

## INFRARED RECEIVER MODULE

### ● Description

1. The BRM-4050 is miniaturized infrared receivers for remote control and other applications requiring improved ambient light rejection.
2. The separate PIN diode and preamplifier IC are assembled on a single leadframe.
3. The epoxy package contains a special IR filter.
4. This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.

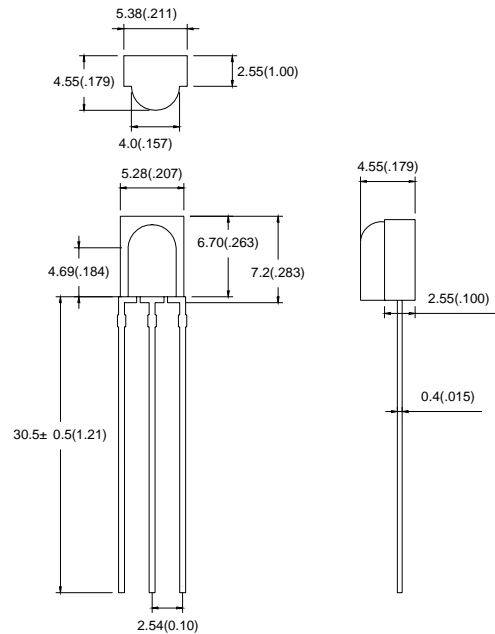
### ● Features

1. Photo detector and preamplifier in one package .
2. Internal filter for PCM frequency.
3. High immunity against ambient light.
4. Improved shielding against electric field disturbance.
5. 3.0V or 5.0V supply voltage; low power consumption.
6. TTL and CMOS compatibility.
7. Suitable transmission code:NEC code,RC5 code.

### ● Applications:

1. It can be used for TVs 、 VTRs 、 audio equipment air conditioners 、 car stereo radio 、 toys 、 home computers and all other equipment requiring remote control.

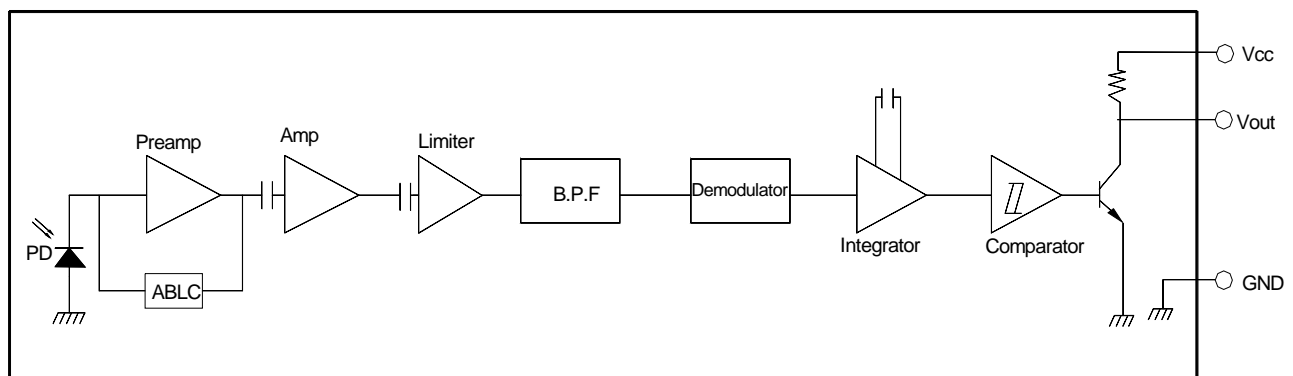
### ● Package Dimensions:



### NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.10\text{mm}$  (0.004") unless otherwise specified.
3. Specifications are subject to change without notice.

### ● BLOCK DIAGRAM



● **Absolute Maximum Ratings**( $T_a=25^{\circ}\text{C}$ )

| Parameter             | Symbol           | Ratings | Unit | Notice                                |
|-----------------------|------------------|---------|------|---------------------------------------|
| Supply Voltage        | V <sub>cc</sub>  | 2.7-5.5 | V    | —                                     |
| Operating Temperature | T <sub>opr</sub> | -30~+65 | °C   | —                                     |
| Storage Temperature   | T <sub>stg</sub> | -40~+85 | °C   | —                                     |
| Soldering Temperature | T <sub>sol</sub> | 260     | °C   | 4mm from mold body<br>less than 5 sec |

