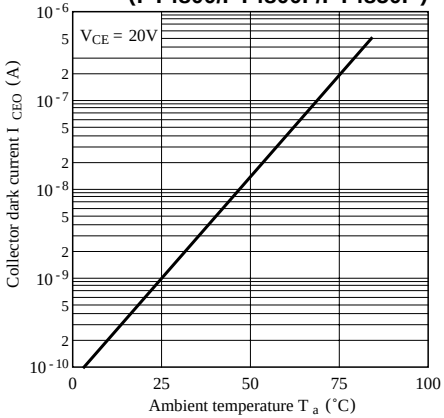


Fig. 2-b Collector Dark Current vs. Ambient Temperature (PT4810/PT4810F)

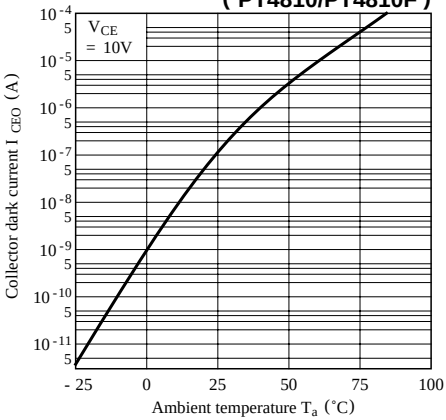


Fig. 3-a Relative Collector Current vs. Ambient Temperature (PT4800/PT4800F/PT4850F)

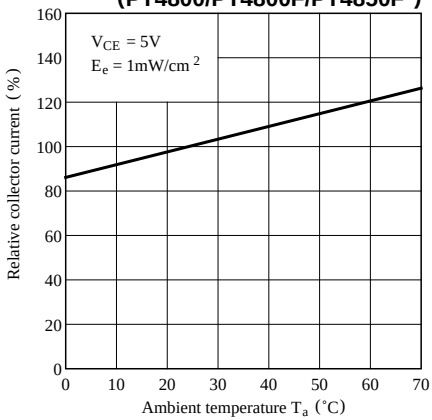


Fig. 3-b Relative Collector Current vs. Ambient Temperature (PT4810/PT4810F)

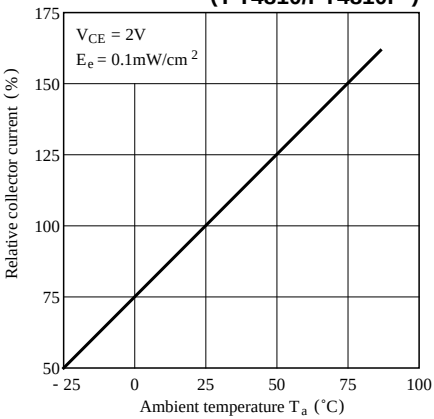


Fig. 4-a Collector Current vs. Irradiance (PT4800)

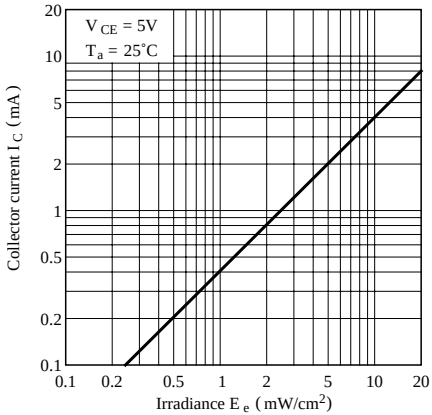


Fig. 4-b Collector Current vs. Irradiance (PT4800F/PT4850F)

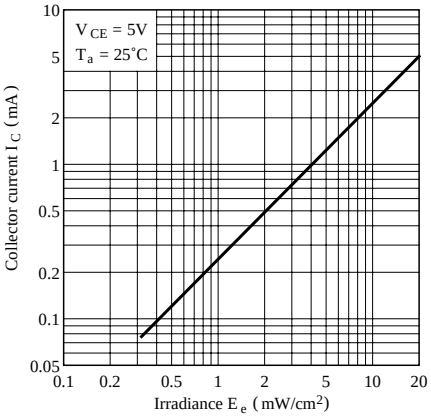


Fig. 4-c Collector Current vs. Irradiance (PT4810/PT4810F)

