# PT481/PT481F/ PT483F1

### **■** 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

 $(I_C: MIN, 0.9mA \text{ at } E_e = 0.1mW/cm^2):$ 

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

## ■ Absolute Maximum Ratings $(Ta = 25^{\circ}C)$

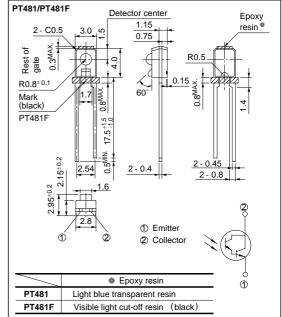
Parameter	Symbol	Rating	Unit		
Collector-emitter voltage	V <sub>CEO</sub>	35	V		
Emitter-collector voltage	V <sub>ECO</sub>	6	V		
Collector current	Ic	50	mA		
Collector power dissipation	Pc	75	mW		
Operating temperature	T opr	- 25 to +85	°C		
Storage temperature	T stg	- 40 to +85	°C		
*1Soldering temperature	T sol	260	°C		

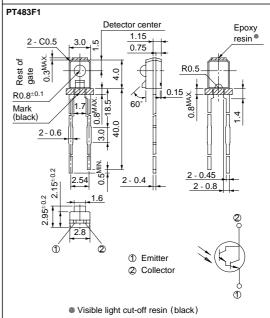
<sup>\*1</sup> For 3 seconds at the position of 1.4mm from the bottom face of resin package

# Narrow Acceptance High Sensitivity Phototransistor

### **■** Outline Dimensions

(Unit:mm)





### **■** Electro-optical Characteristics

 $(Ta = 25^{\circ}C)$ 

Paramete	er	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Collector current	PT481	Ic	$V_{CE} = 2V$ $E_e = 0.1 mW/cm^2$	1.5	10	25	mA
	PT481F			0.9	-	27	mA
	PT483F1			1.5	-	4.0	mA
Collector dark current		I <sub>CEO</sub>	$V_{CE} = 10V, E_e = 0$	-	-	10-6	Α
*2 Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	$\begin{split} I_c &= 2.5 mA \\ E_e &= 1 mW/cm^2 \end{split}$	-	0.7	1.0	V
Peak emission	PT481	$\lambda_{p}$	2	-	800	-	nm
wavelength	PT481F/PT483F1		Λ <sub>p</sub> _	-	860	-	nm
Response time	Rise time	t <sub>r</sub>	$V_{CE} = 2V$ , $I_C = 10mA$	-	80	-	μs
	Fall time	$t_{\mathrm{f}}$	$R_L = 100\Omega$	-	70	-	μs

<sup>\*2</sup> E<sub>e</sub>: Irradiance by CIE standard light source A (tungsten lamp)

Fig. 1 Collector Power Dissipation vs.
Ambient Temperature

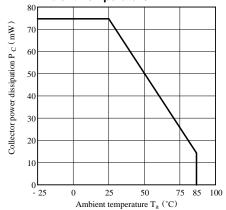


Fig. 3 Relative Collector Current vs.
Ambient Temperature

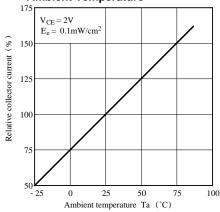


Fig. 2 Collector Dark Current vs.
Ambient Temperature

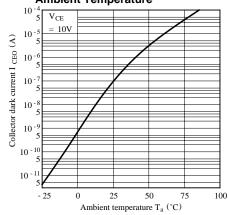


Fig.4-a Collector Current vs. Irradiance (PT481)

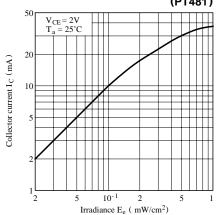


Fig.4-b Collector Current vs. Irradiance (PT481F/PT483F1)

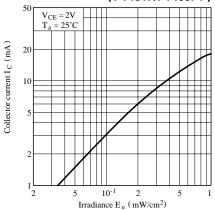


Fig.5-b Collector Current vs.
Collector-emitter Voltage
(PT481F/PT483F1)

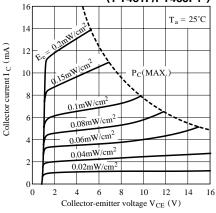


Fig. 7 Response Time vs. Load Resistance

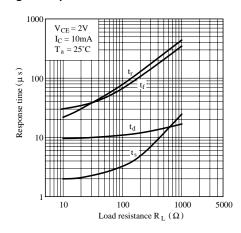


Fig.5-a Collector Current vs.
Collector-emitter Voltage

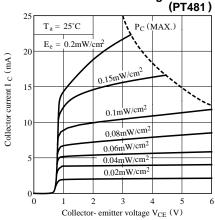
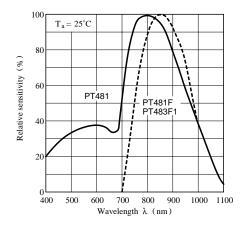


Fig. 6 Spectral Sensitivity



**Test Circuit for Response Time** 

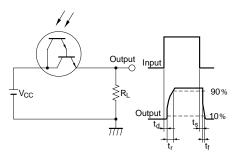


Fig. 8 Sensitivity Diagram

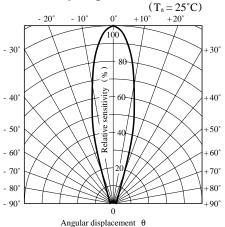
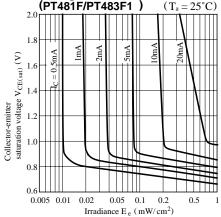


Fig.9-b Collector-emitter Saturation Voltage vs. Irradiance



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

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

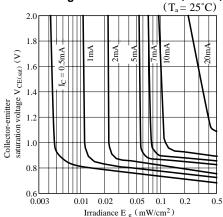
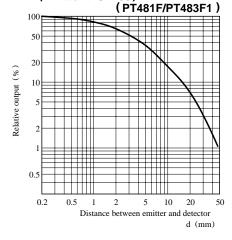


Fig.10 Relative Output vs. Distance (Emitter: GL480)



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