

PD49PI/PD481PI

High Speed, High Sensitivity Photodiode

■ Features

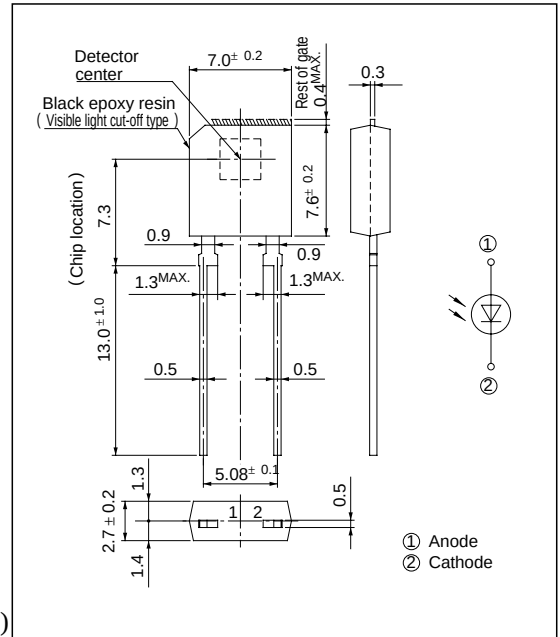
1. High sensitivity
($I_{SC} \geq 3.5 \mu A$ at $E_V = 100lx$: **PD481PI**)
2. Peak sensitivity wavelength matching with infrared LED
($\lambda_p = 960nm$: **PD481PI**)
($\lambda_p = 1000nm$: **PD49PI**)
3. Built-in visible light cut-off filter

■ Applications

1. Infrared remote controllers for TVs, VCRs, audio equipment and air conditioners, etc.

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
Reverse voltage	V_R	32	V
Power dissipation	P	150	mW
Operating temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-40 to +100	°C
*1 Soldering temperature	T_{sol}	260	°C

*For 10 seconds at the position of 2.3mm from the bottom face of resin package

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit current	PD49PI	$E_V = 100lx$	2.4	3	-	μA
	PD481PI		3.5	5	-	
*2 Short circuit current temperature coefficient	β_T	$E_V = 100lx$	-	0.2	-	%/°C
Dark current	I_d	$V_R = 10V$	-	1	30	nA
Dark current temperature coefficient	α_T	$V_R = 10V$	-	3.5	5	times/10°C
Terminal capacitance	C_t	$V_R = 3V, f = 1MHz$	-	20	50	pF
Peak sensitivity wavelength	PD49PI	λ_p	-	1 000	-	nm
	PD481PI		910	960	1 010	

*2 E_V : Illuminance by CIE standard light source A (tungsten lamp)

