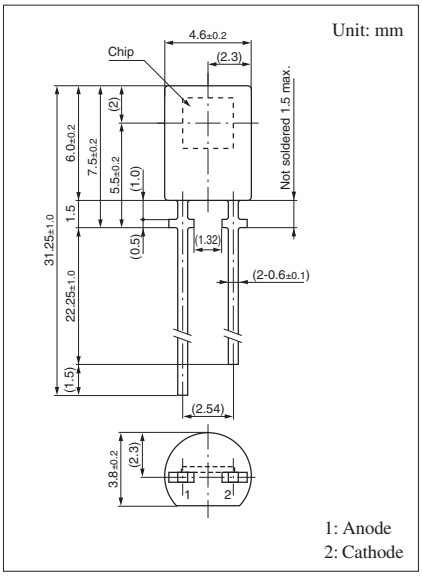
PNZ327 (PN327)

Silicon planar type

For optical control systems



■ Features

- Fast response which is well suited to high speed modulated light detection: t_r , t_f = 50 ns (typ.)
- High sensitivity, high reliability
- Peak emission wavelength matched with infrared light emitting diodes: λ_p = 900 nm (typ.)
- Wide detection area, wide half-power angle: θ = 70° (typ.)

■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Reverse voltage	V_R	30	V
Power dissipation	P_D	100	mW
Operating ambient temperature	T_{opr}	−30 to +85	°C
Storage temperature	T_{stg}	−40 to +100	°C

■ Electrical-Optical Characteristics T_a = 25°C

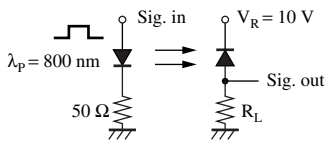
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Dark current	I_D	V_R = 10 V		5	50	nA
Photocurrent *1	I_L	V_R = 10 V, L = 1 000 lx		70		μA
Sensitivity to infrared radiation *2	S_{IR}	V_R = 5 V, H = 0.1 mW/cm^2	4.5			μA
Peak emission wavelength	λ_p	V_R = 10 V		900		nm
Rise time *3	t_r	V_R = 10 V, R_L = 1 kΩ		50		ns
Fall time *3	t_f			50		ns
Rise time *3	t_r	V_R = 10 V, R_L = 100 kΩ		5		μs
Fall time *3	t_f			5		μs
Terminal capacitance	C_t	V_R = 0 V, f = 1 MHz		70		pF
Half-power angle	θ	The angle from which photocurrent becomes 50%		70		°

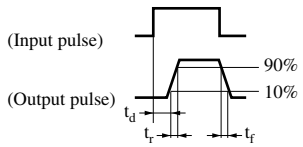
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

2. *1: Source: Tungsten (color temperature 2 856 K)

*2: Source: Infrared radiation (λ = 940 nm)

*3: Switching time measurement circuit





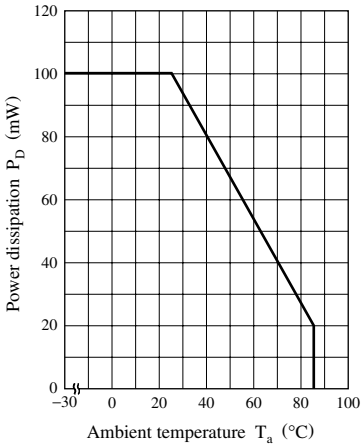
t_d: Delay time

t_r: Rise time (Time required for the collector photocurrent to increase from 10% to 90% of its final value)

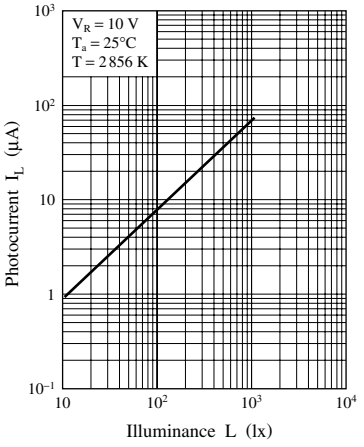
t_f: Fall time (Time required for the collector photocurrent to decrease from 90% to 10% of its initial value)

Note) The part number in the parenthesis shows conventional part number.

