

## INFRARED RECEIVER MODULE

### ● Description

The OS-1838B is miniaturized infrared receivers for remote control and other applications requiring improved ambient light rejection.

The separate PIN diode and preamplifier IC are assembled on a single leadframe.

The epoxy package contains a special IR filter.

This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.



### ● Features

- Photo detector and preamplifier in one package .
- Internal filter for PCM frequency.
- Inner shield,good anti-interference ability.
- High immunity against ambient light.
- Improved shielding against electric field disturbance
- 3.0V or 5.0V supply voltage; low power consumption.
- TTL and CMOS compatibility.
- Suitable transmission code:NEC code,RC5 code.

### ● Applications:

1. Optical switch
2. Light detecting protion of remote contol
  - AV instruments such as Audio,TV,VCR,CD,MD,DVD,etc.
  - Home appliances such as Air-conditioner,Fan,etc.
  - CATV set top boxes
  - Multi-media Equipment

### ● Absolute Maximum Ratings (Ta=25°C)

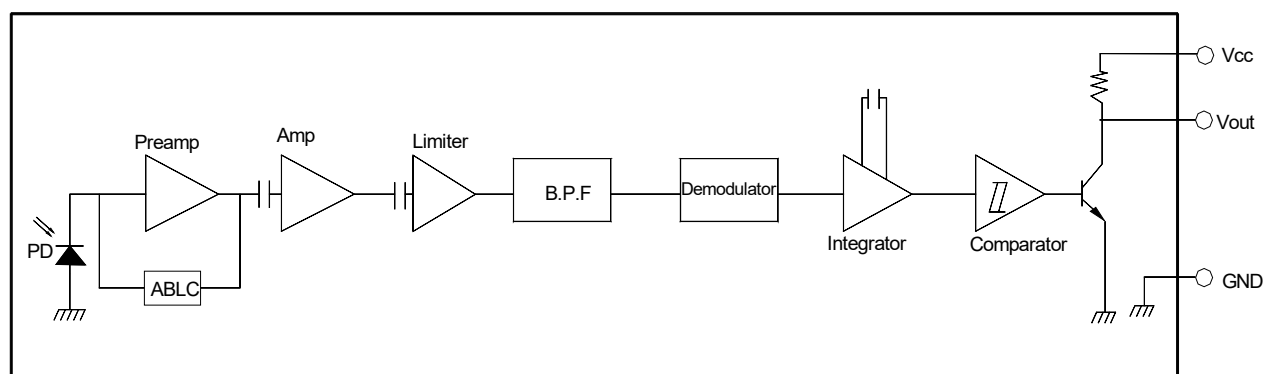
Parameter	Symbol	Ratings	Unit	Notice
Supply Voltage	V <sub>s</sub>	2.7-5.5	V	—
Operating Temperature	T <sub>opr</sub>	-20~+65	°C	—
Storage Temperature	T <sub>stg</sub>	-40~+85	°C	—
Soldering Temperature	T <sub>sd</sub>	260	°C	4mm from mold body less than 5 sec

**● Electrical And Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	V <sub>s</sub>	2.7	--	5.5	V	
Supply Current	I <sub>cc</sub>	—	0.35	0.6	mA	I <sub>in</sub> =0uA, V <sub>cc</sub> =5V
Reception Distance	L <sub>0</sub>	18	—	—	m	At the ray axis*1
	L <sub>35</sub>	12	—	—		
B.P.F Center Frequency	f <sub>o</sub>	—	38	—	KHz	
Peak Wavelength	λ <sub>p</sub>	—	940	—	nm	
Half Angle	λ ±	—	35	—	deg	At the ray axis *1
High Level Pulse Width	T <sub>H</sub>	450	600	750	μS	At the ray axis *2
Low Level Pulse Width	T <sub>L</sub>	450	600	750	μS	
High Level Output Voltage	V <sub>H</sub>	4.5	—	—	V	
Low Level Output Voltage	V <sub>L</sub>	—	—	0.5	V	

