

PNA4601M

Photodiode with Photodetection Function

For infrared remote control systems

■ Features

- Extension distance: 8 m or more
- External parts not required
- Adoption of visible light cutoff resin

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

Parameter	Symbol	Rating	Unit
Operating supply voltage	V_{CC}	-0.5 to +7	V
Power dissipation	P_D	200	mW
Operating ambient temperature	T_{opr}	-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +100	$^\circ\text{C}$
Soldering temperature *	T_{sol}	260	$^\circ\text{C}$

Note) *: Less than 5 s

■ Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating supply voltage	V_{CC}		4.7	5.0	5.3	V
Supply current	I_{CC}	No signal condition	1.8	2.4	3.0	mA
Maximum reception distance *1	L_{max}		8.0	10.0		m
Low level output voltage *2	V_{OL}	$L \leq 8.0$ m, $I_{OL} = 400$ μA		0.35	0.5	V
High level output voltage	V_{OH}	No signal condition, $I_{OH} = -10$ μA	4.75	4.80		V
Low level pulse width *1	T_{WL1}	$L = 8.0$ m, 16 pulse	200	400	600	μs
	T_{WL2}	$L = 0.2$ m, 16 pulse, $T_a = 65^\circ\text{C} \pm 3^\circ\text{C}$	100		700	μs
High level pulse width *1	T_{WH}	$L = 8.0$ m, 16 pulse	200	400	600	μs
Center frequency	f_O			36.7		kHz
Load resistance	R_L		15	20	25	$\text{k}\Omega$

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

2. *1: Burst wave form figure 1.

*2: Constant wave form Figure 2.

Carrier frequency: f_O

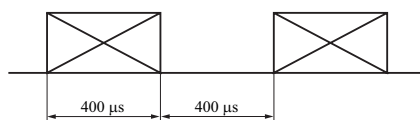


Figure 1

Carrier frequency: f_O

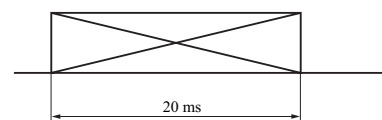
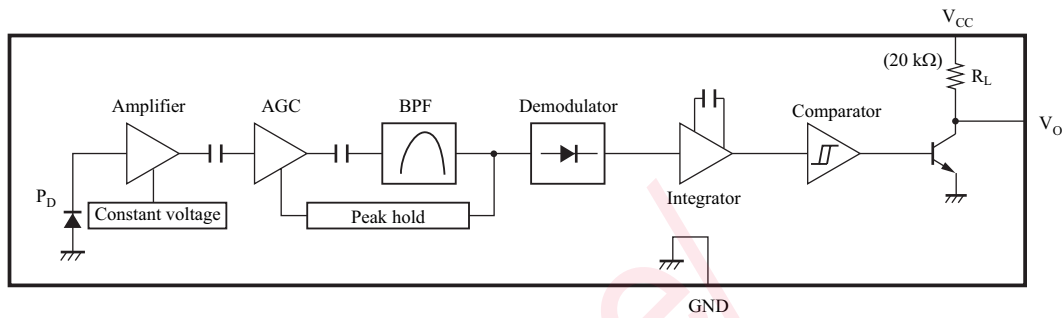
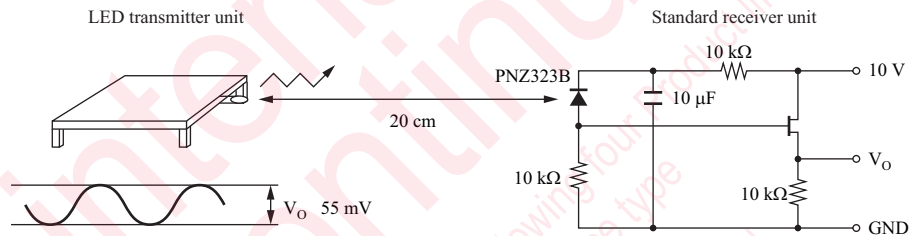


Figure 2

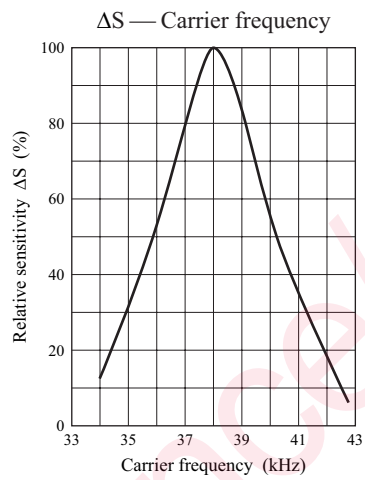
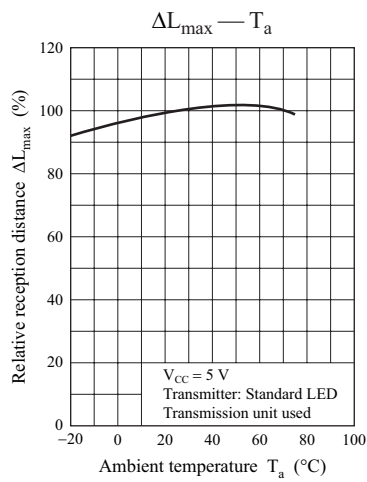
■ Block Diagram