● **Electrical And Optical Characteristics**( $T_a=25^{\circ}\text{C}$ )

| Parameter                 | Symbol          | Condition   | Ratings |      |      | Unit |
|---------------------------|-----------------|---|---------|------|------|------|
|                           |                 |   | Min.    | Typ. | Max. |      |
| Supply Voltage            | V <sub>cc</sub> | DC voltage  | 2.7     | -    | 5.5  | V    |
| Supply Current            | I <sub>cc</sub> | No signal input   | —       | -    | 1.5  | mA   |
| Reception Distance        | L               | At the ray axis   | 12      | —    | —    | m    |
|                           |                 | In the range of 45°cone   | 6       | —    | —    |      |
| B.P.F Center Frequency    | f <sub>0</sub>  | —   | —       | 38   | —    | KHz  |
| Peak Wavelength           | λ <sub>p</sub>  | —   | —       | 940  | —    | nm   |
| Half Angle                | θ               | —   | —       | 45   | —    | deg  |
| High Level Pulse Width    | T <sub>H</sub>  | Specified by the output T <sub>H</sub> period within a range from 10cm to the arrival distance (average value of 50 pulses) | 400     | —    | 800  | μS   |
| Low Level Pulse Width     | T <sub>L</sub>  | Specified by the output T <sub>L</sub> period within a range from 10cm to the arrival distance (average value of 50 pulses) | 400     | —    | 800  | μS   |
| High Level Output Voltage | V <sub>H</sub>  | 10cm over the ray axis  | 4.5     | —    | —    | V    |
| Low Level Output Voltage  | V <sub>L</sub>  | 10cm over the ray axis  | —       | —    | 0.5  | V    |