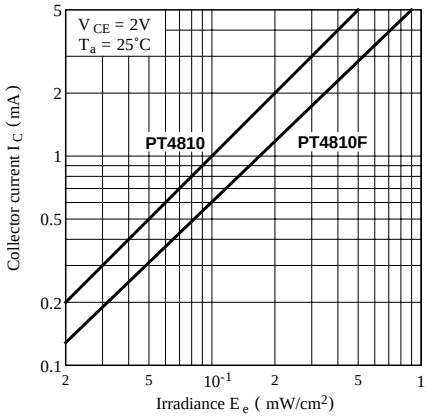


Fig. 5-a Collector Current vs. Collector-emitter Voltage (PT4800)

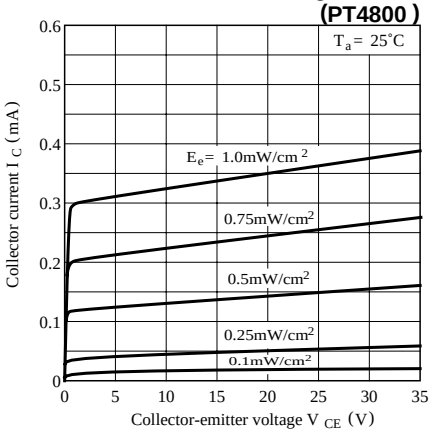


Fig. 5-b Collector Current vs. Collector-emitter Voltage (PT4800F/PT4850F)

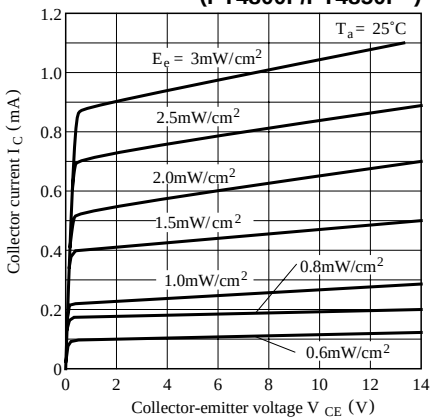


Fig. 5-c Collector Current vs. Collector-emitter Voltage (PT4810)

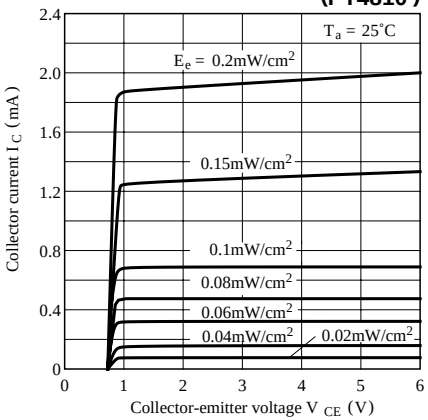


Fig. 5-d Collector Current vs. Collector-emitter Voltage (PT4810F)

