

T-41-53

# PD43PI High Speed Photodiode

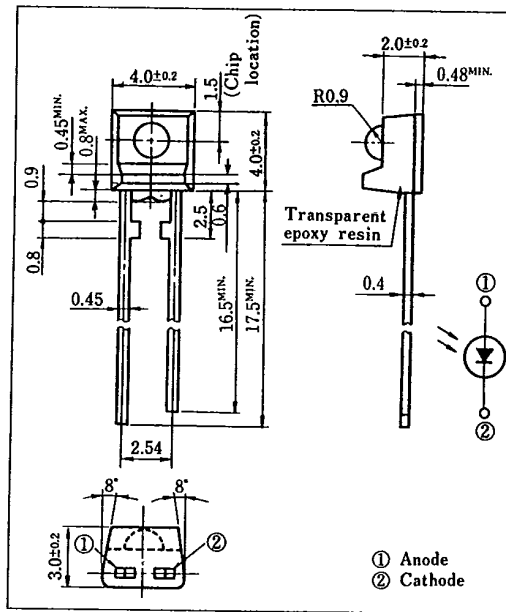
## Features

1. High speed response  
( $t_r, t_f$ : TYP. 100ns at  $R_L=1k\Omega$ )
2. Intermediate acceptance ( $\Delta\theta$ : TYP.  $\pm 25^\circ$ )
3. Transparent epoxy resin package

## Applications

1. Smoke detectors, optoelectronic switches
2. High speed light signal detection

## Outline Dimensions (Unit : mm)



## Absolute Maximum Ratings

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

Parameter	Symbol	Rating	Unit
Reverse voltage	$V_R$	20	V
Power dissipation	P	75	mW
Operating temperature	$T_{opr}$	-25 ~ +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 ~ +85	$^\circ\text{C}$
*1 Soldering temperature	$T_{sol}$	260	$^\circ\text{C}$

\*1 For 3 seconds at the position of 2.5mm from the bottom face of resin package

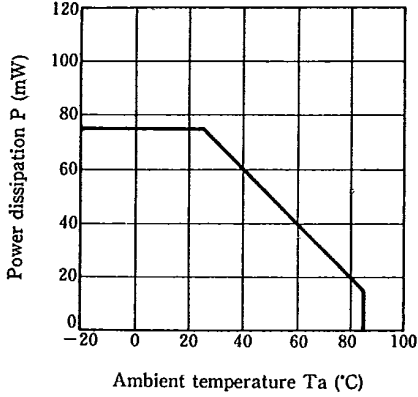
## Electro-optical Characteristics

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

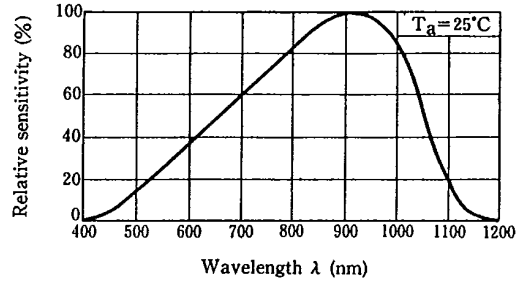
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit current	$I_{sc}$	$E_v=100 \ell x$	1.0	1.7	2.4	$\mu\text{A}$
Dark current	$I_d$	$V_R=10\text{V}$	—	—	10	nA
Terminal capacitance	$C_t$	$V_R=0, f=1\text{MHz}$	—	5	—	pF
Peak sensitivity wavelength	$\lambda_p$		—	920	—	nm
Response time	$t_r, t_f$	$R_L=1k\Omega, V_R=10\text{V}$	—	100	—	ns

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

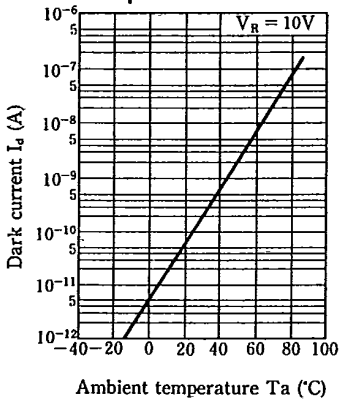
**Fig. 1 Power Dissipation vs. Ambient Temperature**



