PT481/PT481F/ PT483F1

Narrow Acceptance High Sensitivity Phototransistor

■ Features

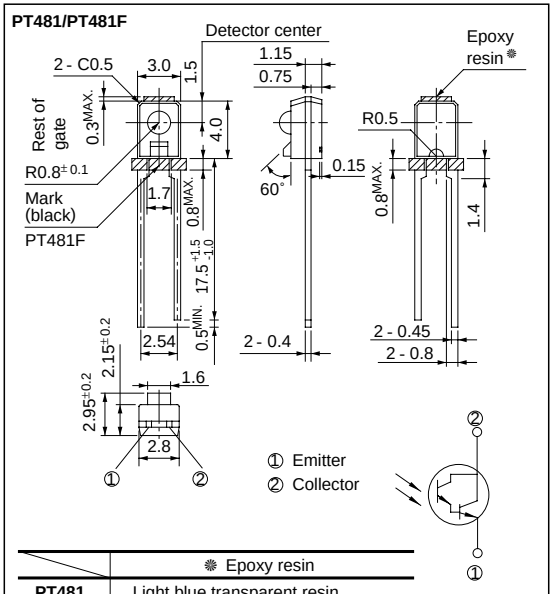
1. Epoxy resin package
2. Narrow acceptance (Δθ : Typ. ± 13˚)
3. High sensitivity
   (I_C : MIN. 1.5mA at E_e = 0.1mW/cm^2) : **PT481/PT483F1**
   (I_C : MIN. 0.9mA at E_e = 0.1mW/cm^2) : **PT481F**
4. Visible light cut-off type : **PT481F/PT483F1**
5. Long lead pin type : **PT483F1**

■ Applications

1. VCRs, cassette tape recorders
2. Floppy disk drives
3. Optoelectronic switches
4. Automatic stroboscopes

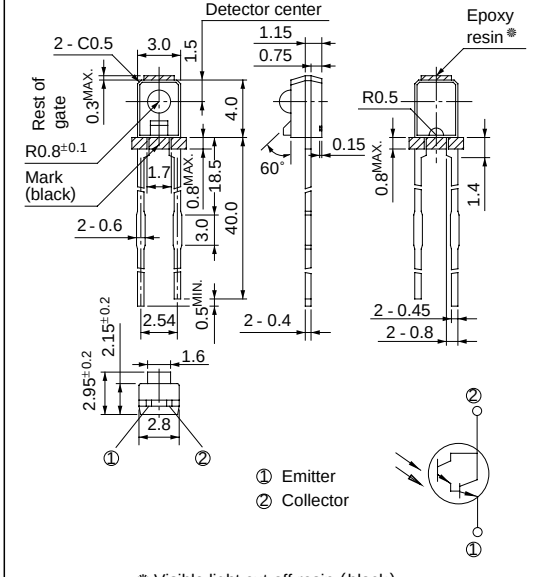
■ Outline Dimensions (Unit : mm)

PT481/PT481F



	✵ Epoxy resin
PT481	Light blue transparent resin
PT481F	Visible light cut-off resin (black)

PT483F1



■ 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	50	mA
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 1.4mm from the bottom face of resin package

■ Electro-optical Characteristics (Ta = 25˚C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Collector current	**PT481**	I_C	V_{CE} = 2V, E_e = 0.1mW/cm²	1.5	10	25	mA
	PT481F			0.9	-	27	mA
	PT483F1			1.5	-	4.0	mA
Collector dark current		I_{CEO}	V_{CE} = 10V, E_e = 0	-	-	10^{-6}	A
*2 Collector-emitter saturation voltage		$V_{CE(sat)}$	I_c = 2.5mA, E_e = 1mW/cm²	-	0.7	1.0	V
Peak emission wavelength	**PT481**	λ_p	-	-	800	-	nm
	PT481F/PT483F1			-	860	-	nm
Response time	Rise time	t_r	V_{CE} = 2V, I_C = 10mA, R_L = 100Ω	-	80	-	μs
	Fall time	t_f		-	70	-	μs

