IR Receiver Module

RPM7236-Hx series

RPM7236-Hx series are remote control receiver module. Small-sized, light-weight, and low voltage operated (from 2.7V) modules have been achieved by using resin mold.

●Applications

All household electric appliances such as TV, DVD, air conditioner and audio equipment

●Features

1) Low voltage operation. (V_{CC}=2.7 to 3.6V)
2) Low current consumption. (I_{CC}=0.3mA, V_{CC}=3V)
3) Superior anti V_{CC} noise characteristics.
4) 5 types of holders available to each set.

●RPM7236-Hx series

Sub carrier frequency	TOP VIEW			SIDE VIEW	
	RSIP-A3 (H4)	RSIP-A3 (H8)	RSIP-A3 (H9)	RSIP-A3 (H5)	RSIP-A3 (H13)
Hight of lens	15.9mm	7.2mm	12.0mm	9.6mm	15.0mm
36.0kHz	RPM7236-H4	RPM7236-H8	RPM7236-H9	RPM7236-H5	RPM7236-H13

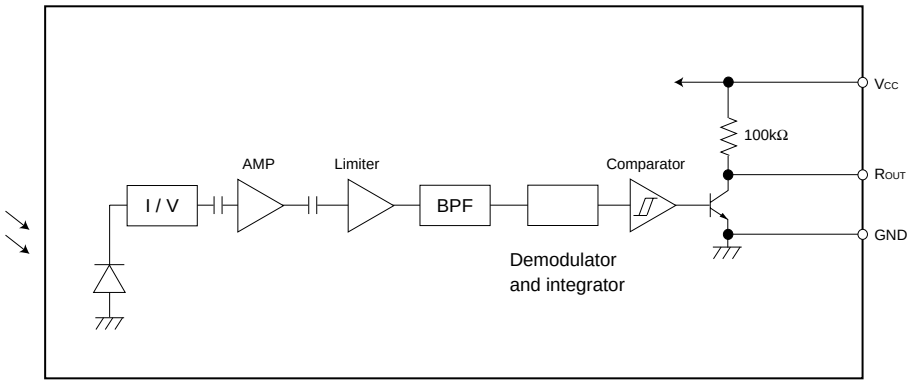
●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	6.3	V
Output current	I_O	2.0	mA
Storage temperature	Tstg	−30 to +100	°C

●Recommended operating conditions (Ta=25°C)

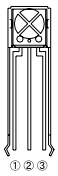
Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V_{CC}	2.7	3.0	3.6	V
Operating temperature	Topr	−10	25	75	°C

●**Block diagram**



●**Terminal description**

Pin No.	Pin name	Function
1	V_{OUT}	OUTPUT TERMINAL
2	GND	GROUND
3	V_{CC}	POWER SUPPLY



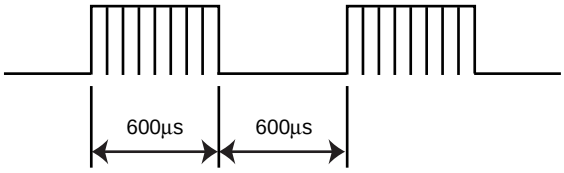
●**Electrical, Optical characteristics** (Unless otherwise noted Ta=25°C, V_{CC}=3V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Consumption current	I_{CC}	–	300	500	μA	No outside light, no signal input.
Effective distance	L	10	15	–	m	∗1 Outer light condition Ee < 10 (lx)
High level output voltage	V_H	2.5	–	–	V	∗1
Low level output voltage	V_L	–	–	0.5	V	∗1 Isink < 200μA
ON pulse width	T_{ON}	400	600	800	μs	∗1 Outer light condition Ee < 10 (lx)
OFF pulse width	T_{OFF}	400	600	800	μs	∗1 Outer light condition Ee < 10 (lx)
Central frequency	fo	–	36.0	–	kHz	
Horizontal half angle	θ 1/2	–	45	–	deg	∗2
Vertical half angle	θ 1/2	–	35	–	deg	∗2

∗1 The burst wave form mentioned in Fig.1 is to be transmitted from standard transmitter(Fig.2)
Measure 10th or later pulse width after beginning of transmission.
∗2 The angle which effective distance become 50% of L. (effective distance at θ=0°)

● **Measurement Conditions**

(1) Transmit signal



Carrier frequency=fo, Duty=50%

Fig.1 Transmit signal.