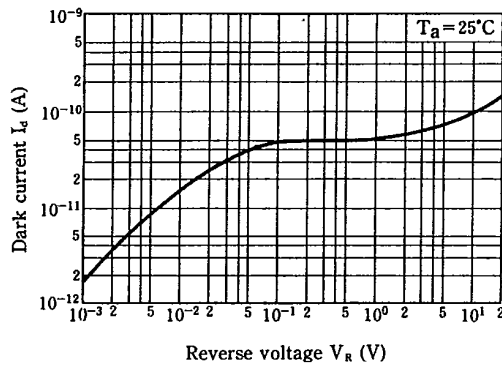
**Fig. 2 Spectral Sensitivity**



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

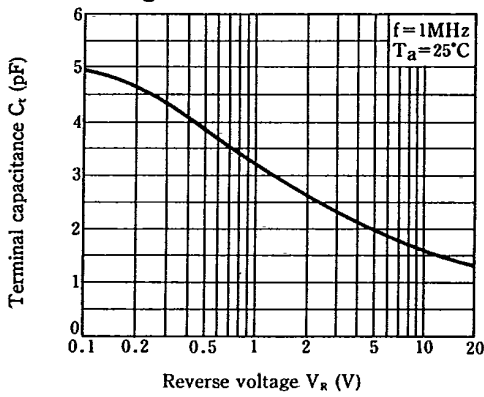


**Fig. 4 Dark Current vs. Reverse Voltage**



4

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



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

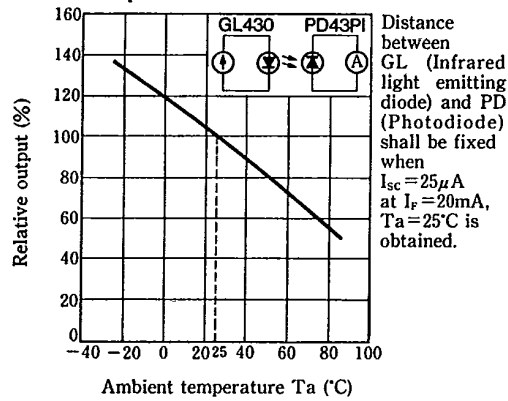


Fig. 7 Sensitivity Diagram

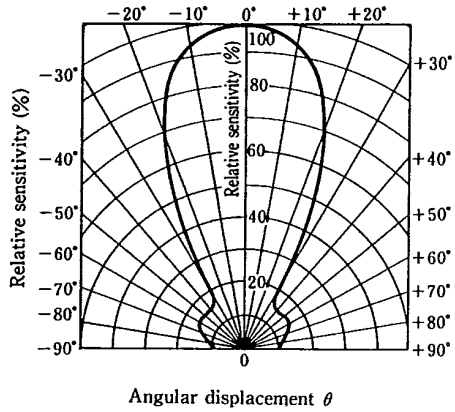


Fig. 8 Relative Output vs. Distance

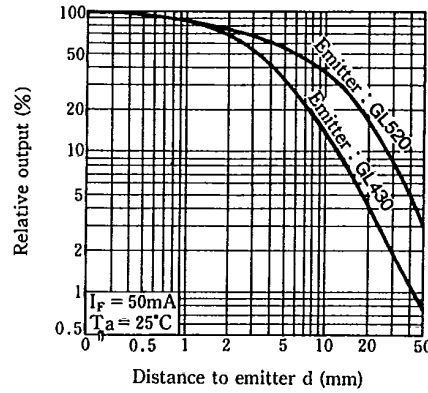
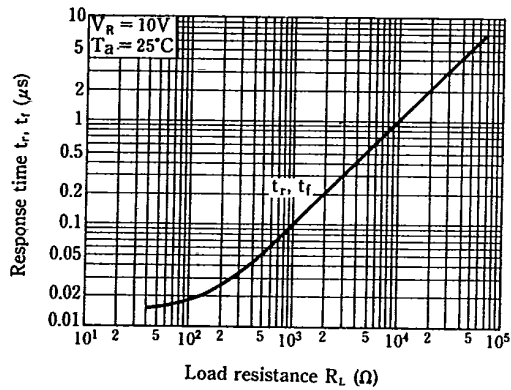


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