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

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

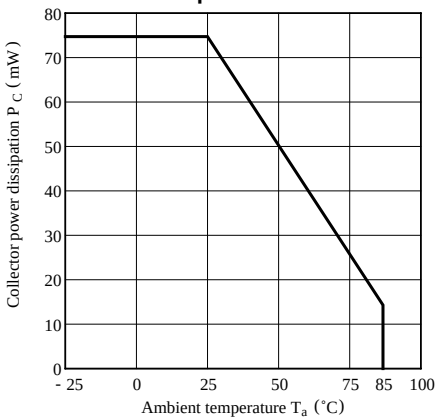


Fig. 2 Collector Dark Current vs. Ambient Temperature

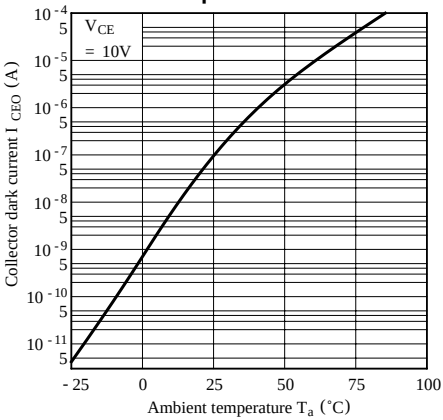


Fig. 3 Relative Collector Current vs. Ambient Temperature

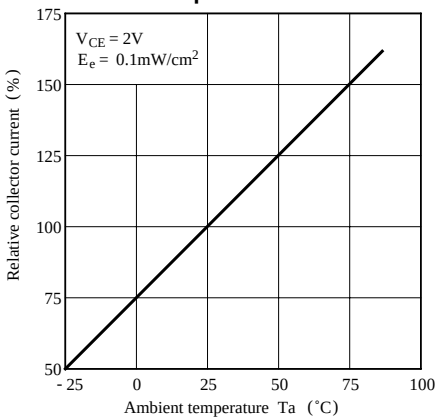


Fig.4-a Collector Current vs. Irradiance (PT481)

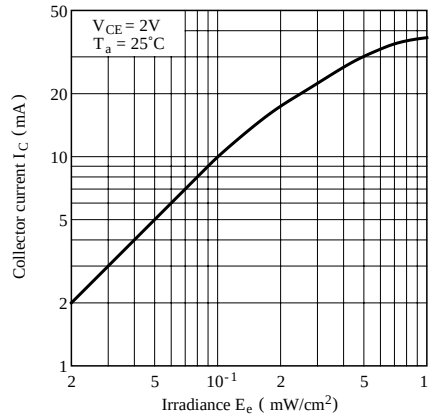


Fig.4-b Collector Current vs. Irradiance (PT481F/PT483F1)

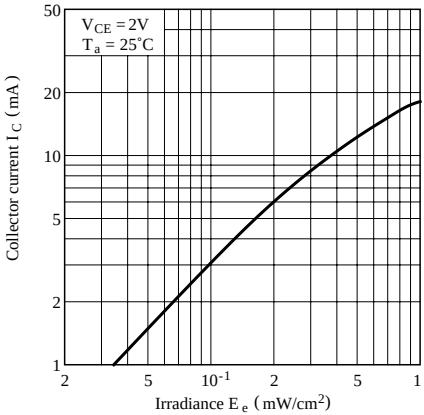


Fig.5-a Collector Current vs. Collector-emitter Voltage (PT481)

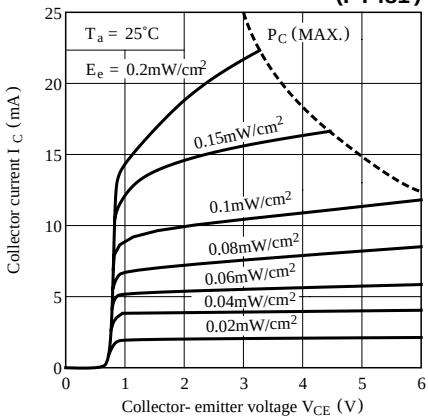


Fig.5-b Collector Current vs. Collector-emitter Voltage (PT481F/PT483F1)

