

PT4800/PT4800F/PT4810 PT4810F/PT4850F

Thin Type Phototransistor

■ Features

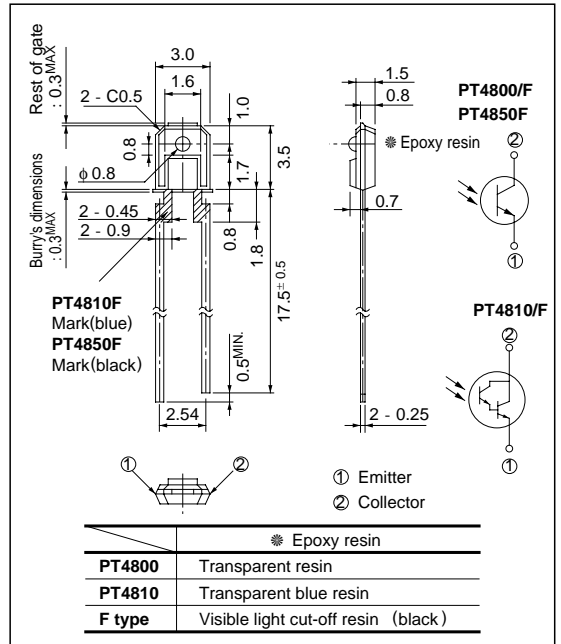
- Thin type package (Thickness : 1.5mm)
- Visible light cut-off type :
PT4800F/PT4810F/PT4850F
- Single phototransistor output :
PT4800/PT4800F/PT4850F
Darlington phototransistor output:
PT4810/PT4810F
- Thin type

■ Applications

- VCRs
- 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	I _C	20	mA
		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

($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2Collector current	PT4800	I_C	$E_e = 1\text{mW/cm}^2$ $V_{CE} = 5\text{V}$	0.12	0.4	1.0	mA
	PT4800F			0.08	0.25	0.75	mA
	PT4850F			0.12	-	0.56	mA
	PT4810		$E_e = 0.1\text{mW/cm}^2$ $V_{CE} = 2\text{V}$	0.45	-	7.0	mA
	PT4810F			0.27	-	6.0	mA
Collector dark current	PT4800/PT4800F PT4850F	I_{CEO}	$E_e = 0, V_{CE} = 20\text{V}$	-	-	0.1	mA
	PT4810/PT4810F		$E_e = 0, V_{CE} = 10\text{V}$	-	-	1.0	mA
	*2Collector-emitter saturation voltage	PT4800/PT4800F PT4850F	V_{CE} (sat)	$E_e = 10\text{mW/cm}^2$ $I_C = 0.5\text{mA}$	-	-	0.4
PT4810/PT4810F		$E_e = 1\text{mW/cm}^2$ $I_C = 2.5\text{mA}$		-	-	1.0	V
Collector-emitter breakdown voltage		BV_{CEO}	$I_C = 0.1\text{mA}$ $E_e = 0$	35	-	-	V
Emitter-collector breakdown voltage		BV_{ECO}	$I_E = 0.01\text{mA}$ $E_e = 0$	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	t_r	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega$	-	3.0	-	μs
			PT4810/PT4810F	$V_{CE} = 2\text{V}$ $I_C = 10\text{mA}$ $R_L = 100\Omega$	-	80	400
	Fall time	t_f	$V_{CE} = 2\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega$	-	3.5	-	μs
			PT4810/PT4810F	$V_{CE} = 2\text{V}$ $I_C = 10\text{mA}$ $R_L = 100\Omega$	-	70	350
Half intensity angle		$\Delta\theta$	-	-	± 35	-	$^\circ$

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

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

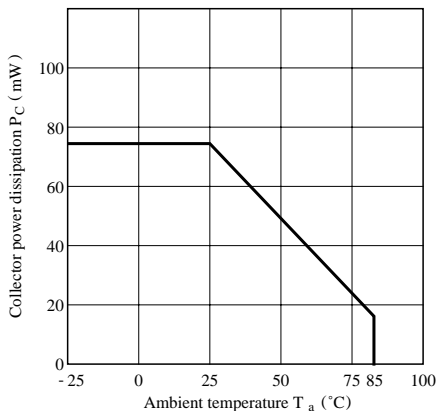


Fig. 2-a Collector Dark Current vs. Ambient Temperature (PT4800/PT4800F/PT4850F)