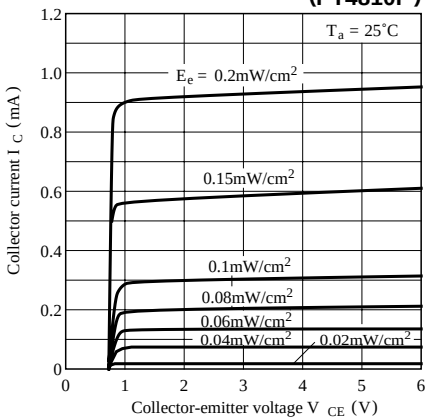


Fig. 6 Spectral Sensitivity

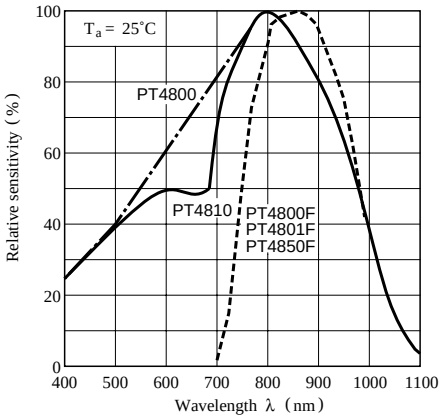


Fig. 7-a Response Time vs. Load Resistance (PT4800/PT4800F/PT4850F)

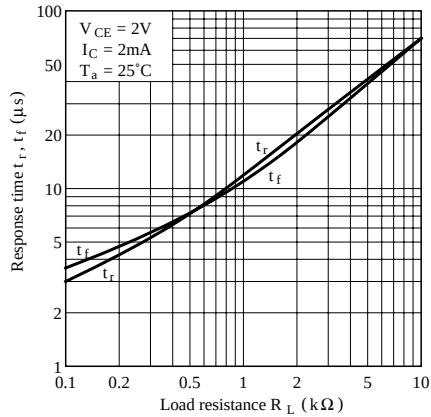
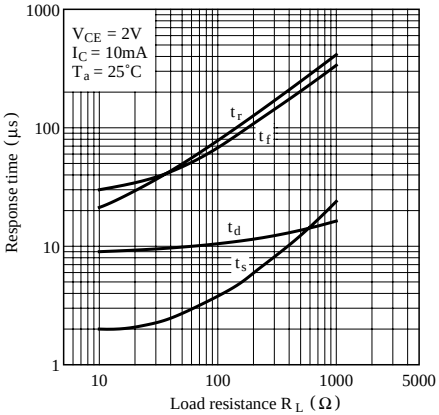
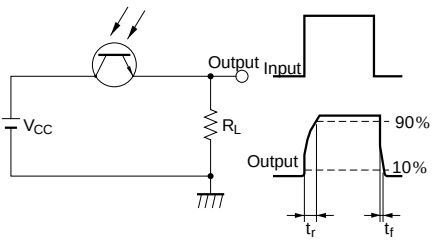


Fig. 7-b Response Time vs. Load Resistance (PT4810/ PT4810F)



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



Test Circuit for Response Time (PT4810/ PT4810F)

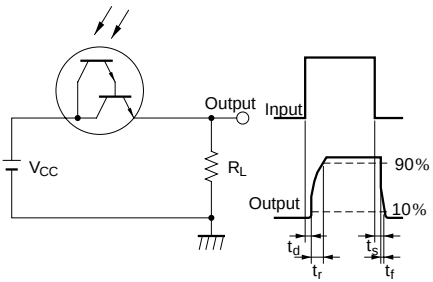


Fig. 8 Sensitivity Diagram (T_a = 25˚C)

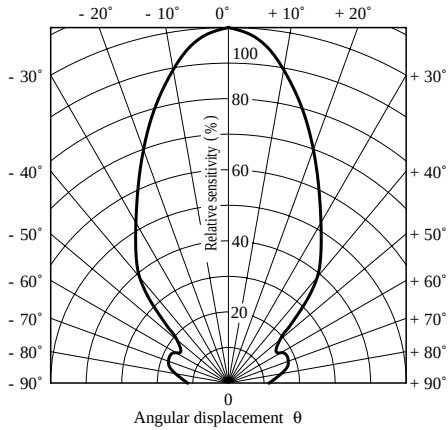


Fig. 9-a Collector-emitter Saturation Voltage vs. Irradiance (PT4800)

