



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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PD413PI

High Speed Type Photodiode

■ Features

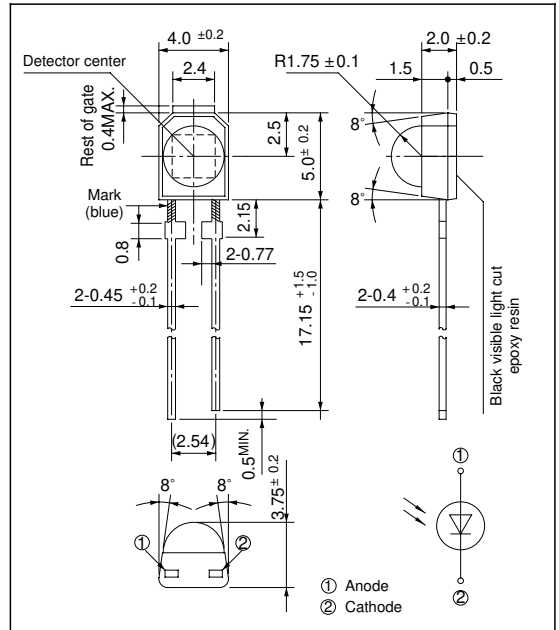
- Built-in visible light cut-off filter
(Sensitivity wavelength range : 750 to 1070 nm)
- Half intensity angle : $\Delta\theta : \pm 45^\circ$

■ Applications

- Portable information terminal equipment
- Personal computers
- Printers

■ 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

*1 For 5 seconds at the position of 2.15 mm from bottom face of resin package

■ Electro-optical Characteristics

(Ta=25 °C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Shortcircuit current	I_{SC}	$E_v^{*2} = 100 \text{ lx}$	4.5	5.4	8.1	μA
Dark current	I_d	$V_R = 10\text{V}, E_v = 0$	-	-	10	nA
Forward voltage	V_F	$I_F = 1\text{mA}$	-	-	1	V
Terminal capacitance	C_t	$V_R = 3\text{V}, f = 1\text{MHz}$	-	20	35	pF
Peak sensitivity wavelength	λ_p	-	-	960	-	nm
Half intensity angle	$\Delta\theta$	-	-	± 45	-	°
Response time	t_r, t_f	$R_L = 1\text{k}\Omega, V_R = 10\text{V}$	-	200	-	ns