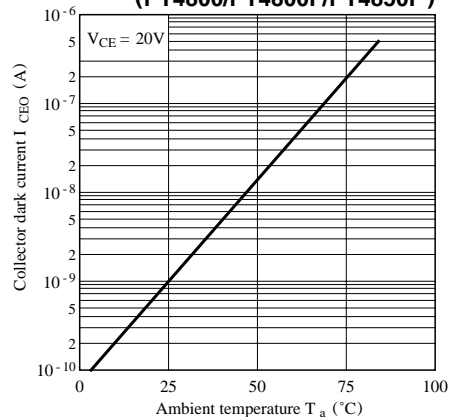


Fig. 2-b Collector Dark Current vs. Ambient Temperature

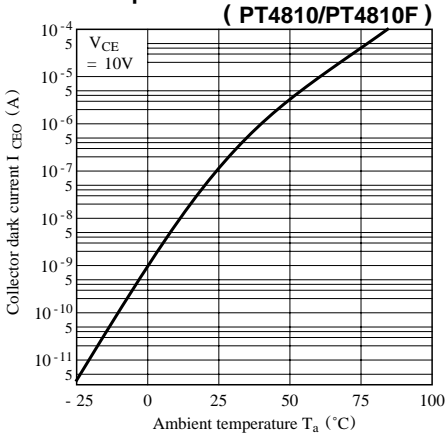


Fig. 3-a Relative Collector Current vs. Ambient Temperature

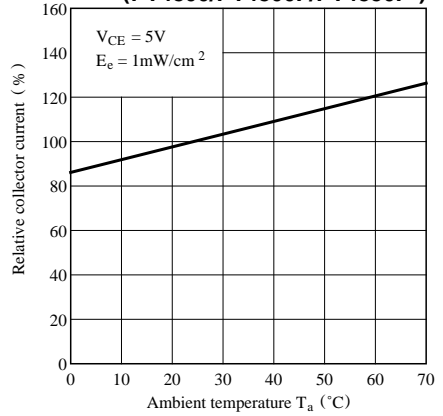


Fig. 3-b Relative Collector Current vs. Ambient Temperature

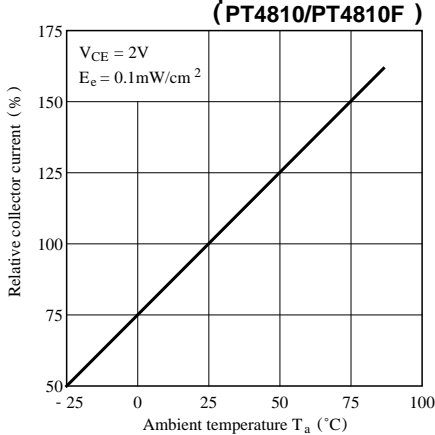


Fig. 4-a Collector Current vs. Irradiance

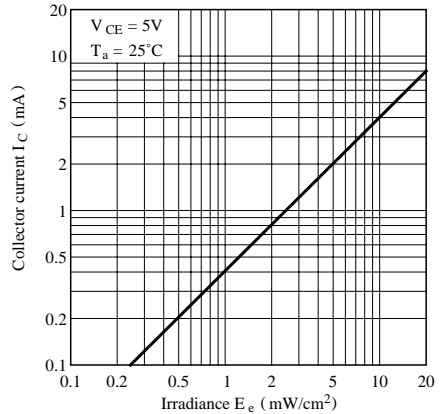


Fig. 4-b Collector Current vs. Irradiance

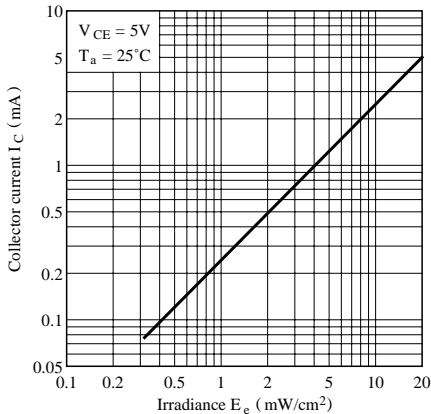


Fig. 4-c Collector Current vs. Irradiance

