

PNJ4K11F

Bipolar Integrated Circuit with Photodetection Function

For brightness control systems

■ Features

- Peak sensitivity wavelength: 560 nm
- Output ratio of incandescent light and fluorescent light: 1.1 (typ.)
- Small, thin type package
- Surface-mounting type for reflow soldering

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Operating supply voltage	V_{CC}	-0.5 to +7.0	V
Power dissipation	P_D	35	mW
Operating ambient temperature	T_{opr}	-30 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +100	$^\circ\text{C}$

■ Electro-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$, $V_{CC} = 3\text{ V}$

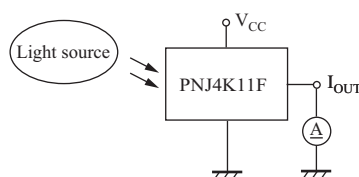
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating supply voltage	V_{CC}		1.4	—	5.5	V
Saturation voltage *4	$V_{O(sat)}$	$E_V = 100\text{ lx}$, $R_L = 100\text{ k}\Omega$	2.60	2.94	3.00	V
Supply current *1	I_{CC}	$E_V = 1000\text{ lx}$, $R_L = 1\text{ k}\Omega$	—	480	920	μA
Output current 1 *1, 4	I_{O1}	$E_V = 100\text{ lx}$	29.0	48.0	90.0	μA
Output current 2 *2, 4	I_{O2}	$E_V = 10\text{ lx}$	2.5	4.3	7.9	μA
Output current 3 *2, 4	I_{O3}	$E_V = 100\text{ lx}$	25.0	43.0	79.0	μA
Output current ratio	I_{O1} / I_{O3}		—	1.1	1.65	—
Drain current	I_D	$E_V = 0\text{ lx}$	—	10	100	nA
Peak sensitivity wavelength *3	λ_{PD}		—	560	—	nm
Rise time *3, 5	t_r	$R_L = 5.1\text{ k}\Omega$	—	100	150	μs
Fall time *3, 5	t_f		—	300	1000	μs
Delay time *3, 5	t_d		—	50	—	μs
Storage time *3, 5	t_s		—	5	—	μs

Note) *1: Light source is CIE standard A light source. (Incandescent lamp)

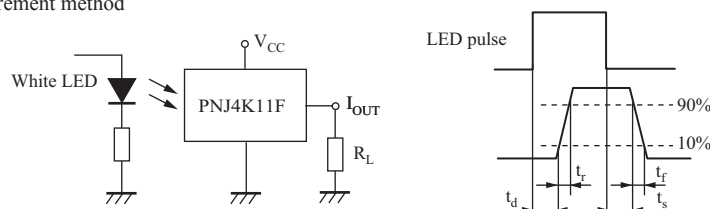
*2: Light source is fluorescence light.

*3: Designed specification

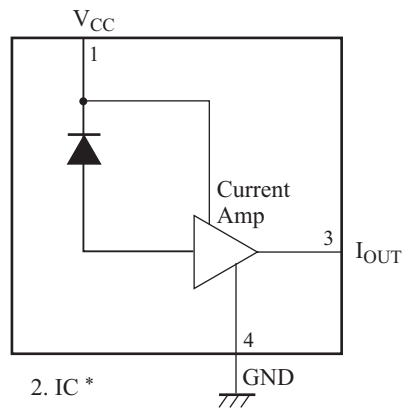
*4: Output current measurement circuit



*5: Switching time measurement method



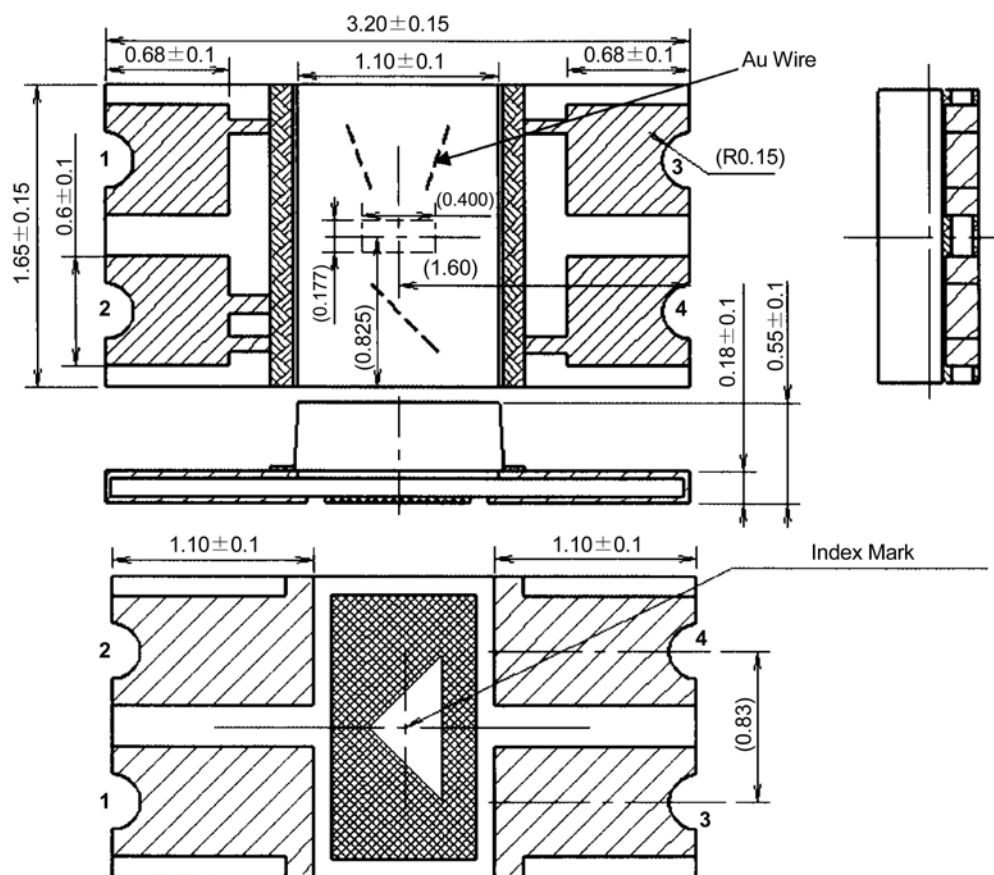
■ Block Diagram



*: Please connect 2Pin with GND.

■ Package (Unit: mm)

KPTFTN4K0002



• Pin name

- 1: V_{CC}
- 2: IC
- 3: I_{OUT}
- 4: GND

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