## ●Application Circuit

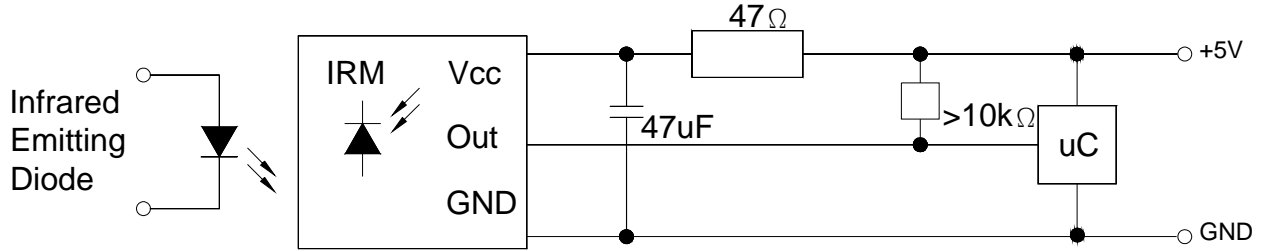


Fig.1 Transmitter Wave Form

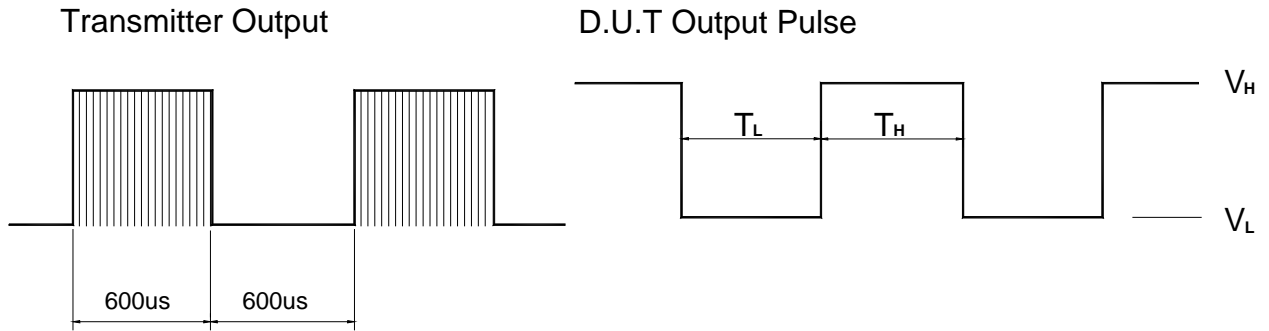


Fig.2 Measuring Method

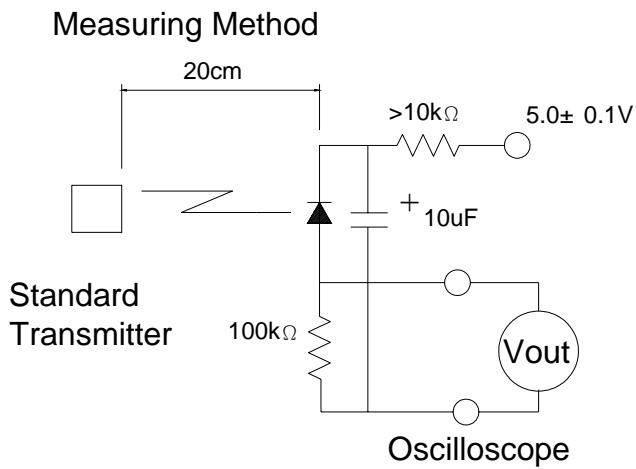
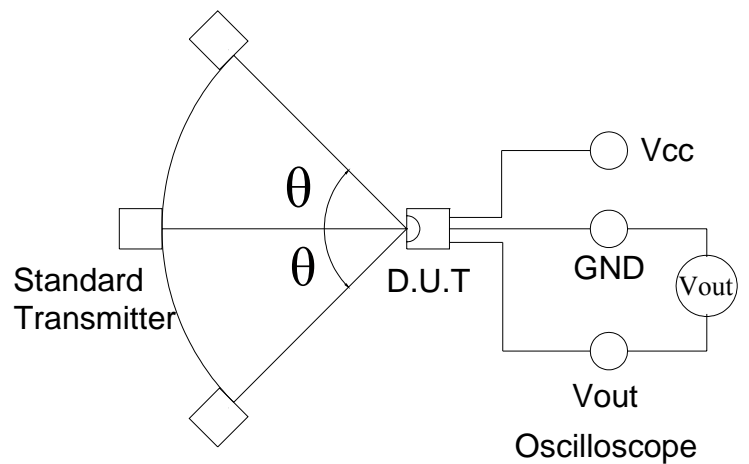