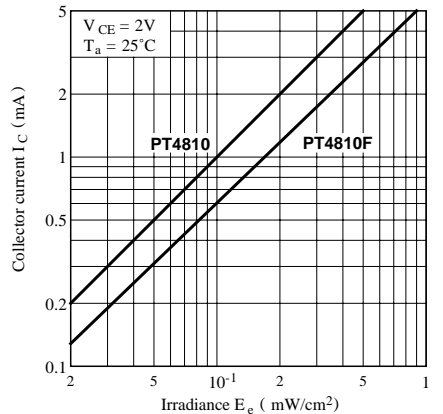


Fig. 5-a Collector Current vs. Collector-emitter Voltage

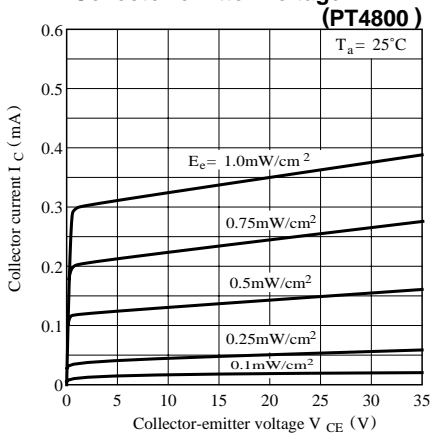


Fig. 5-b Collector Current vs. Collector-emitter Voltage

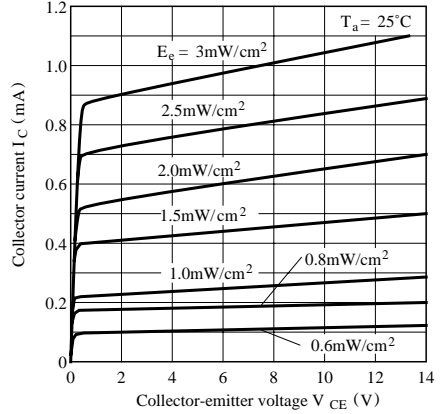


Fig. 5-c Collector Current vs. Collector-emitter Voltage

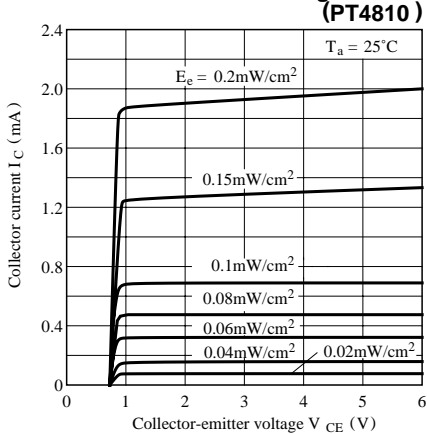


Fig. 5-d Collector Current vs. Collector-emitter Voltage

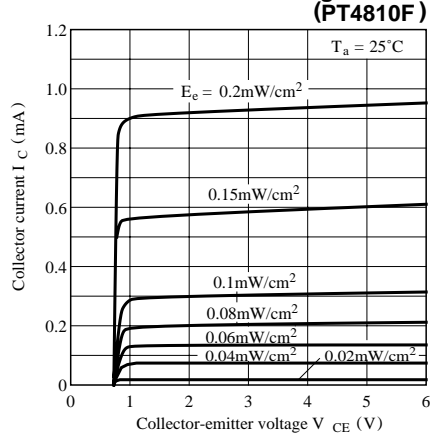


Fig. 6 Spectral Sensitivity

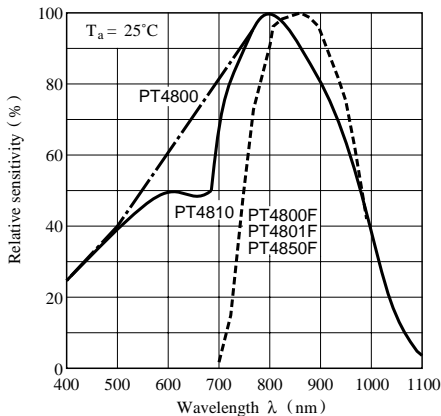