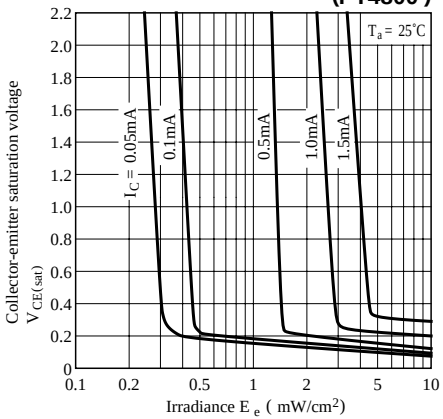


Fig. 9-b Collector-emitter Saturation Voltage vs. Irradiance (PT4800F/ PT4850F)

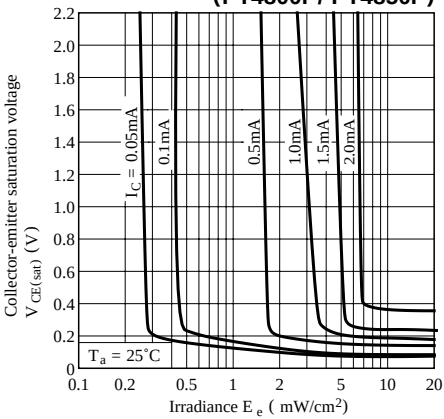


Fig. 9-c Collector-emitter Saturation Voltage vs. Irradiance (PT4810)

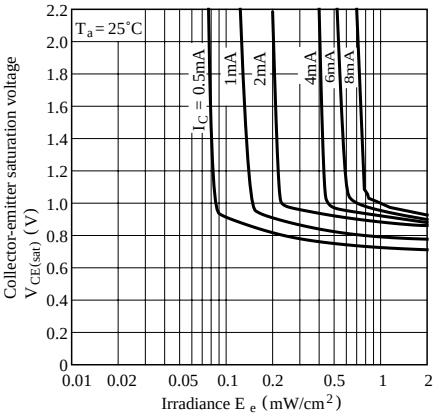


Fig.9-d Collector-emitter Saturation Voltage vs. Irradiance (PT4810F)

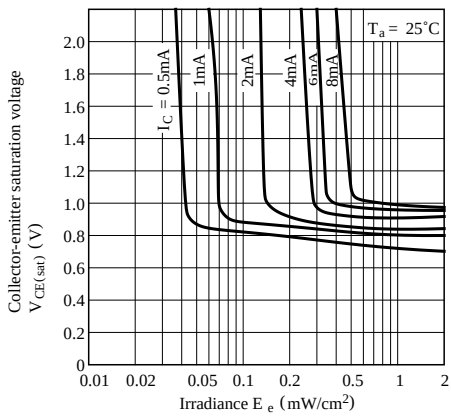


Fig.10-a Relative Output vs. Distance (PT4800F) (Emitter : GL4800)

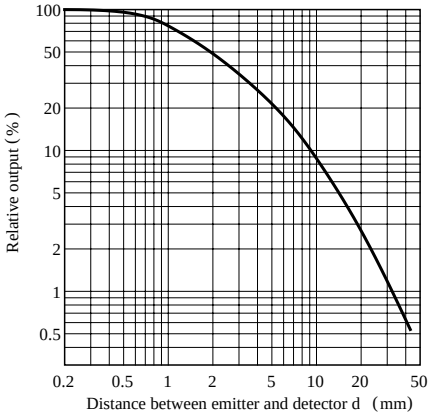
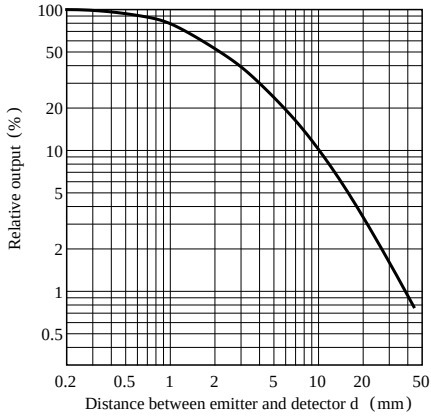


Fig.10-b Relative Output vs. Distance (PT4810F) (Emitter : GL4800)



● Please refer to the chapter " Precautions for Use"

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