(2) Standard transmitter

λ peak=940nm
Δ λ =40nm

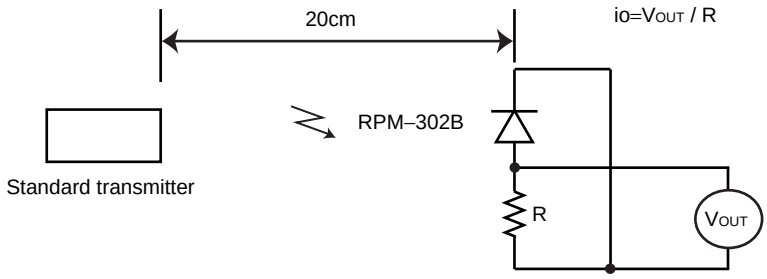
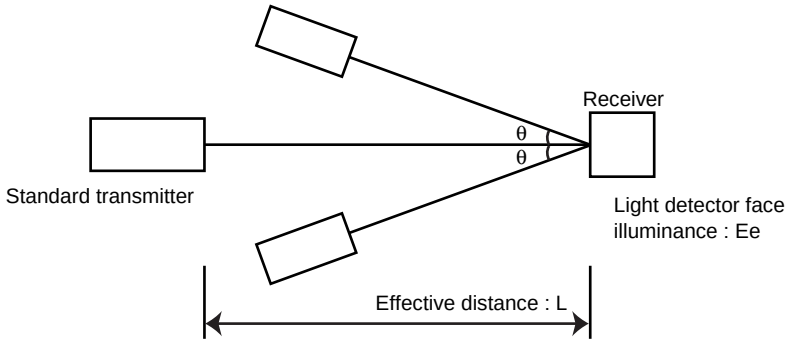


Fig.2 Measurement of standard transmitter proof reading.

When standard transmitter output the signal at Fig.1 standard photodiode output become io=5μAp-p under the measurement condition Fig.2.
(The radiant intensity of standard transmitter : 50mW / sr)

RPM-302B: standard photodiode has short current Isc=27μA at Ee=1000(lx)
(using CIE standard light source A)

(3) Measurement effective distance, horizontal & vertical half angle



(θ ; Indicates horizontal and vertical directions)

Fig.3 Measurement condition for effective distance.

Effective distance L	: Effective distance at θ=0° Fig.3
Horizontal & vertical half angle θ	: The angle which effective distance became 50% of L.