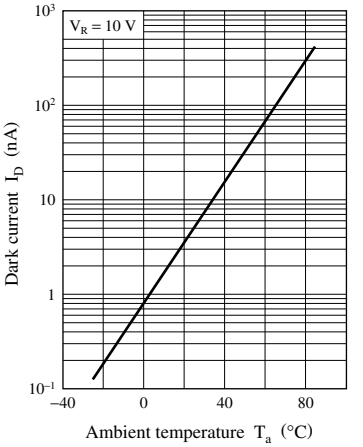
P_D — T_a



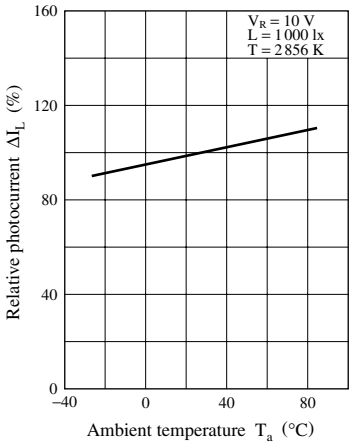
I_L — L



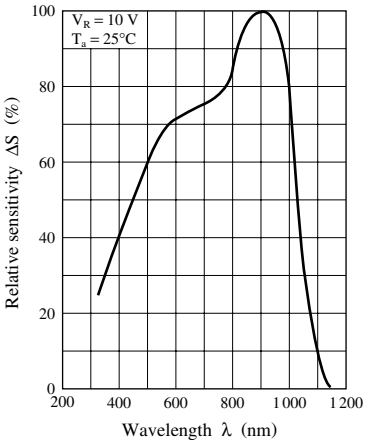
I_D — T_a



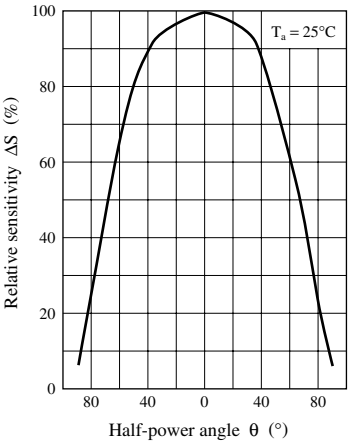
ΔI_L — T_a



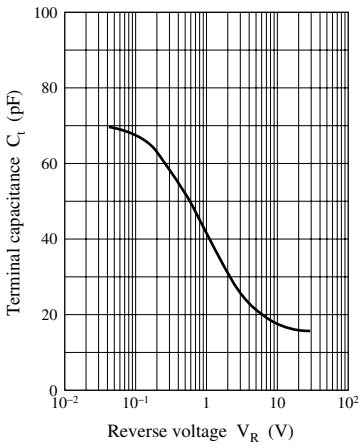
Spectral sensitivity characteristics



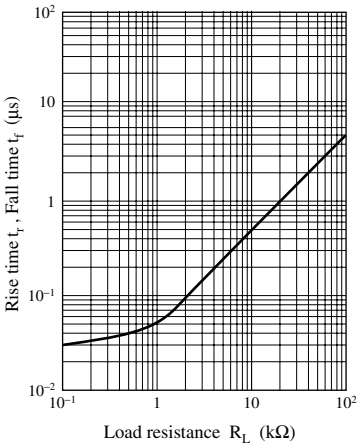
Directivity characteristics



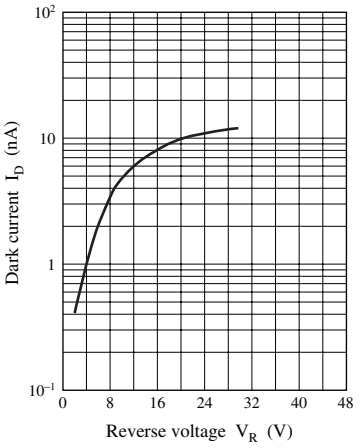
C_t — V_R



t_r , t_f — R_L



I_D — V_R



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