PNA4S54F

Photodiode with amplifier functions

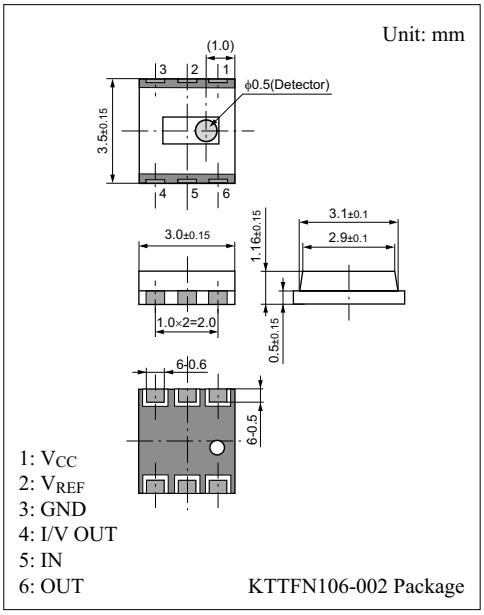
For optical control systems

■ Features

- Small package, × 52 speed
- Reflow soldering possible

■ Absolute Maximum Ratings T_a = 25°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	°C
Storage temperature	T_{stg}	–40 to +85	°C



■ Electrical Characteristics T_a = 25°C±3°C, V_{CC} = 5.0 V, V_{REF} = 2.5 V, R_L = 10 kΩ, C_L = 10 pF, V_R = 200 Ω

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	PI = 50 μW, λ = 780 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	$f_{C(-3dB)}$	Gurantee item on design	—	80	—	MHz
Rise time	t_r	V_O = 1 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.

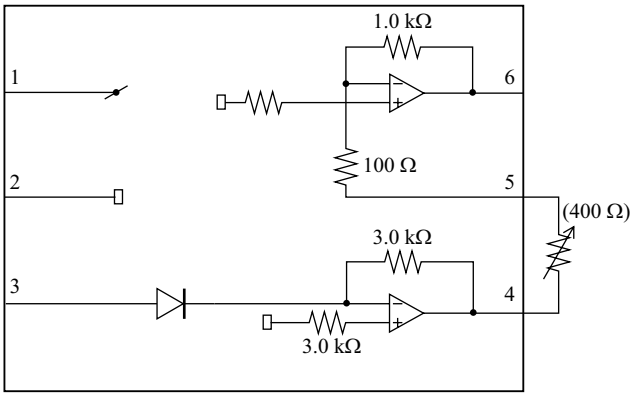
2. *1: Standard voltage level; V_{REF} (Exclude output offset voltage)

*2: Standard voltage level; V_{REF}

*3: 20 log (V_O (f_C MHz)/V_O(1 MHz)) = –3

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

■ Block Diagram



This product complies with the RoHS Directive (EU 2002/95/EC).

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(4) The products described in this material are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
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- Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
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