

PT481/PT481F/ PT483F1

Narrow Acceptance **High Sensitivity** Phototransistor

■ Features

1. Epoxy resin package
2. Narrow acceptance ($\Delta\theta$: Typ. $\pm 13^\circ$)
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 :PT481 F/PT483F1
5. Long lead pin type **PT483F1**

■ Applications

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

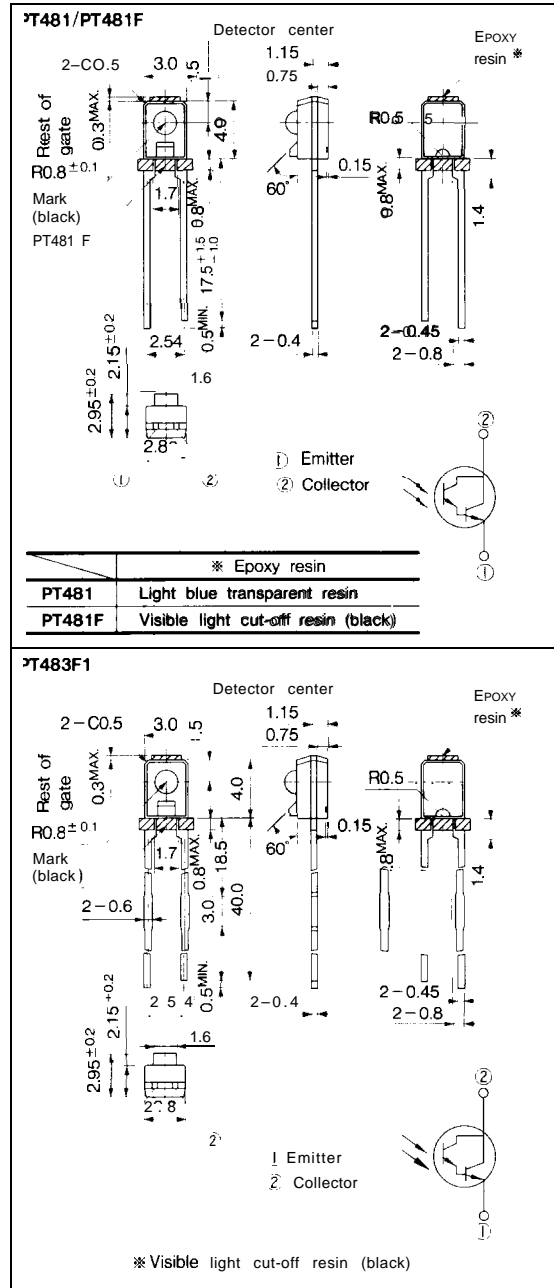
■ Absolute Maximum Ratings (Ta = 25°C)

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
*Soldering temperature	T_{sol}	260	°C

*1For 3seconds at the position of 1.4mm from the bottom face of resin package

■ Outline Dimensions

(Unit : mm)



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Electro-optical Characteristics

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

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*Collector current	PT481	I_c	$V_{CE} = 2V$ $E_e = 0.1\text{mW}/\text{cm}^2$	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
*Collator -emitter saturation voltage		$V_{CE(sat)}$	$I_c = 2.5\text{mA}$ $E_e = 1\text{mW}/\text{cm}^2$		0.7	1.0	V
Peak emission wavelength	PT481	λ_p		—	800	—	nm
	PT481F/PT483F1			—	860	—	nm
Response time	Rise time	t_r	$V_{CE} = 2V, I_c = 10\text{mA}$ $R_L = 100\Omega$	—	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

