

PNA4611M, PNA4613M, PNA4614M

Photodiode with amplifier functions

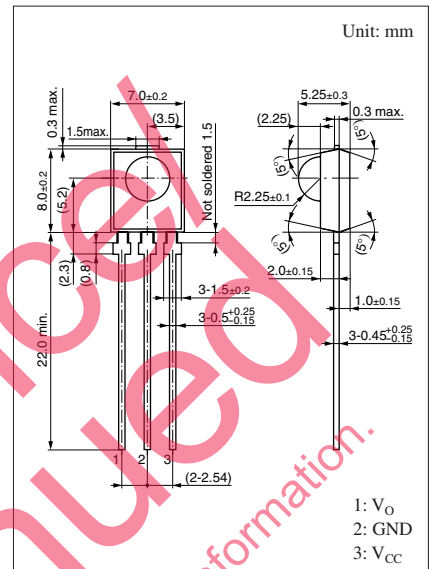
For infrared remote control systems

■ Features

- Extension distance is 11 m or more
- External parts not required
- Adoption of visible light cutoff resin
- Supports various metal holders with improved electromagnetic noise resistance

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

Parameter	Symbol	Rating	Unit
Collector 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	$^\circ\text{C}$



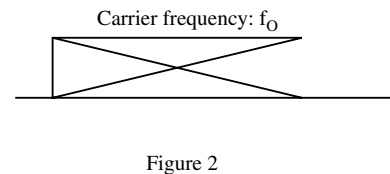
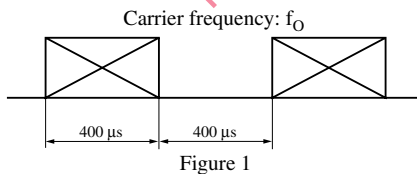
■ Electrical-Optical Characteristics $V_{CC} = 5.0\text{ V}$, $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector supply voltage	V_{CC}		4.7	5.0	5.3	V
Output voltage high-level	V_{OH}	No signal condition, $I_{DH} = -10\ \mu\text{A}$	4.75	4.80		V
Output voltage low-level *2	V_{OL}	$L \leq 11.0\text{ m}$, $I_{OL} = 400\ \mu\text{A}$		0.35	0.50	V
Supply current	I_{CC}	No signal condition	1.8	2.4	3.0	mA
Load resistance	R_L		15	20	25	k Ω
Maximum reception distance *1	L_{max}		11.0	18.0		m
Pulse width high-level *1	T_{WH}	$L = 0.1\text{ m to }11\text{ m}$, 16 pulse	200	400	600	μs
Pulse width low-level *1	T_{WL}	$L = 0.1\text{ m to }11\text{ m}$, 16 pulse	200	400	600	μs
Center frequency	PNA4611M	f_O		36.7		kHz
	PNA4613M			40.0		
	PNA4614M			56.9		

