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# PD480PI/PD480PI1

## High Speed, Narrow Acceptance Photodiodes

### ■ Features

1. High speed response ( $t_r, t_f$ : TYP. 100ns at  $R_L = 1k\Omega$ )
2. Narrow acceptance ( $\Delta\theta$ : TYP.  $\pm 20^\circ$ )
3. Compact
4. Lead forming type (**PD480PI1**)

### ■ Applications

1. Game machines
2. Optoelectronic switches
3. Infrared remote controllers for TVs, VCRs, audio equipment, air conditioners, etc.

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Reverse voltage	$V_R$	20	V
Power dissipation	P	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 2.5mm from the surface of resin edge

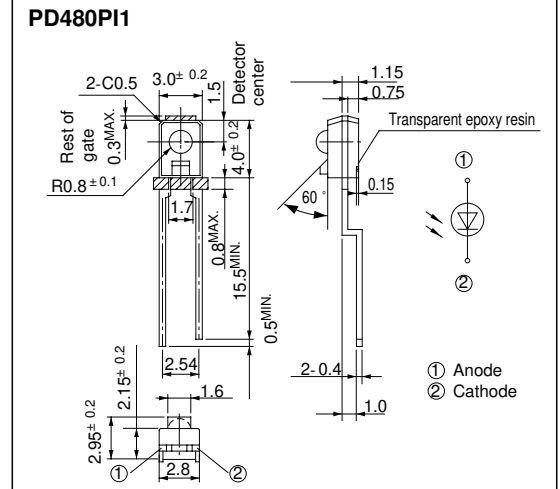
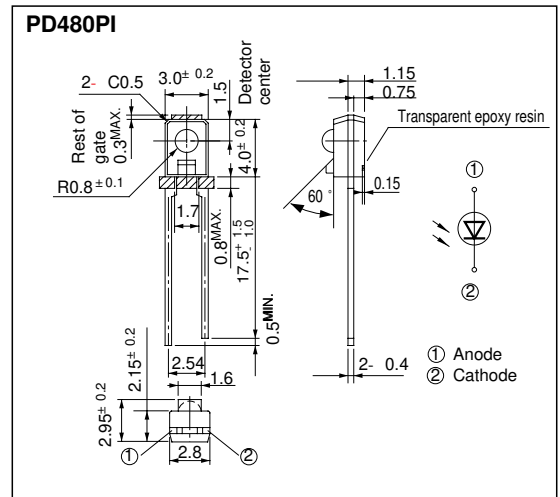
### ■ Electro-optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit current	$I_{SC}$	$E_V = 100 \text{ lx}$	1.0	1.7	2.4	$\mu\text{A}$
Dark current	$I_d$	$V_R = 10V, E_V = 0$	-	-	10	nA
Terminal capacitance	$C_t$	$V_R = 0, f = 1\text{MHz}$	-	4.0	10	pF
Peak sensitivity wavelength	$\lambda_p$	-	-	950	-	nm
Response time	$t_r, t_f$	$R_L = 1k\Omega, V_R = 10V$	-	100	250	ns
Half intensity angle	$\Delta\theta$	-	-	$\pm 20$	-	°

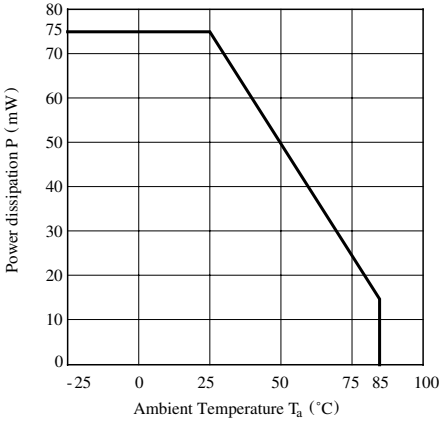
\*2 E<sub>v</sub>: Illuminance by CIE standard light source A (tungsten lamp)

### ■ Outline Dimensions

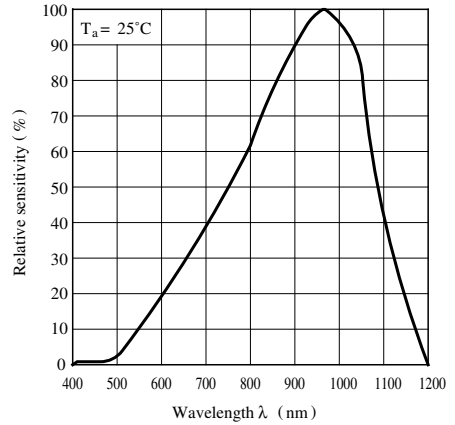
(Unit: mm)



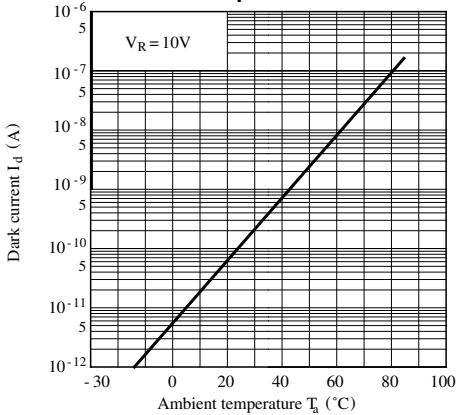
**Fig. 1 Power Dissipation vs. Ambient Temperature**