(4) Output signal

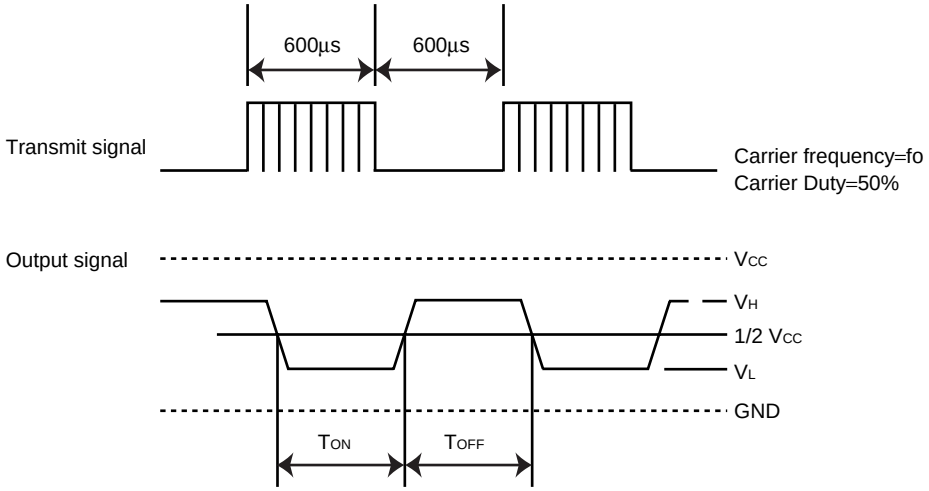


Fig.4

(5) Measurement circuit for the output voltage and the consumption current

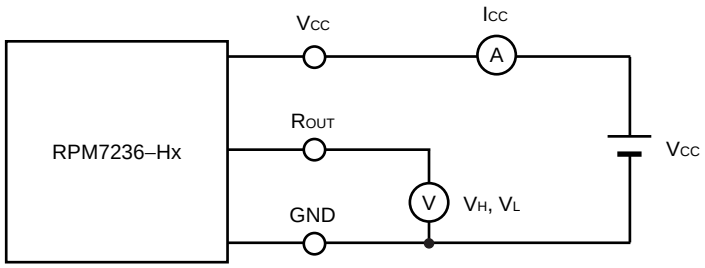


Fig.5

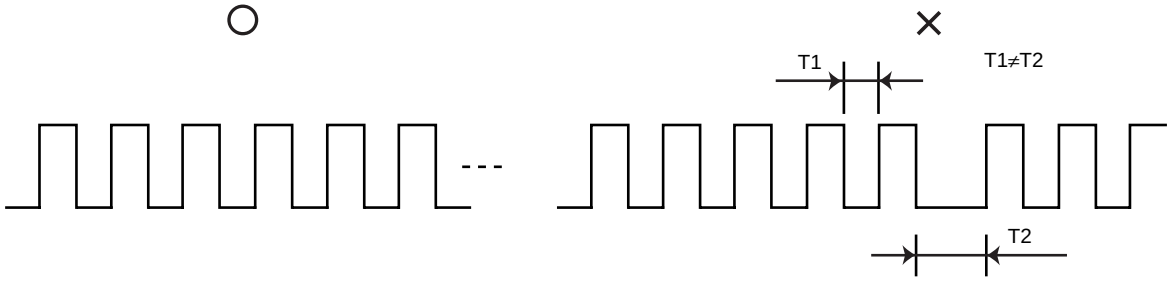
●Notes

(1) All characteristics of the receiver in this specification are specified by supplying burst wave form with ROHM standard transmitter (Shown as 8 (2)).
If in case of other burst wave form will be used, please check these spec. carefully under the evaluations.

(2) When the receiver will be used as the wire-less remote controller, please use the signal format RC5 Code, RC6 Code, RCMM Code.
If using other signal method, signal format, the receiver might have chances to miss-function.

(3) Please set up transmitter's carrier frequency as same as the receiver's f_0 frequency. Otherwise error might be occurred.

(4) If transmission signal has non-continues carrier, error might be occurred. Continuous carrier is necessary.



(5) The receiver was designed to use as in-door use only.
Therefore, please understand that the receiver cannot cover all characteristics, in case of using it out-door.

(6) Noise environment (Light noise from inverter Lamp, and other kind of Lamps, Power ripple, electromagnetic noise from power circuit, and etc) may cause a reduced effective distance.

(7) The receiver may not work properly if the receiving signal judgment is done by single pulse due to the surrounding / environmental noises.
To prevent such misjudgment, please make sure that the receiver is set up to work only when receiving series of the coded signal.

(8) Emitting unit (remote control transmitter) has to be considered about its emitting device function, characteristics and characteristics of the receiver.

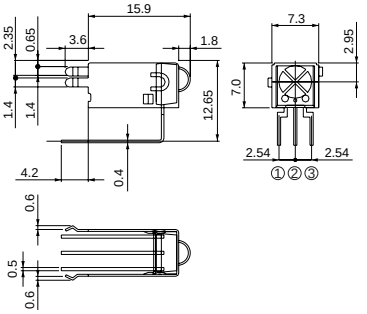
(9) Attach holder on PCB pattern.
(Holder do not conduct to GND)

(10) Do not supply unnecessary stress to lead and holder.

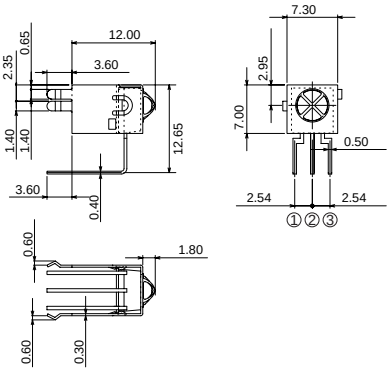
(11) Please pay attention to the lens carefully.
It might have a chance to miss-function when the lens get dust or dirty.
Also, please do not touch the lens.

(12) In order to protect the products from ESD, human body, solder iron and etc. are required to be grounded.

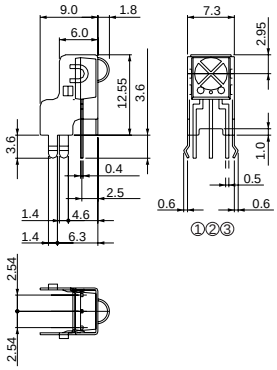
●**External dimensions** (Unit : mm)



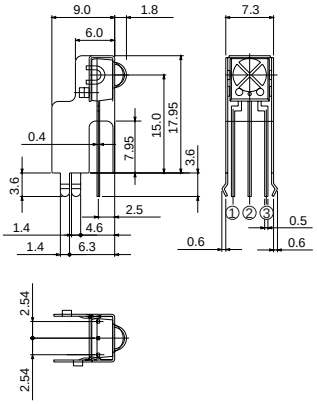
RSIP-A3(H4)



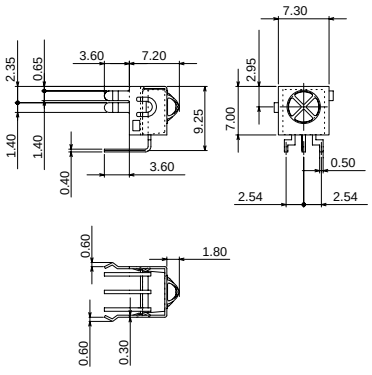
RSIP-A3(H9)



RSIP-A3(H5)



RSIP-A3(H13)



RSIP-A3(H8)

PIN No.	
①	ROU
②	GND
③	VCC

Notes

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