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
Maximum output 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	—	15	20	mA
Cutoff frequency *3	$f_{C(-3dB)}$	Gurantee item on design	—	70	—	MHz
Rise time	t_r	V_O = 1 V		5		ns
Fall time	t_f			5		ns

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

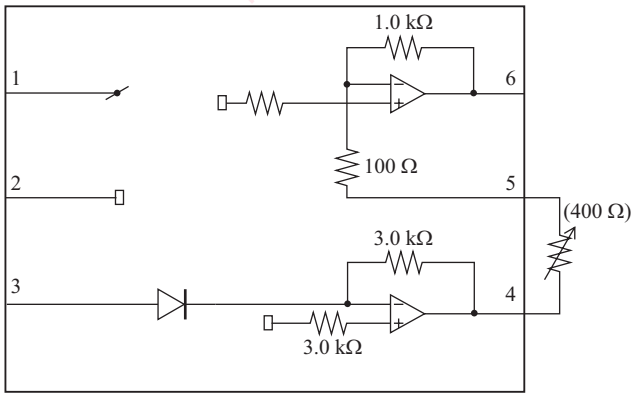
2. *1: Standard voltage level; V_{REF} (Exclude output offset voltage)

*2: Standard voltage level; V_{REF}

*3: 10 log (V_O (f_C MHz) / V_O (1 MHz)) = –3

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

■ Block Diagram



■ Pacakge (Unit: mm)

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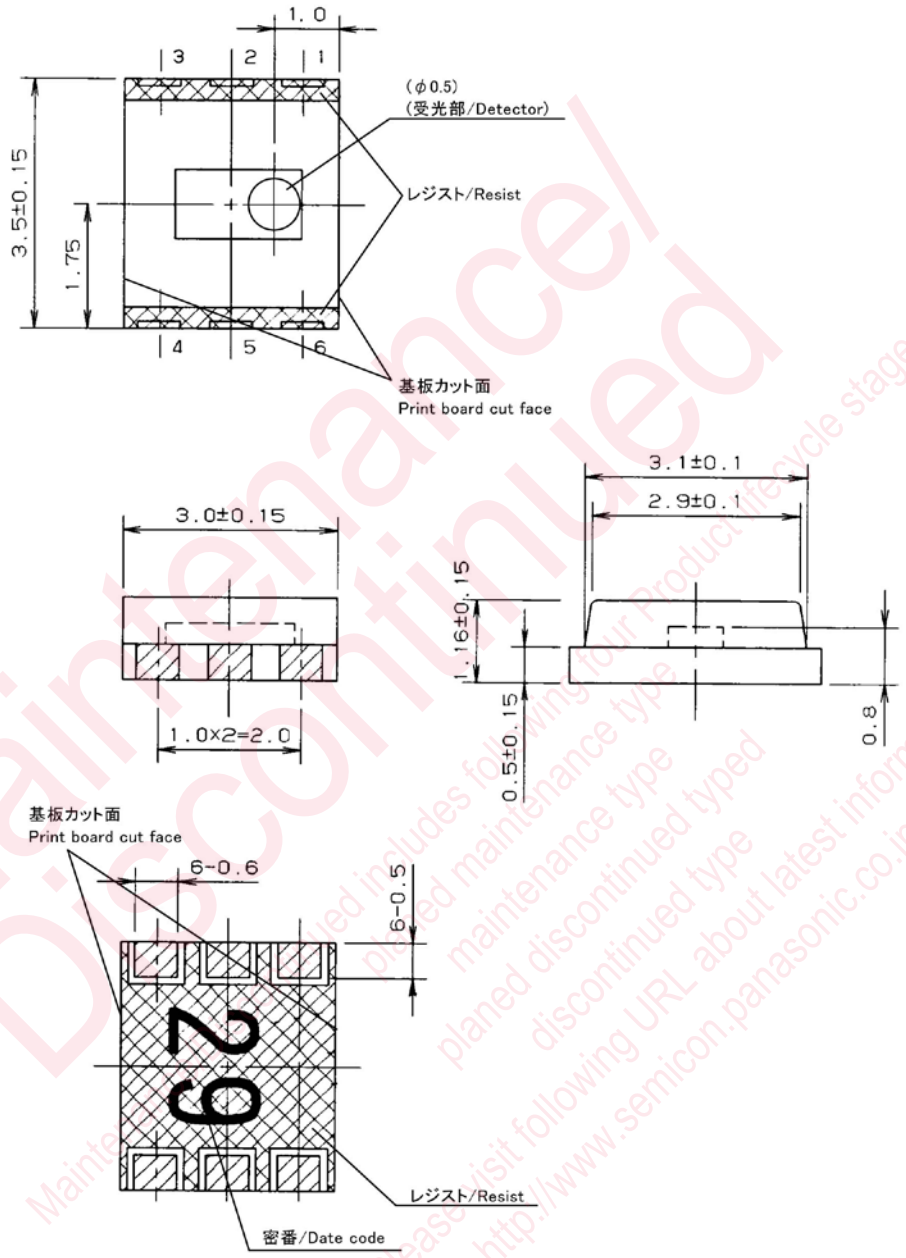

- Pin name
  1: V_{CC}
  2: V_{REF}
  3: GND
  4: I/V_{OUT}
  5: IN
  6: OUT

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