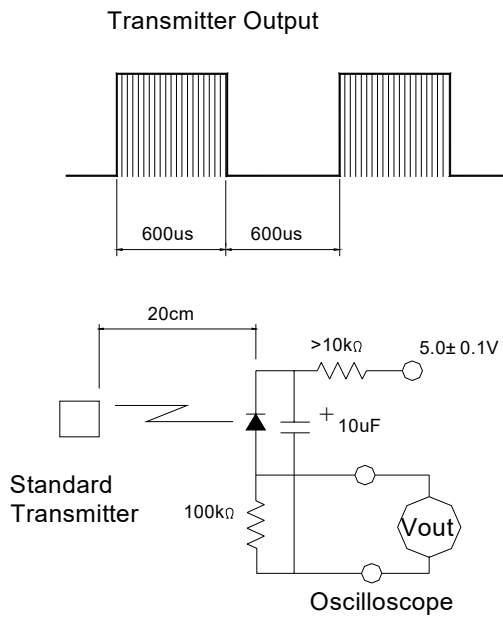
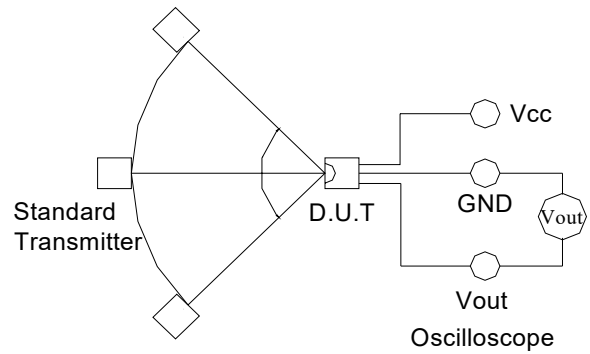
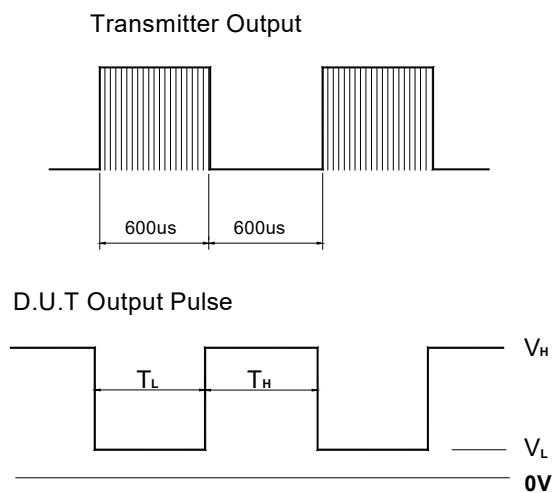
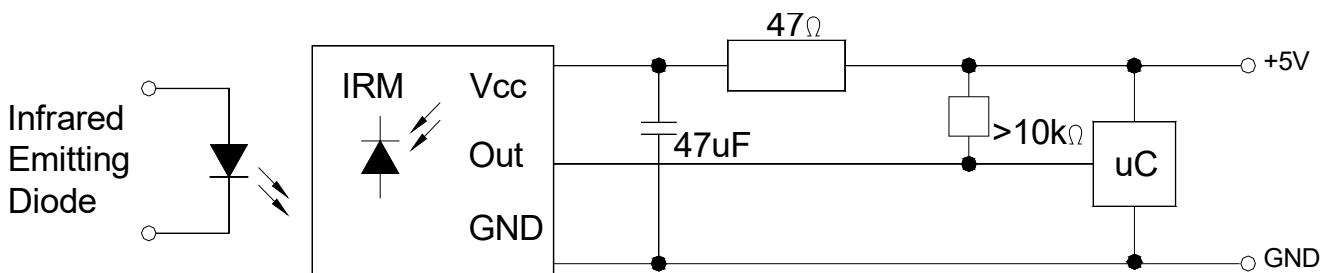
\*1: The ray receiving surface at a vertex and relation to the ray axis in the range of  $\theta=0^\circ$  and  $\theta=45^\circ$