Fig. 7-a Response Time vs. Load Resistance

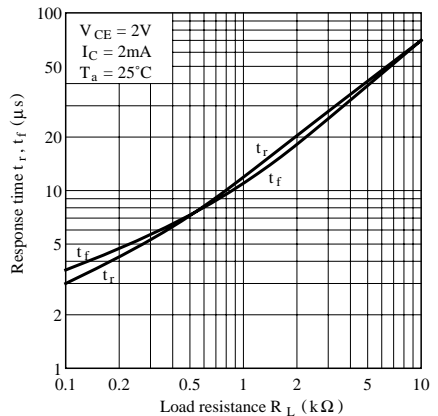
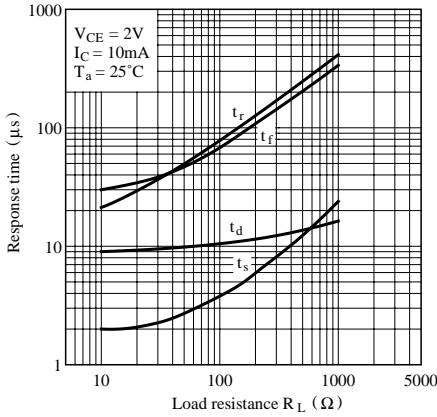
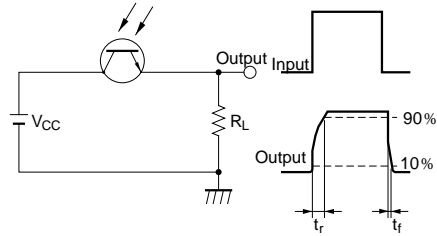


Fig. 7-b Response Time vs. Load Resistance (PT4810/ PT4810F)



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



Test Circuit for Response Time (PT4810/ PT4810F)

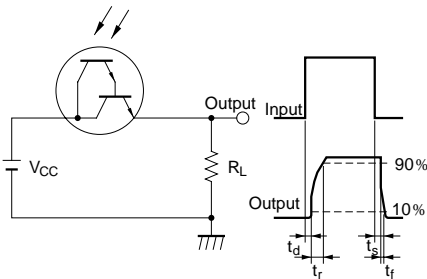


Fig. 8 Sensitivity Diagram ($T_a = 25^\circ\text{C}$)

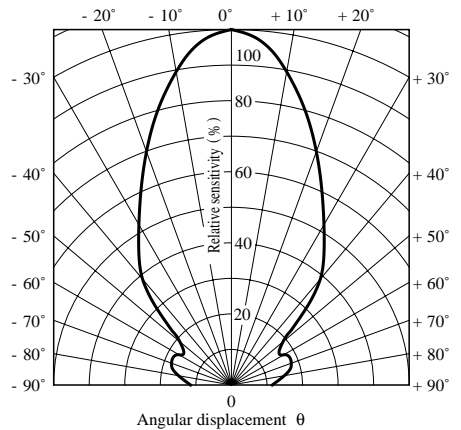


Fig. 9-a Collector-emitter Saturation Voltage vs. Irradiance (PT4800)