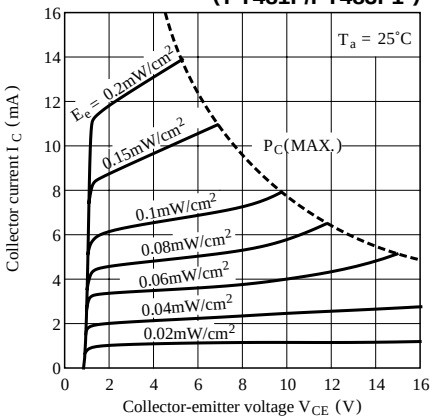


Fig. 6 Spectral Sensitivity

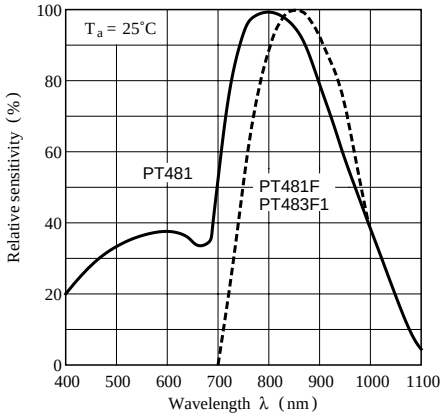
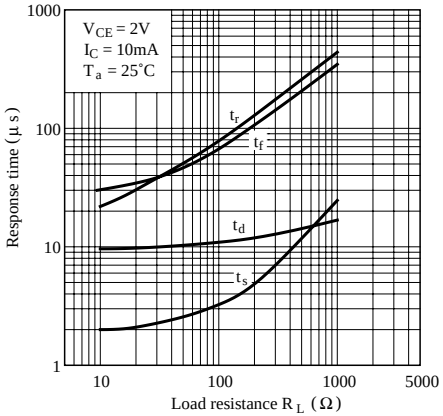


Fig. 7 Response Time vs. Load Resistance



Test Circuit for Response Time

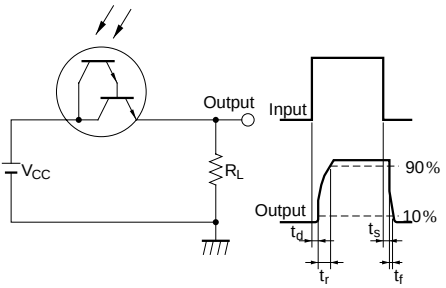


Fig. 8 Sensitivity Diagram

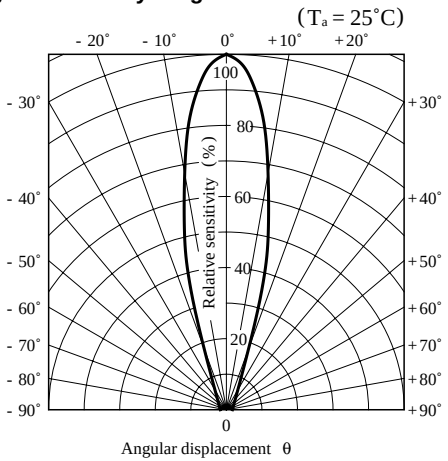


Fig.9-a Collector-emitter Saturation Voltage vs. Irradiance (PT481)

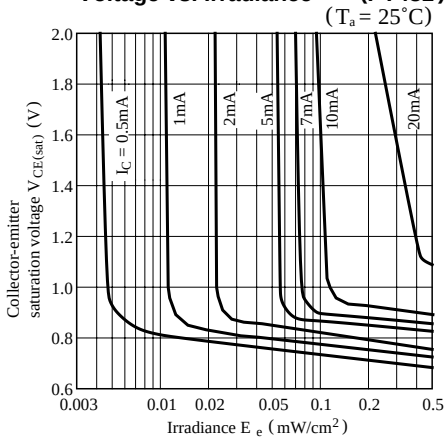


Fig.9-b Collector-emitter Saturation Voltage vs. Irradiance (PT481F/PT483F1)

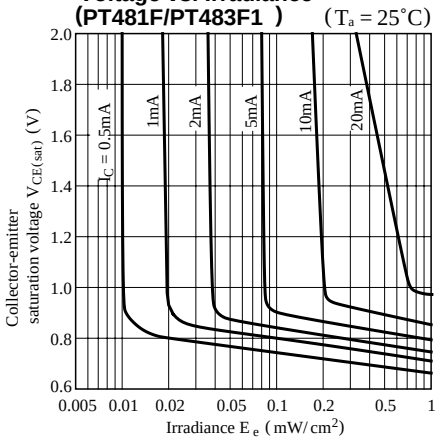
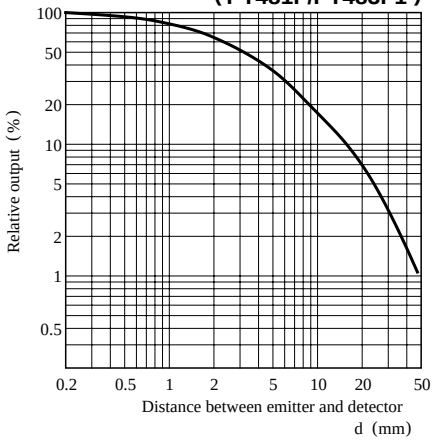


Fig.10 Relative Output vs. Distance (Emitter : GL480) (PT481F/PT483F1)



● Please refer to the chapter " Precautions for Use."

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