PNJ4L01M

Photodiode with amplifier functions

For infrared remote control systems

■ Features

- Center frequency f_O : 36.7 kHz
- Operating supply voltage V_{CC} : 3.3 V (typ.)
- Adoption of visible light cutoff resin

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Operating supply voltage	V_{CC}	– 0.5 to +6	V
Power dissipation	P_D	200	mW
Operating ambient temperature	T_{opr}	–20 to +70	°C
Storage temperature	T_{stg}	–40 to +90	°C

■ Electrical Characteristics $T_a = 25°C \pm 3°C$, $V_{CC} = 3.3$ V

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operating supply voltage	V_{CC}		2.7	3.3	5.5	V
Output voltage low-level *2	V_{OL}	L ≤ 6.0 m, I_{OL} = 400 µA	—	0.1	0.3	V
Output voltage high-level	V_{OH}	No signal condition	V_{CC} – 0.2	V_{CC}	V_{CC}	V
Supply current	I_{CC}	No signal condition	—	0.3	0.45	mA
Maximum reception distance *1	L_{max}		6.0	11.0	—	m
Pulse width low-level *1	t_{WL}	L ≤ 0.1 m to 6.0 m, 16 pulse	200	400	600	µs
Pulse width high-level *1	t_{WH}	L ≤ 0.1 m to 6.0 m, 16 pulse	200	400	600	µs
Center frequency	f_O		—	36.7	—	kHz

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: Burst wave form Figure 2

Carrier frequency: f_O

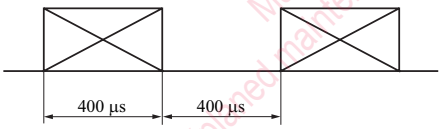


Figure 1

Carrier frequency: f_O

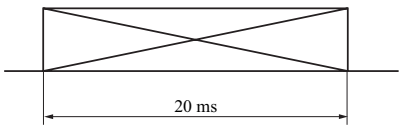
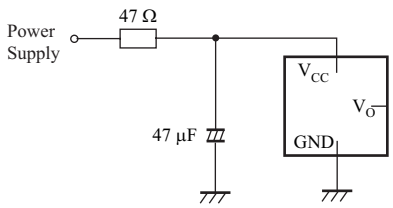
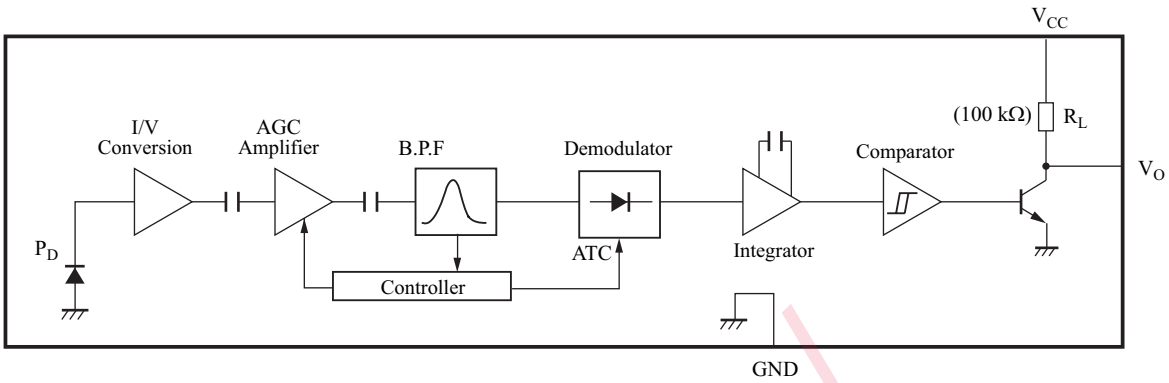


