T-41-53

PD43PI High Speed Photodiode

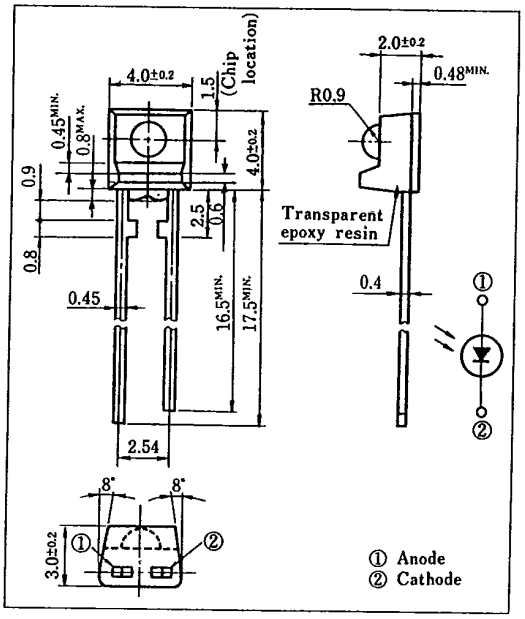
■ Features

1. High speed response
   (t_r, t_f: TYP. 100ns at R_L=1kΩ)
2. Intermediate acceptance ($\Delta\theta$: TYP. ±25°)
3. Transparent epoxy resin package

■ Applications

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

■ Outline Dimensions (Unit : mm)



■ 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~+85	°C
Storage temperature	T_{stg}	−40~+85	°C
*1Soldering temperature	T_{sol}	260	°C

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

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2Short circuit current	I_{SC}	E_V=100 ℓx	1.0	1.7	2.4	μA
Dark current	I_d	V_R=10V	—	—	10	nA
Terminal capacitance	C_t	V_R=0, f=1MHz	—	5	—	pF
Peak sensitivity wavelength	λ_p		—	920	—	nm
Response time	t_r, t_f	R_L=1kΩ, V_R=10V	—	100	—	ns

