

# PNJ4K01F

## 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: 1.55 mm × 1.5 mm × 0.53 mm
- 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	$^\circ\text{C}$

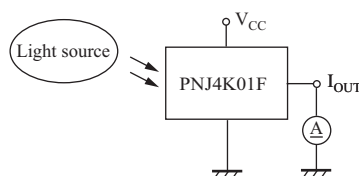
### ■ Electro-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ , $V_{CC} = 3\text{ V}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating supply voltage	$V_{CC}$		1.4		5.5	V
Saturation voltage *3	$V_{O(sat)}$	$E_V = 100\text{ lx}$ , $R_L = 100\text{ k}\Omega$	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	$\mu\text{A}$
Output current 1 *1, *3	$I_{O1}$	$E_V = 100\text{ lx}$	29.0	48.0	90.0	$\mu\text{A}$
Output current 2 *2, *3	$I_{O2}$	$E_V = 10\text{ lx}$	2.5	4.3	7.9	$\mu\text{A}$
Output current 3 *2, *3	$I_{O3}$	$E_V = 100\text{ lx}$	25.0	43.0	79.0	$\mu\text{A}$
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	$\lambda_{PD}$			560		nm
Rise time *4	$t_r$	$R_L = 5.1\text{ k}\Omega$		100	1 000	$\mu\text{s}$
Fall time *4	$t_f$			300	1 000	$\mu\text{s}$
Delay time *4	$t_d$			50		$\mu\text{s}$
Storage time *4	$t_s$			5		$\mu\text{s}$

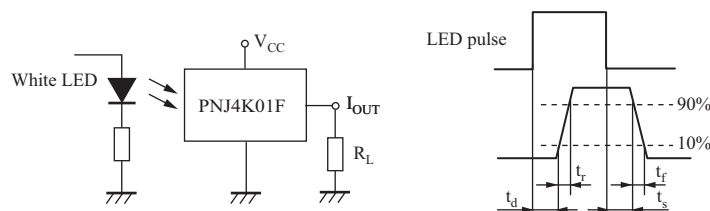
Note) \*1: Light source is CIE standard A light source. (Incandescent lamp)

\*2: Light source is fluorescence light.

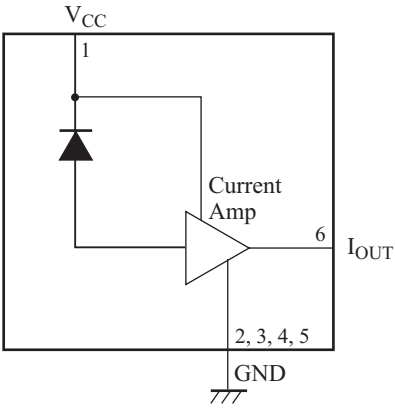
\*3: Output current measurement circuit



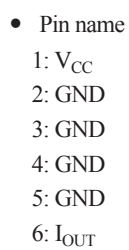
\*4: Switching time measurement method



■ Block Diagram



KPTFTN6K0001



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