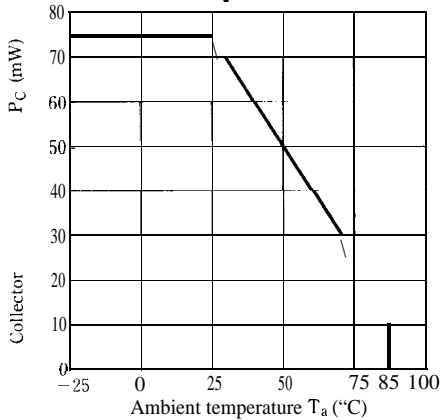


Fig. 2 Collector Dark Current vs. Ambient Temperature

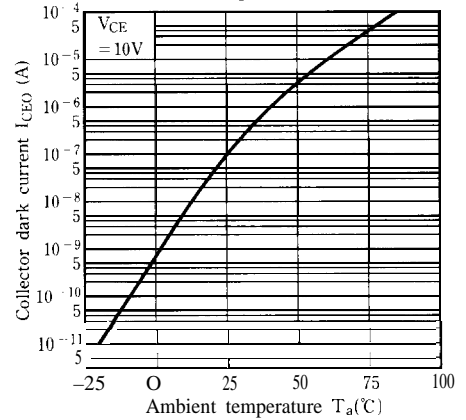


Fig. 3 Relative Collector Current vs. Ambient Temperature

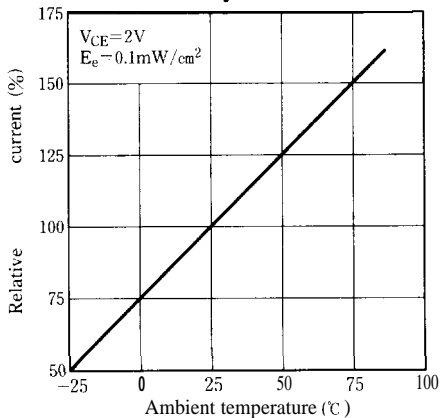


Fig.4-a Collector Current vs. Irradiance (PT481)

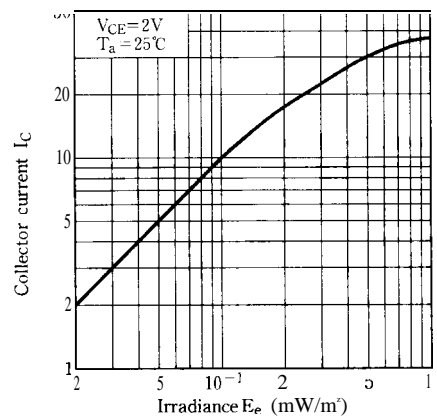


Fig.4-b Collector Current vs. Irradiance
(PT481F/PT483F1)

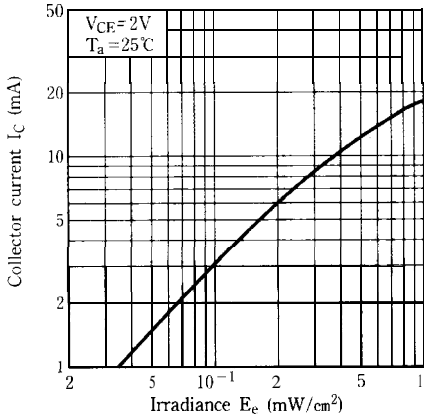


Fig.5-b Collector Current vs. Collector-emitter Voltage
(PT481F/PT483F1)

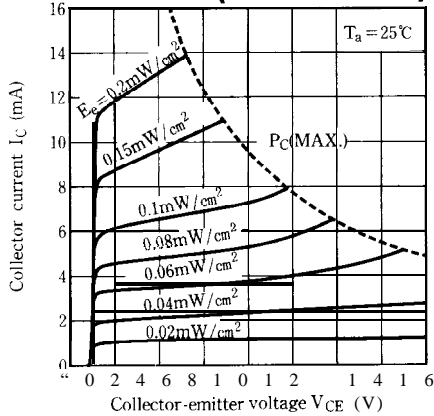


Fig. 7 Response Time vs. Load Resistance

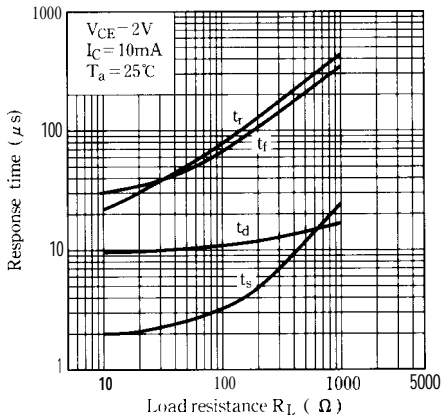


Fig.5-a Collector Current vs. Collector-emitter Voltage
(PT481)