Fig.3 Measuring System



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

Fig.4 Relative Spectral Sensitivity vs. Wavelength

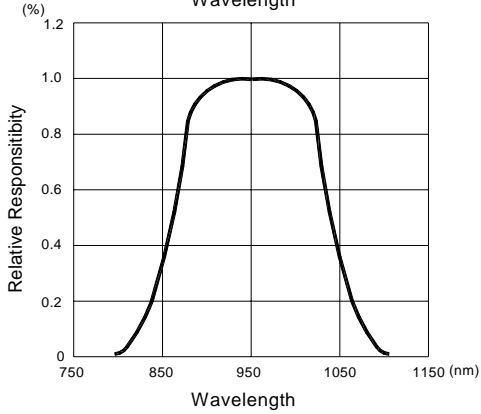


Fig.5 Relative Transmission Distance vs. Direction

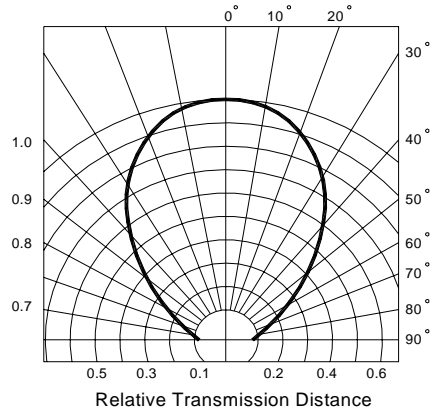


Fig.6 Output Pulse Diagram

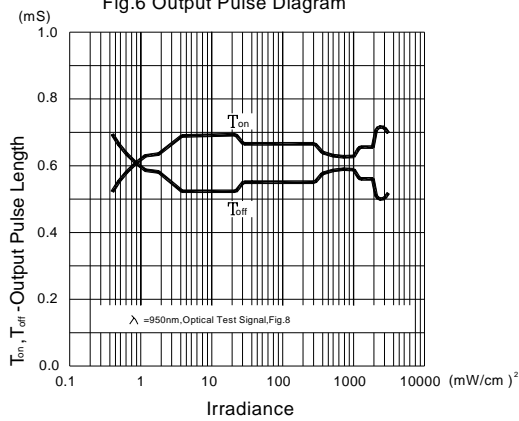


Fig.7 Supply Current vs. Ambient Temperature

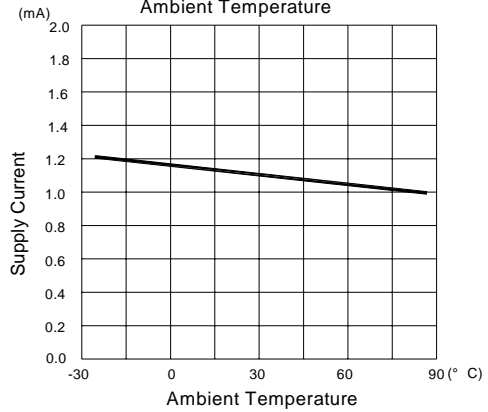


Fig.8 Frequency Dependence of Responsivity

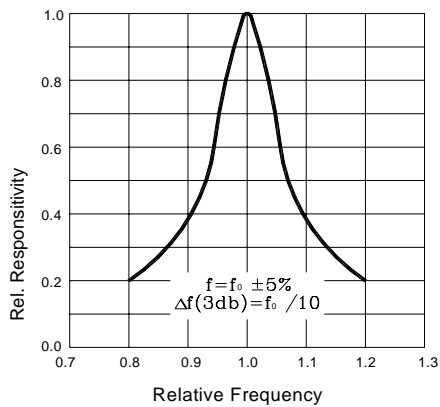
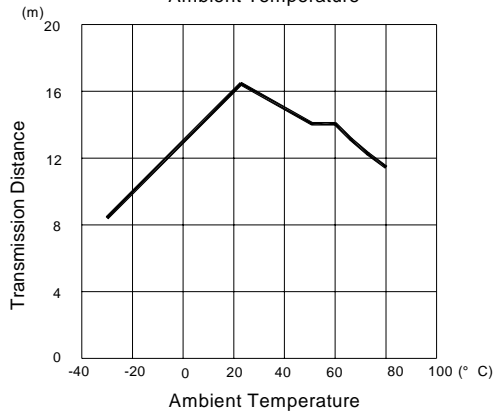
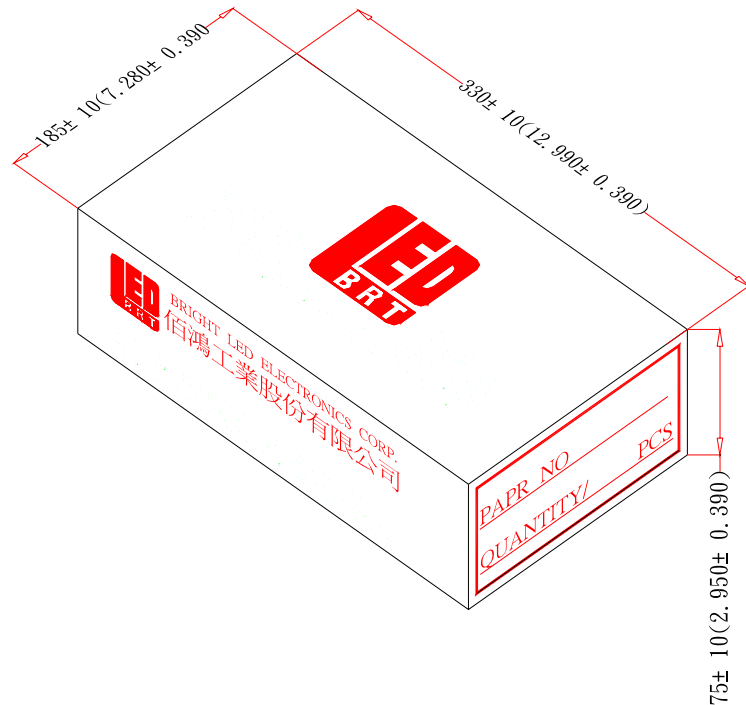


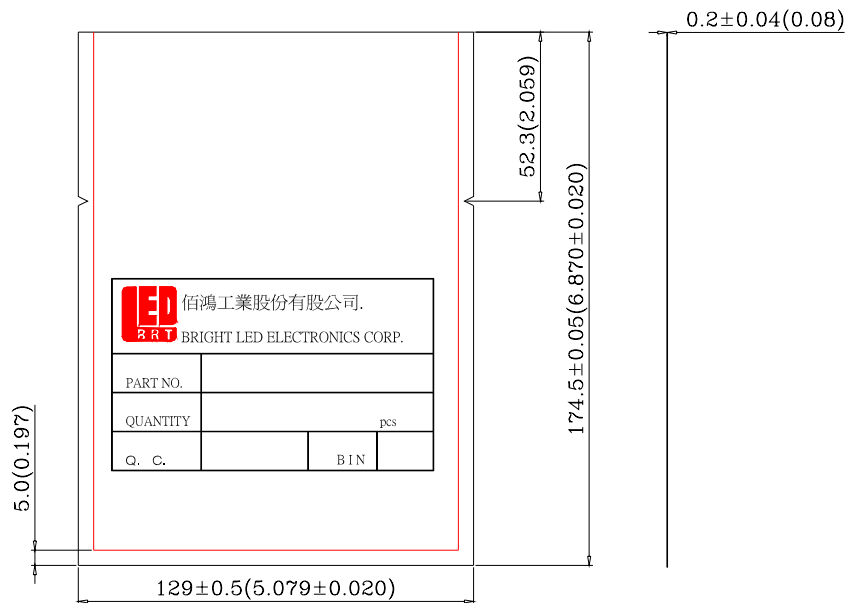
Fig.9 Arrival Distance Vs. Ambient Temperature



## ● Packaging Box Dimensions



## ● Packaging Bag Dimensions



### Notes:

- 1、250pcs per bag, 2Kpcs per box.
- 2、All dimensions are in millimeters( inches).
- 3、Specifications are subject to change without notice.