\*2: A range from 30cm to the arrival distance. Average value of 50 pulses

**● BLOCK DIAGRAM**


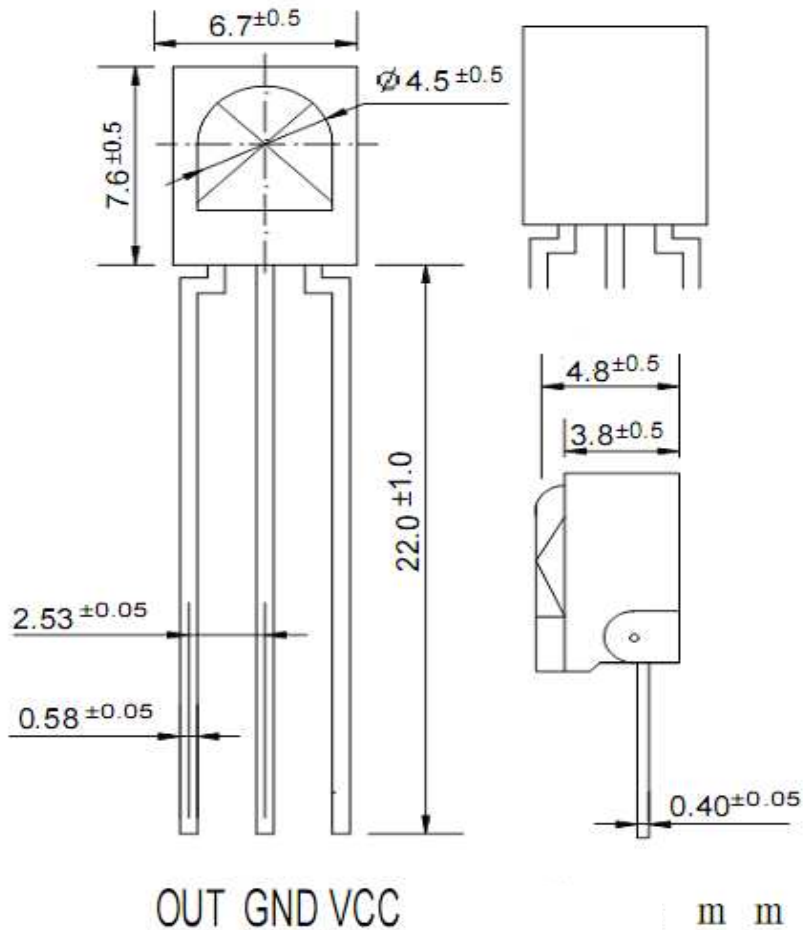
**● Test Method**

# OS-1838B

**A. Standard Transmitter**

**B. Detection Length Test**

**C. Pulse Width Test**

**● Application Circuit**


## OS-1838B

### ● Package Dimensions:



#### NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.30\text{mm}$  (0.012") unless otherwise specified.
3. Specifications are subject to change without notice.

# OS-1838B

## ● Electrical And Optical Curves(Ta=25°C)

Fig.1 Relative Spectral Sensitivity vs. Wavelength

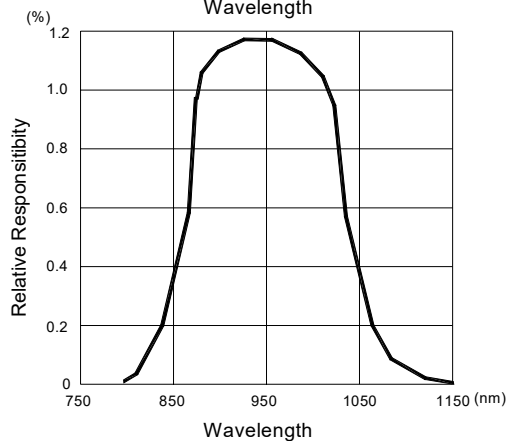


Fig.2 Relative Transmission Distance Vs. Direction

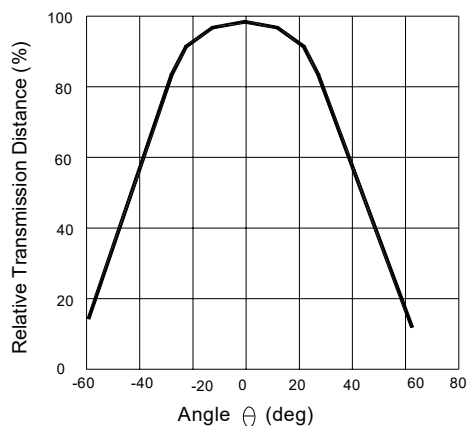


Fig.3 Frequency Dependence of Responsivity

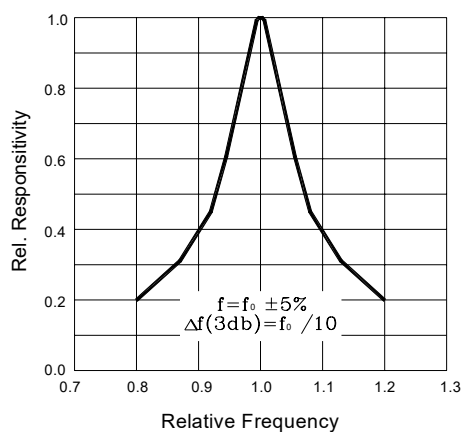


Fig.4 Supply Current vs. Ambient Temperature

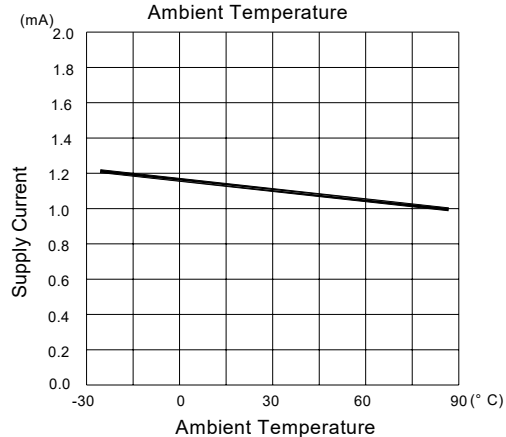


Fig.5 Relative Transmission Distance vs. Direction