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

Fig. 1 Power Dissipation vs. Ambient Temperature

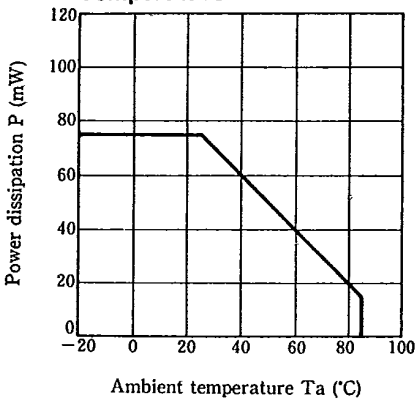


Fig. 2 Spectral Sensitivity

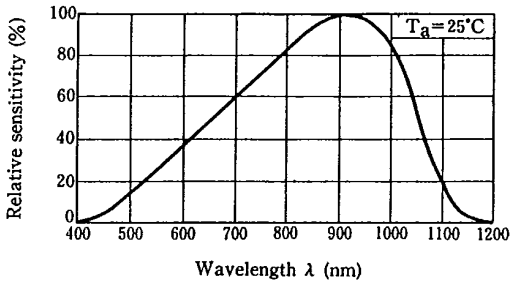


Fig. 3 Dark Current vs. Ambient Temperature

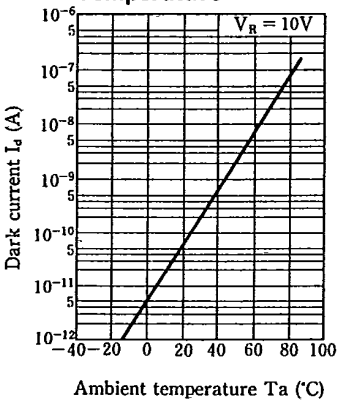


Fig. 4 Dark Current vs. Reverse Voltage

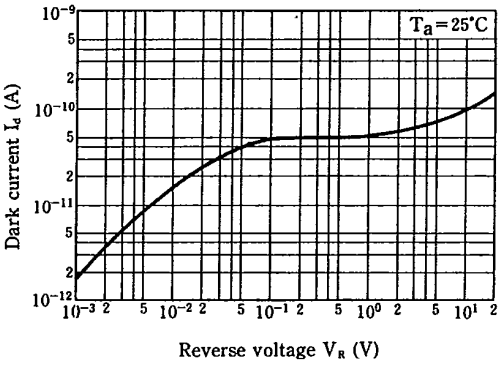


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Fig. 5 Terminal Capacitance vs. Reverse Voltage

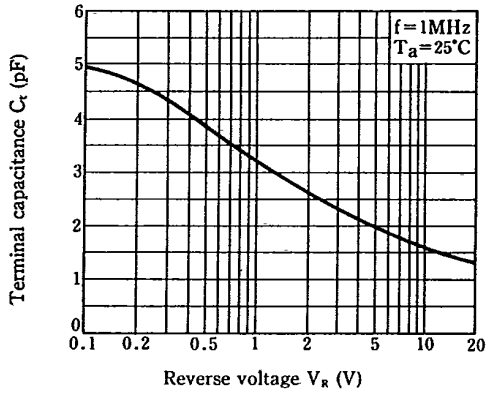
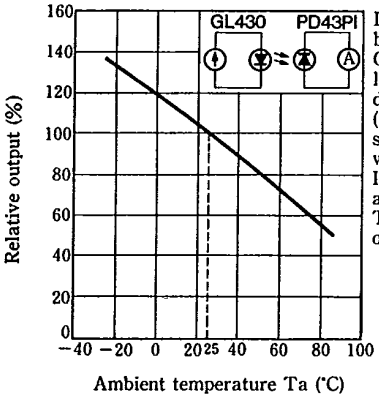


Fig. 6 Relative Output vs. Ambient Temperature



Distance between GL (Infrared light emitting diode) and PD (Photodiode) shall be fixed when $I_{sc}=25\mu A$ at $I_F=20mA$, Ta=25°C is obtained.

Fig. 7 Sensitivity Diagram

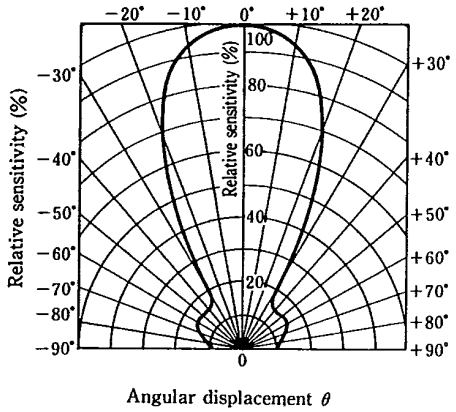


Fig. 8 Relative Output vs. Distance

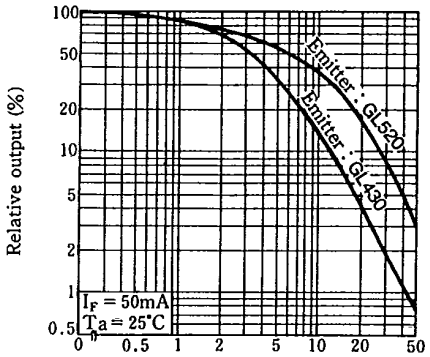
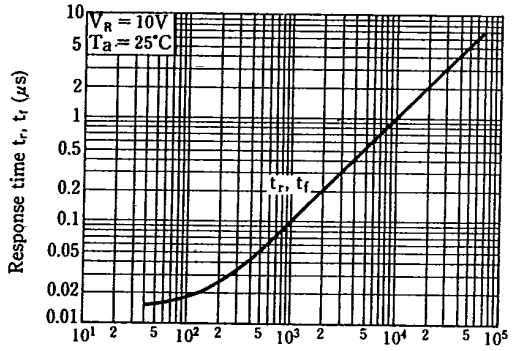


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time