Figure 2

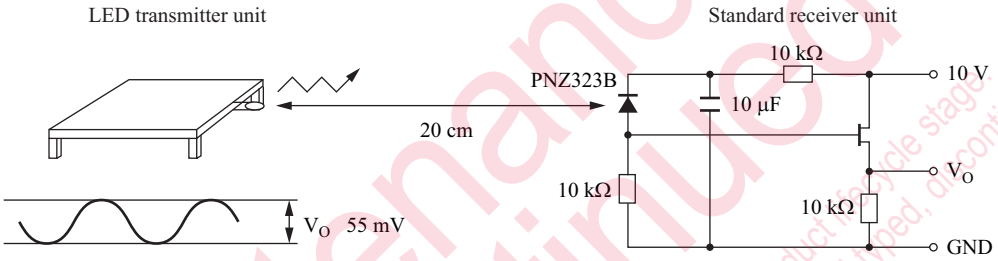
3. Measurement circuit



■ Block Diagram



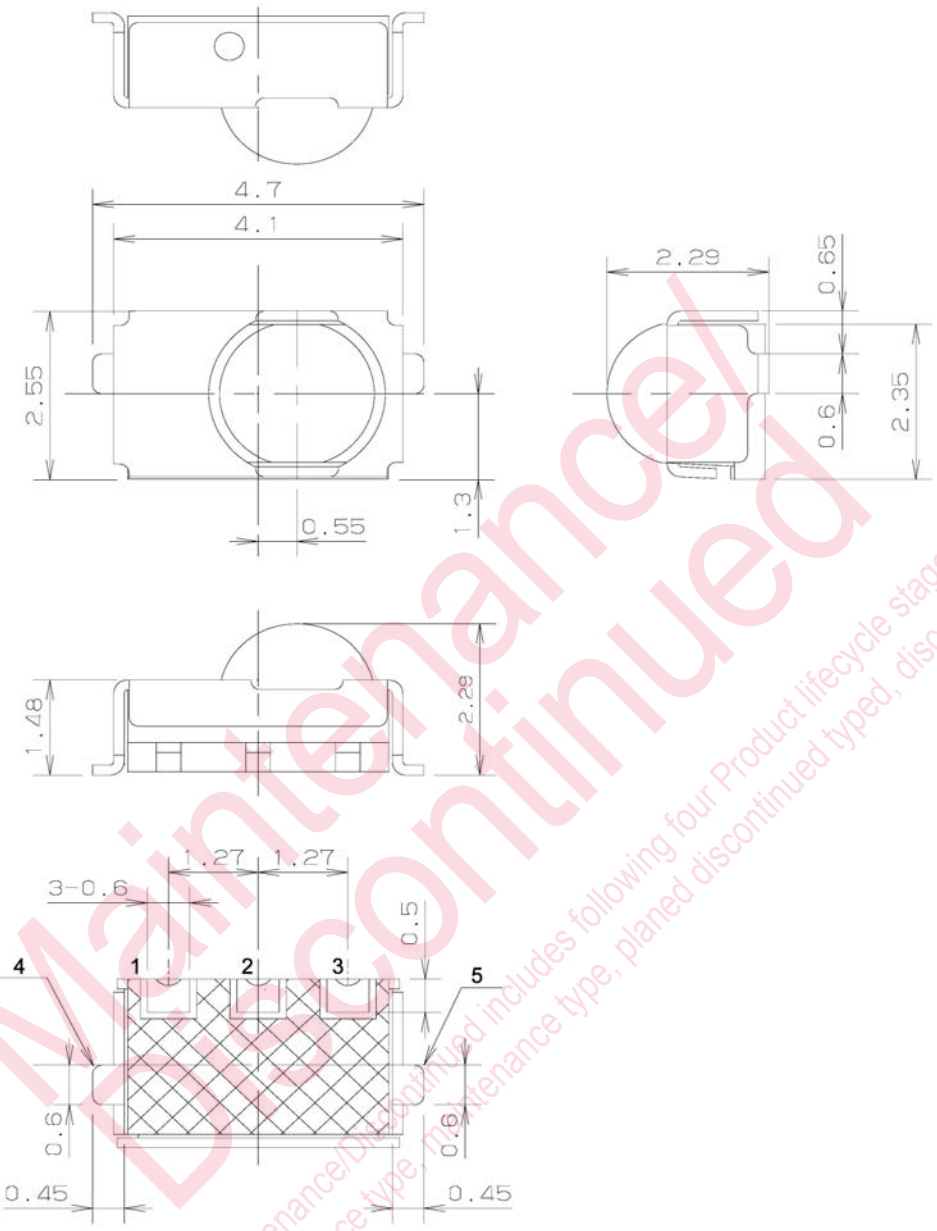
■ Panasonic Transmitter Specifications



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 μA when the irradiance H is 12.45 μW/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.)

■ Package (Unit: mm)



• Pin name

1. V_O
2. V_{CC}
3. GND
4. Shield GND
5. Shield GND

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