Fig. 1 Power Dissipation vs. Ambient Temperature

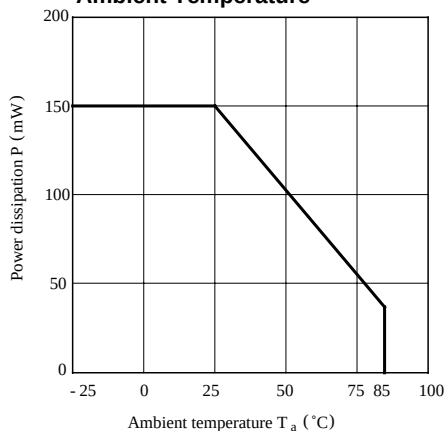


Fig. 2 Spectral Sensitivity

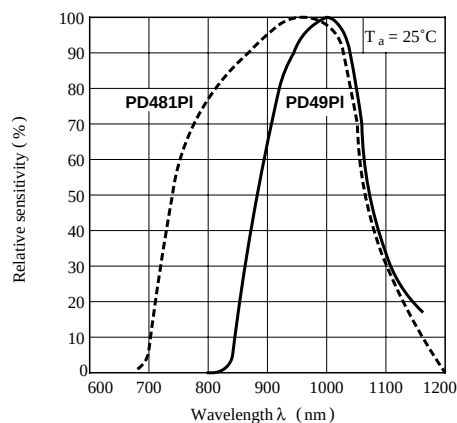


Fig. 3 Dark Current vs. Ambient Temperature

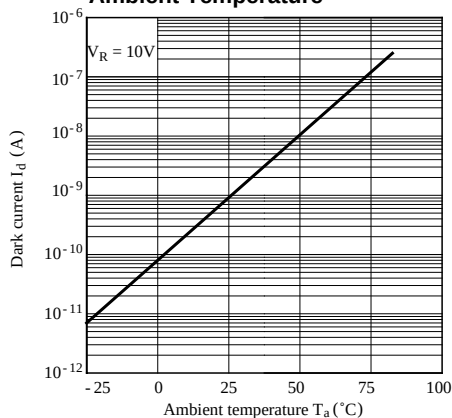


Fig. 4 Dark Current vs. Reverse Voltage

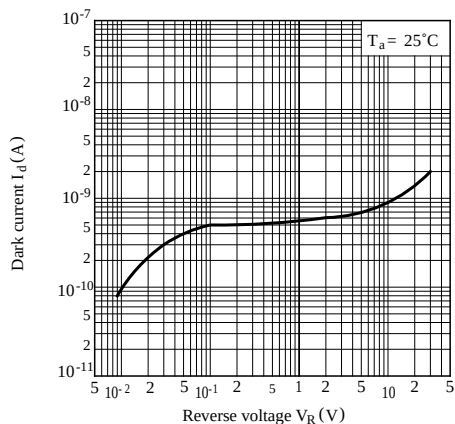


Fig. 5 Terminal Capacitance vs. Reverse Voltage

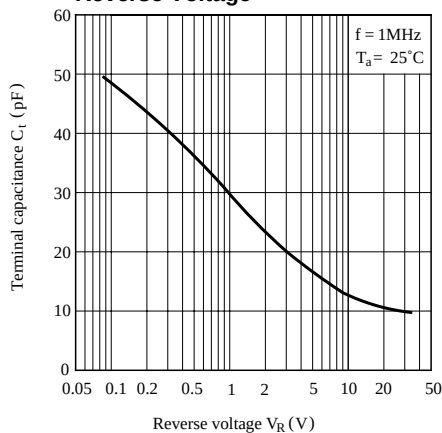


Fig. 6 Relative Output vs. Ambient Temperature
(Emitter : GL537/GL538, Detector : PD49PI/PD481PI)

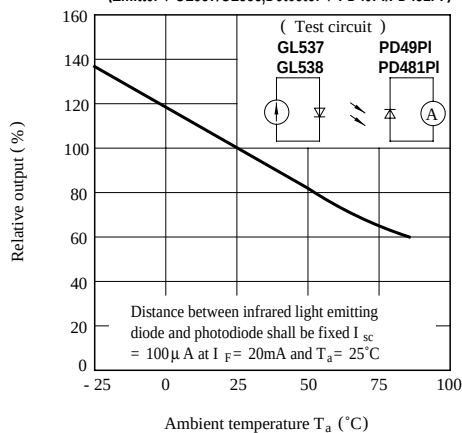


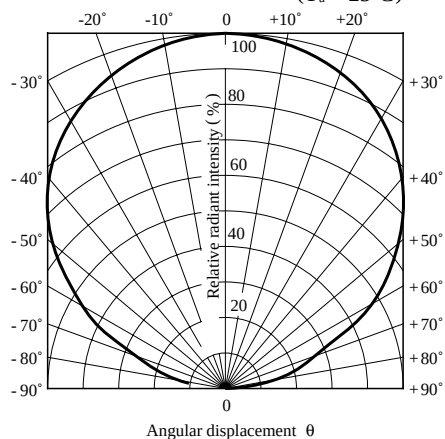
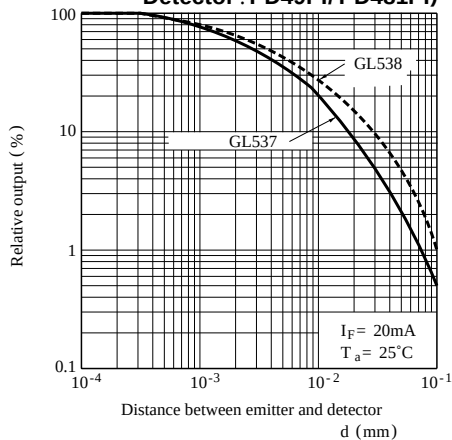
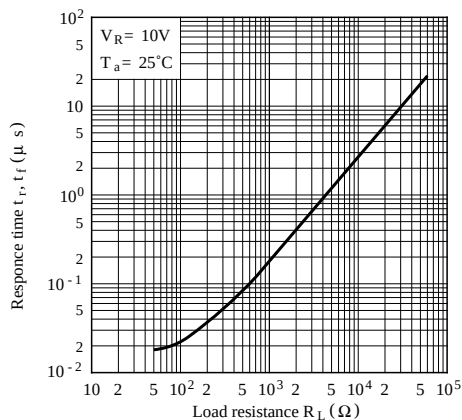
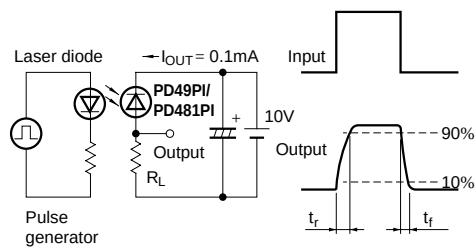
Fig. 7 Sensitivity Diagram ($T_a = 25^\circ\text{C}$)Fig. 8 Relative Output vs. Distance
(Emitter:GL537/GL538
Detector : PD49PI/ PD481PI)

Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time



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