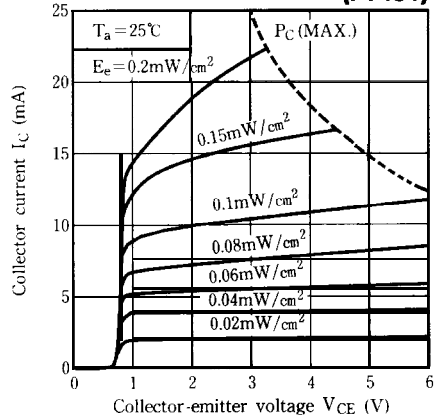
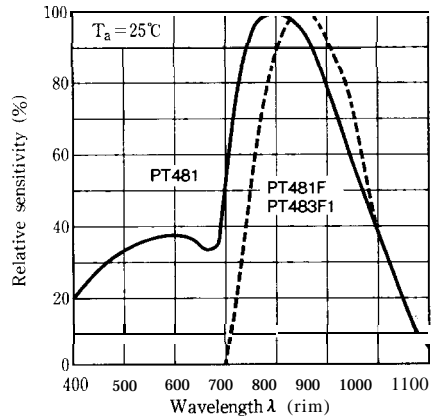
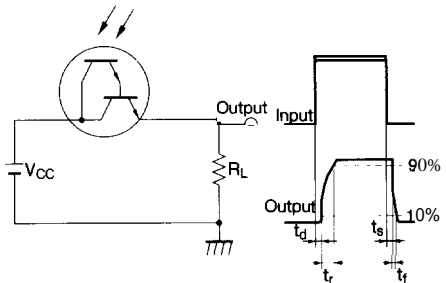


Fig. 6 Spectral Sensitivity



Test Circuit for Response Time



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Fig. 8 Sensitivity Diagram

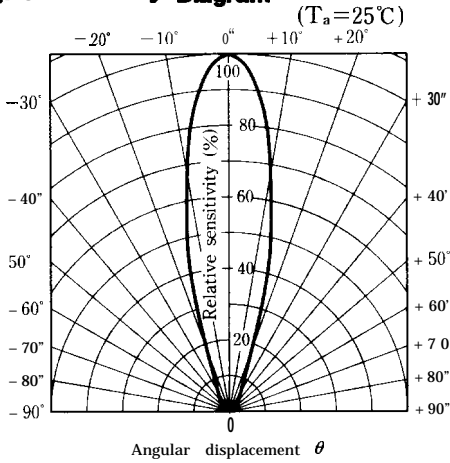


Fig.9-a Collector-emitter Saturation Voltage vs. Irradiance (PT481)

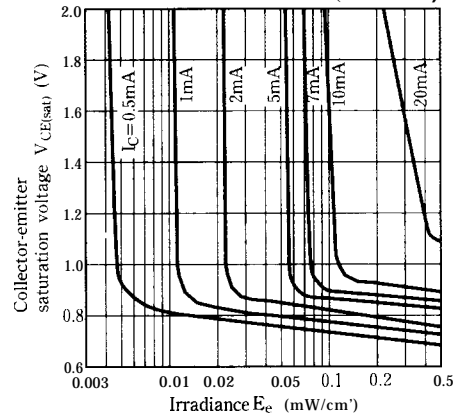


Fig.9-b Collector-emitter Saturation Voltage vs. Irradiance (PT481F/PT483F1) ($T_a = 25^\circ\text{C}$)

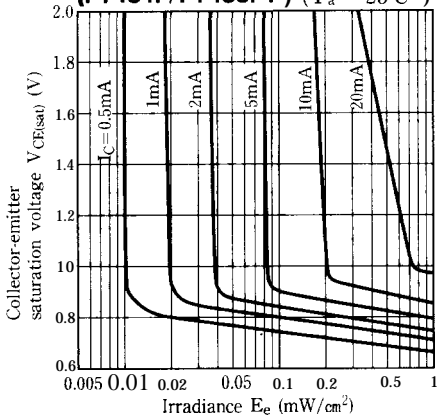
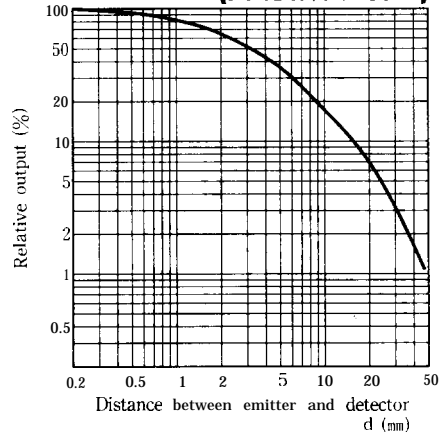


Fig.10 Relative Output vs. Distance (Emitter : GL480) (PT481F/PT483F1)



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