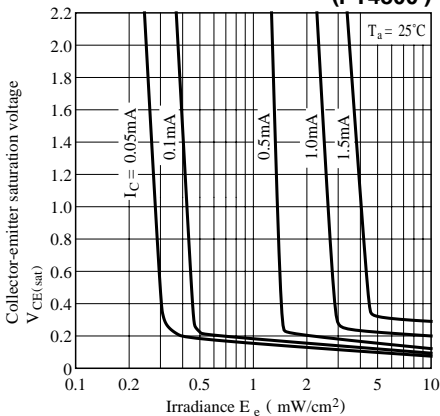


Fig. 9-b Collector-emitter Saturation Voltage vs. Irradiance (PT4800F/ PT4850F)

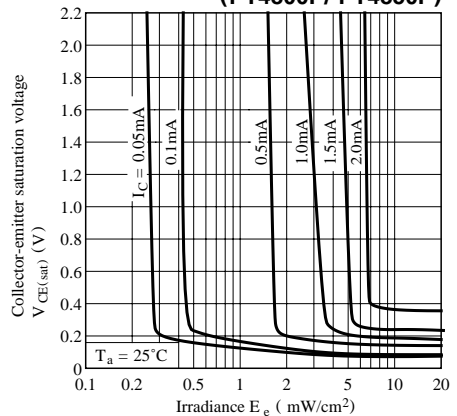


Fig. 9-c Collector-emitter Saturation Voltage vs. Irradiance (PT4810)

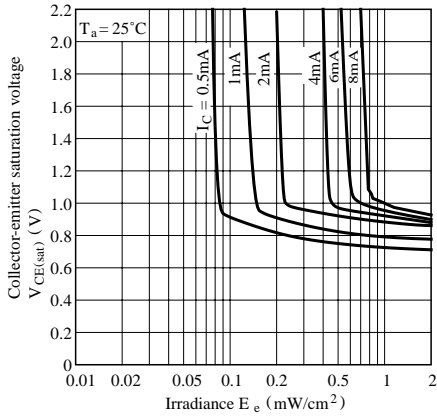


Fig.9-d Collector-emitter Saturation Voltage vs. Irradiance (PT4810F)

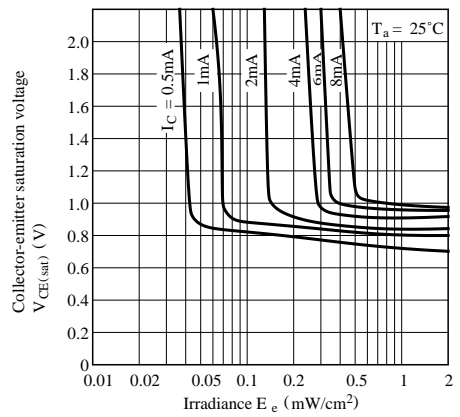


Fig.10-a Relative Output vs. Distance (PT4800F) (Emitter : GL4800)

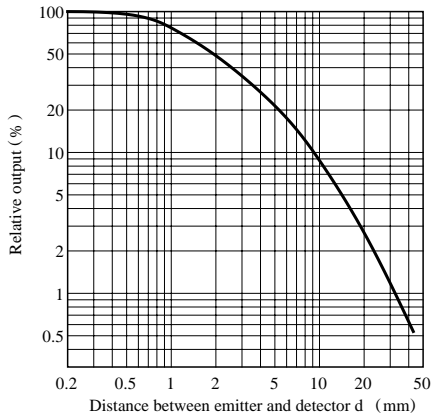
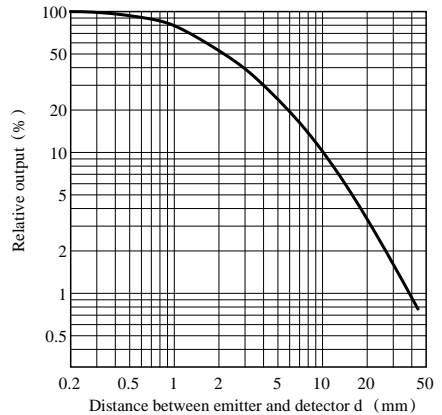


Fig.10-b Relative Output vs. Distance (PT4810F) (Emitter : GL4800)



● Please refer to the chapter “Precautions for Use”

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