# PD49PI/PD481PI

#### Features

- 1. High sensitivity
  - (  $I_{sc}$ >=3.5 $\mu$ A at  $E_v$ = 100lx: **PD481PI**)
- Peak sensitivity wavelength matching with infrared LED
  (λ p= 960nm: PD481PI)
  - $(\lambda p = 900 \text{ mm}; PD40 \text{ PP})$
  - (λp= 1000nm: **PD49PI**)
- 3. Built-in visible light cut-off filter

### Applications

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

## High Speed, High Sensitivity Photodiode

#### Outline Dimensions (Unit: mm) $7.0^{\pm 0.2}$ Detector ₽₫ center Rest P O Black epoxy resin ( Visible light cut-off type 0.2 (Chip location) 7.6± 7.3 0.9 T 0.9 1.3<sup>MAX.</sup> 1.3<sup>MAX.</sup> $13.0^{\pm 1.0}$ 0.5 0.5 5.08<sup>± 0.1</sup> ŝ 0.5 Anode ② Cathode $(Ta = 25^{\circ}C)$

### Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Reverse voltage	VR	32	V
Power dissipation	Р	150	mW
Operating temperature	T <sub>opr</sub>	- 25 to + 85	°C
Storage temperature	T <sub>stg</sub>	- 40 to + 100	°C
*1 Soldering temperature	T <sub>sol</sub>	260	°C

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

### Electro-optical Characteristics

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

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit	PD49PI	Isc	$E_{v} = 100 lx$	2.4	3	-	Onit
	PD481PI			3.5	5	-	μΑ
*2 Short circuit current temperature coefficient		βт	Ev= 100lx	-	0.2	-	% /°C
Dark current		Id	V <sub>R</sub> = 10V	-	1	30	nA
Dark current temperature coefficient		α <sub>T</sub>	$V_R = 10V$	-	3.5	5	times/10°C
Terminal capacitance		Ct	$V_R = 3V, f = 1MHz$	-	20	50	pF
Peak sensitivity	Peak sensitivity PD49PI	λp		-	1 000	-	
wavelength	PD481PI	Λ P	-	910	960	1 010	nm

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

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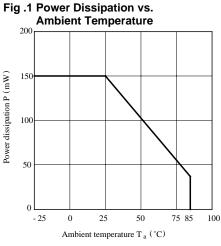
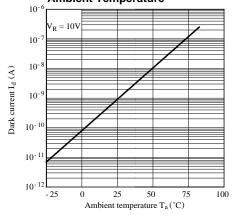
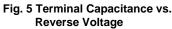
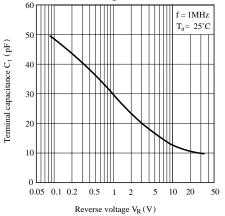


Fig. 3 Dark Current vs. Ambient Temperature







#### Fig. 2 Spectral Sensitivity

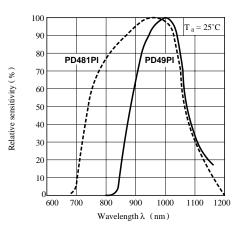


Fig. 4 Dark Current vs. Reverse Voltage

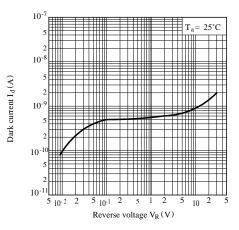
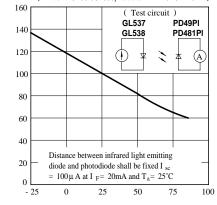
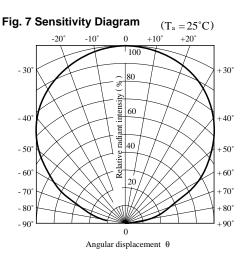


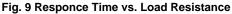
Fig. 6 Relative Output vs. Ambient Temperature (Emitter : GL537/GL538,Detector : PD49PI/PD481PI)

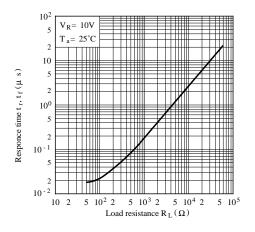


Relative output (%)

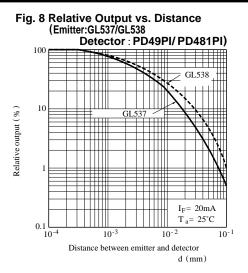




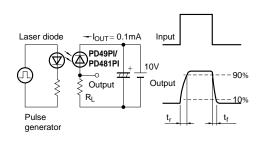




• Please refer to the chapter "Precautions for Use."



#### **Test Circuit for Responce Time**



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