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

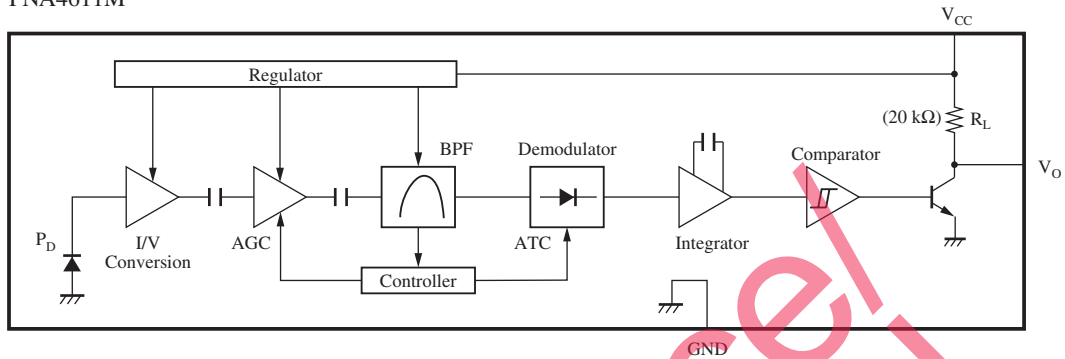
2. *1: Burst wave form Figure 1

*2: Constant wave form Figure 2

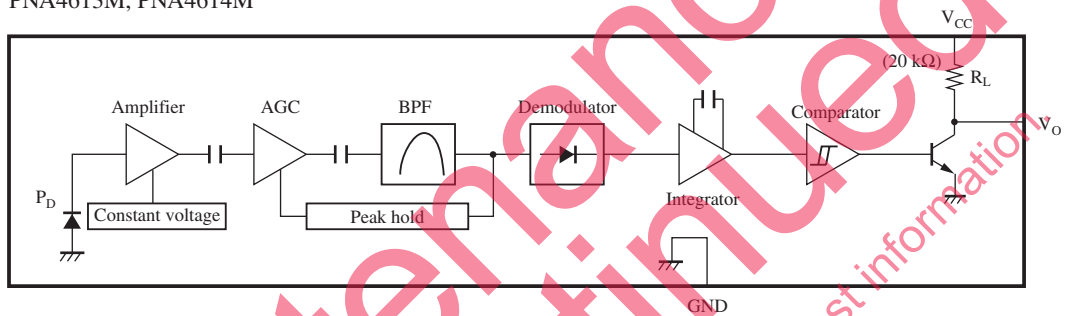


■ Block Diagram

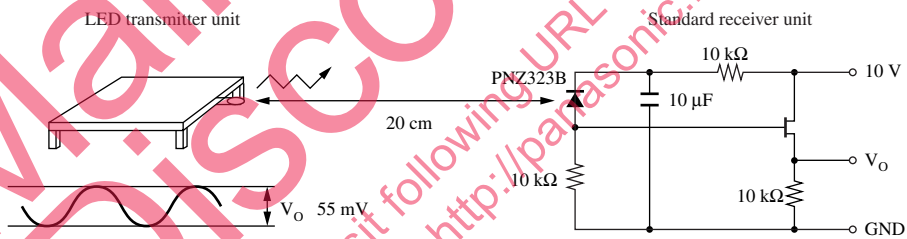
PNA4611M



PNA4613M, PNA4614M

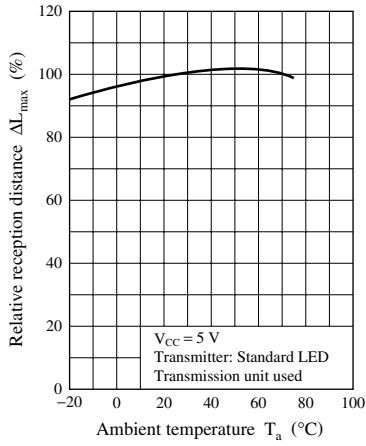


■ Panasonic Transmitter Specifications

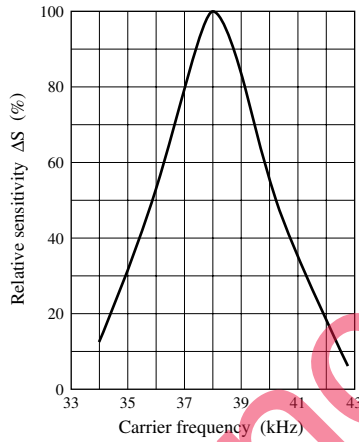


1. The output of the LED transmitter unit is adjusted so that the output standard receiver unit, V_O may be 55 mV when transmitting waves (duty = 50%) are output from the transmitter unit, where the sensitivity to infrared emitters (S_{IR}) of PNZ323B is 0.53 μA when the irradiance H is 12.45 $\mu\text{W}/\text{cm}^2$.
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.)

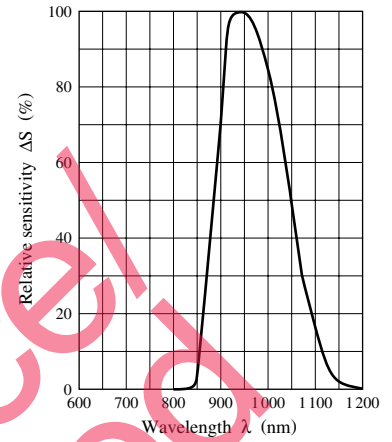
$\Delta L_{max} - T_a$



BPF frequency characteristics (PNA4612M) *

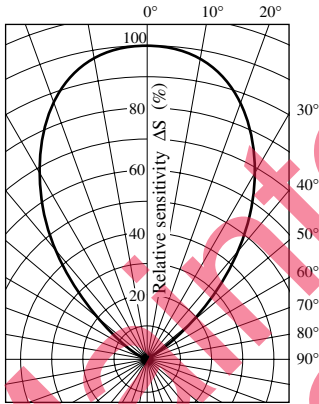


Spectral sensitivity characteristics



* The peaks for PNA4611M, PNA4613M and PNA4614M are all at f_0 .

Directivity characteristics



Model Discontinued
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