

PNA4S54F

Photodiode with amplifier functions

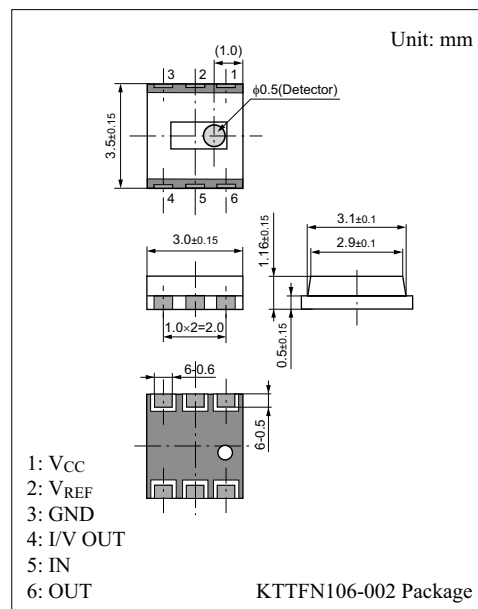
For optical control systems

■ Features

- Small package, × 52 speed
- Reflow soldering possible

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

Parameter	Symbol	Rating	Unit
Operating supply voltage	V_{CC}	6	V
Power dissipation	P_D	250	mW
Operating ambient temperature	T_{opr}	-20 to +70	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +85	$^\circ\text{C}$



■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$, $V_{CC} = 5.0\text{ V}$, $V_{REF} = 2.5\text{ V}$, $R_L = 10\text{ k}\Omega$, $C_L = 10\text{ pF}$, $V_R = 200\text{ }\Omega$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating supply voltage *4	V_{CC}		4.5	5.0	5.5	V
Output voltage *1	V_O	$P_I = 50\text{ }\mu\text{W}$, $\lambda = 780\text{ nm}$	-95	-140	-190	mV
Output offset voltage *2	V_{OFF}		-10	0	10	mV
Output maximum voltage	V_{OM}	V_{REF} standard	-2.0	-2.2	—	V
Reference voltage *4	V_{REF}		2.0	2.5	2.75	V
Supply current	I_{CC}	No signal condition	—	1.5	20	mA
Cutoff frequency *3	$f_{C(-3dB)}$	Guarantee item on design	—	80	—	MHz
Rise time	t_r	$V_O = 1\text{ V}$, 10% to 90%		5		ns
Fall time	t_f					

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

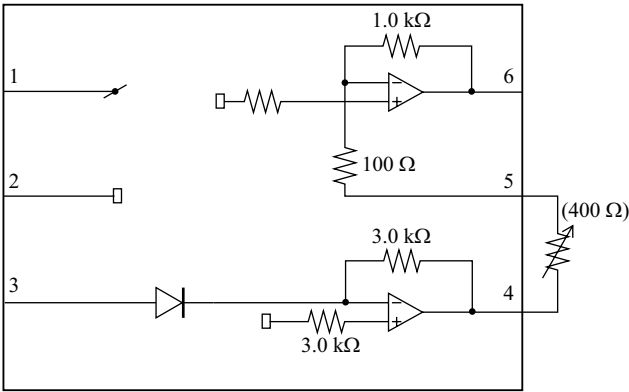
2. *1: Standard voltage level; V_{REF} (Exclude output offset voltage)

*2: Standard voltage level; V_{REF}

*3: $20 \log (V_O (f_C \text{ MHz}) / V_O (1 \text{ MHz})) = -3$

*4: $(V_{CC} - V_{REF})$ Voltage: more than 2.0 V

■ Block Diagram



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