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

Fig. 1 Power Dissipation vs. Ambient Temperature

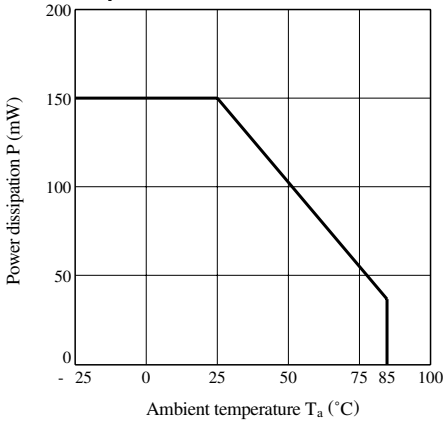


Fig. 2 Spectral Sensitivity

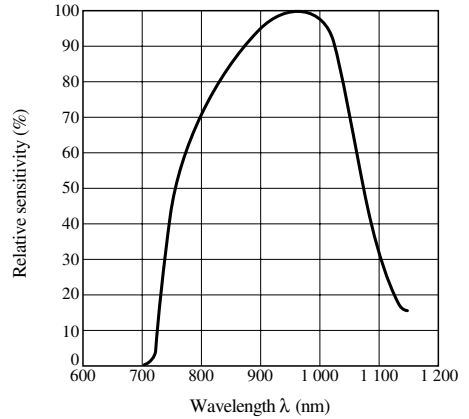


Fig. 3 Shortcircuit Current vs. Illuminance

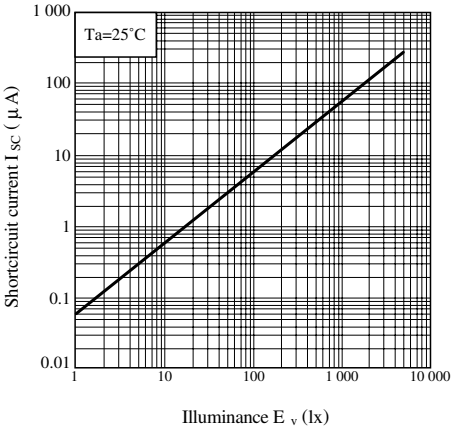


Fig. 4 Dark Current vs. Ambient Temperature

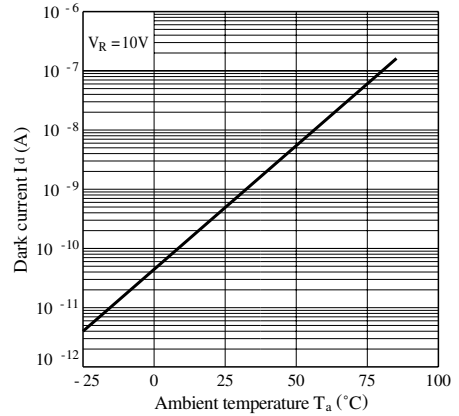


Fig. 5 Dark Current vs. Reverse Voltage

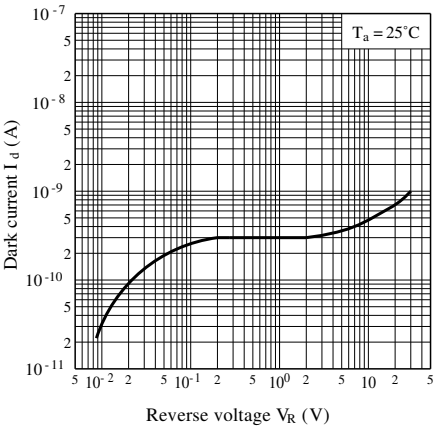


Fig. 6 Terminal Capacitance vs. Reverse Voltage

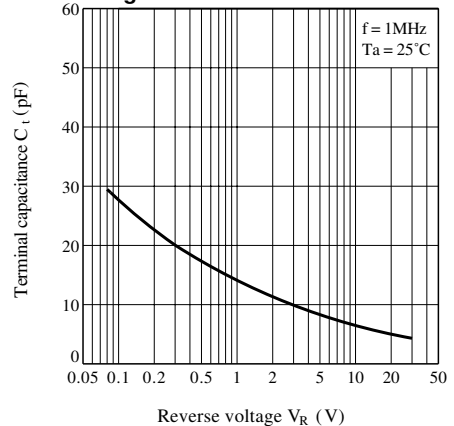


Fig. 7 Relative Output vs. Ambient Temperature
(Detector : GL537/GL538)

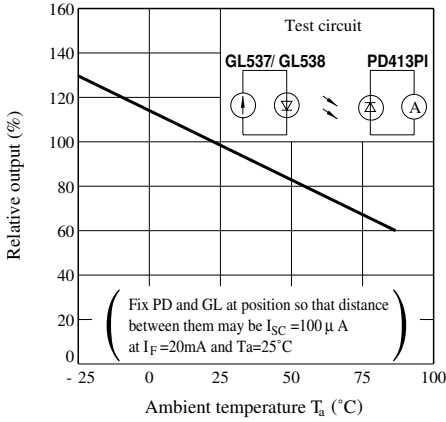


Fig. 8 Radiation Diagram ($T_a = 25^\circ\text{C}$)

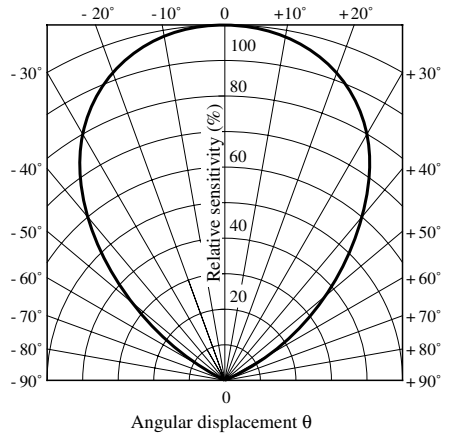


Fig. 9 Relative Output vs. Distance
(Detector : GL537/GL538)

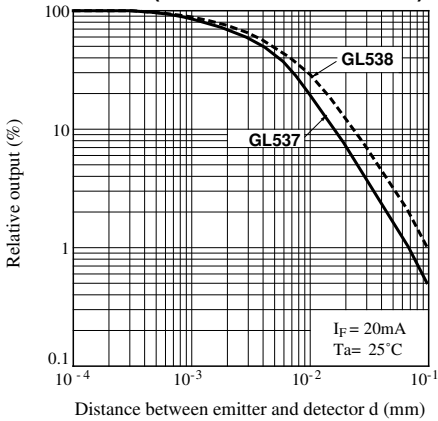
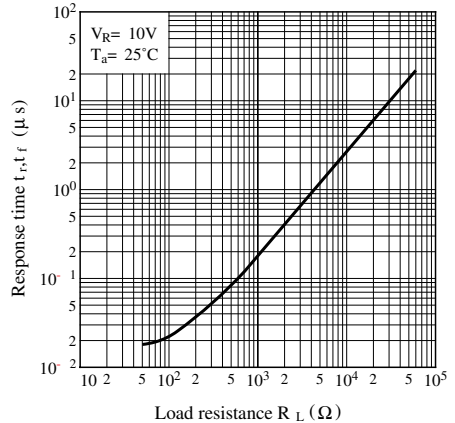
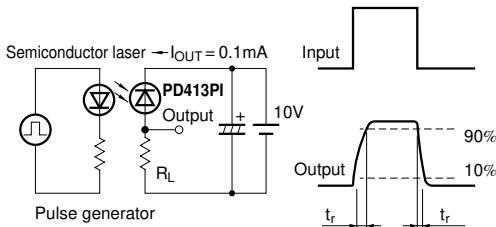


Fig. 10 Response Time vs. Load Resistance



Test Circuit for Response Time



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 - Audio visual equipment
 - Consumer electronics
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 - Gas leakage sensor breakers
 - Alarm equipment
 - Various safety devices, etc.
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