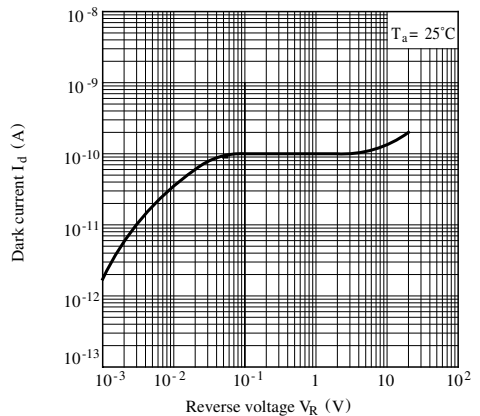
**Fig. 2 Spectral Sensitivity**



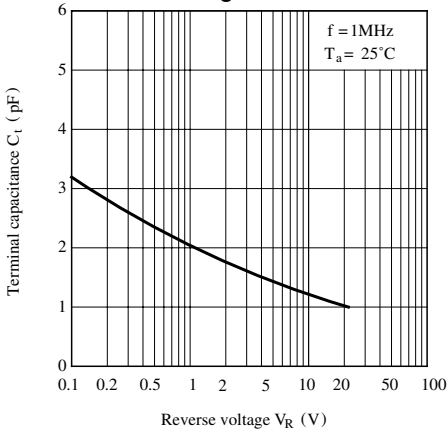
**Fig. 3 Dark Current vs. Ambient Temperature**



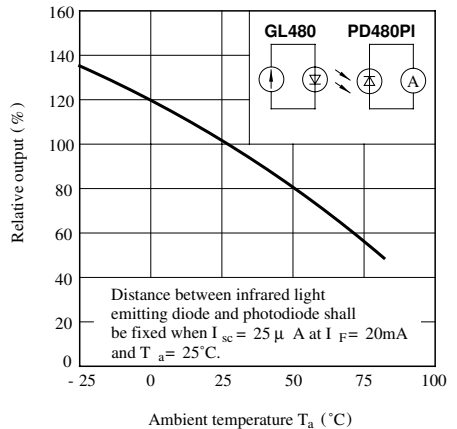
**Fig. 4 Dark Current vs. Reverse Voltage**



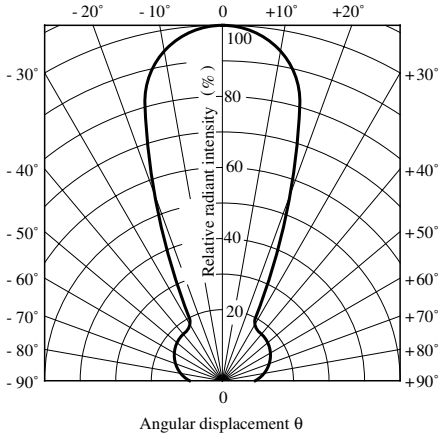
**Fig. 5 Terminal Capacitance vs. Reverse Voltage**



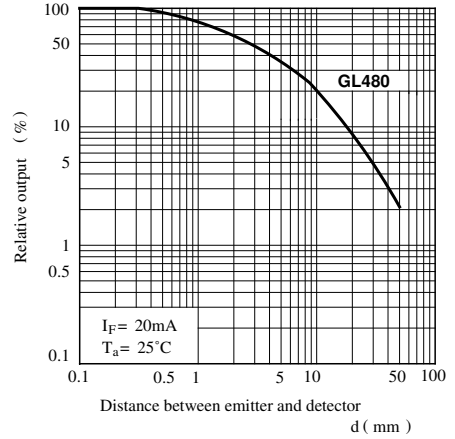
**Fig. 6 Relative Output vs. Ambient Temperature**



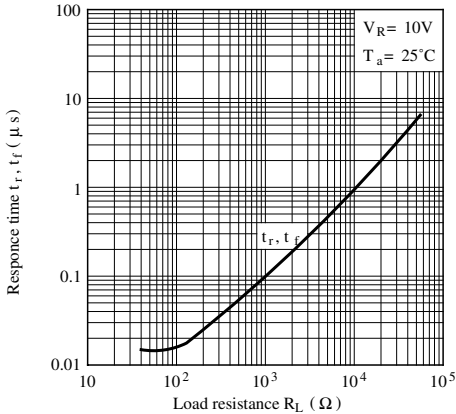
**Fig. 7 Sensitivity Diagram** ( $T_a = 25^\circ\text{C}$ )



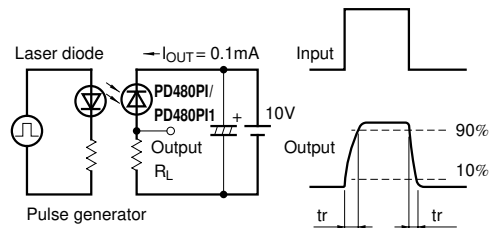
**Fig. 8 Relative Output vs. Distance**



**Fig. 9 Response Time vs. Load Resistance**



**Test Circuit for Response Time**



● Please refer to the chapter “Precautions for Use.”

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    - Test and measurement equipment
    - Industrial control
    - Audio visual equipment
    - Consumer electronics
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    - Traffic signals
    - Gas leakage sensor breakers
    - Alarm equipment
    - Various safety devices, etc.
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