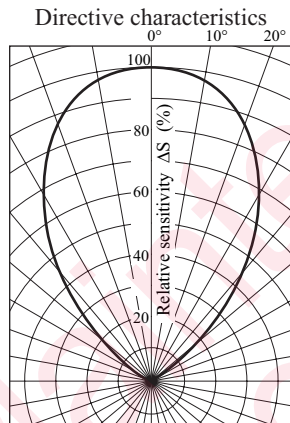
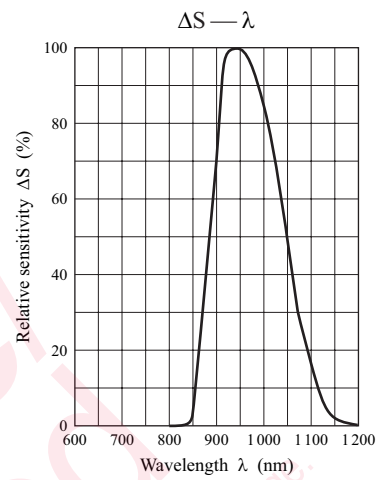
■ Panasonic Transmitter Specifications



1. The output of the LED transmitter unit is adjusted so that the output standard receiver unit, V_O may be 55 mV when transmitting waves (duty = 50%) are output from the transmitter unit, where the sensitivity to infrared emitters (SIR) of PNZ323B is $0.53 \mu\text{A}$ when the irradiance H is $12.45 \mu\text{W}/\text{cm}^2$.
2. The maximum detection distance of this specification is guaranteed by T_{WH} and T_{WL} being within the limits when constant 16 pulses are transmitted with the output of the transmitter unit corresponded to the maximum detection distance in the system above. (The maximum detection distance is measured in the darkness without disturbing noises.)



Note: The peak is f_O .

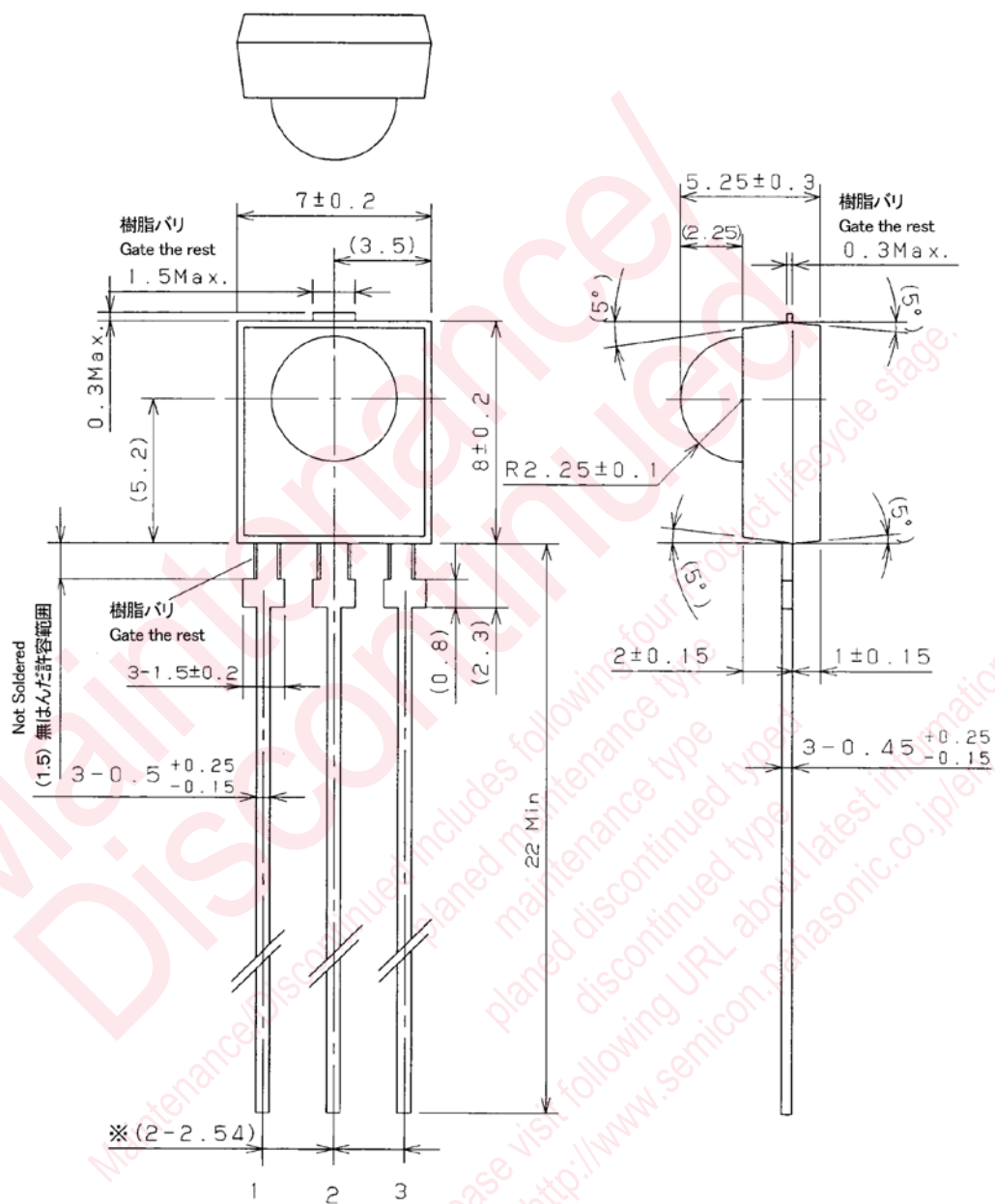


PNA4601M

Panasonic

■ Package (Unit: mm)

LPTLSN3S0001



(注 1) リード根元寸法とする。

(Note1)※Indicates root dimensions of lead.

● Pin name

- 1: V_O
- 2: GND
- 3: V_{CC}

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