

# Data Sheet

## INFRARED RECEIVER MODULE

### ● Description

The OS-0038N 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 proton of remote control
  - 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( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Ratings	Unit	Notice
Supply Voltage	$V_s$	2.7-5.5	V	—
Operating Temperature	$T_{opr}$	-20~+65	$^{\circ}\text{C}$	—
Storage Temperature	$T_{stg}$	-40~+85	$^{\circ}\text{C}$	—
Soldering Temperature	$T_{sd}$	260	$^{\circ}\text{C}$	4mm from mold body less than 5 sec

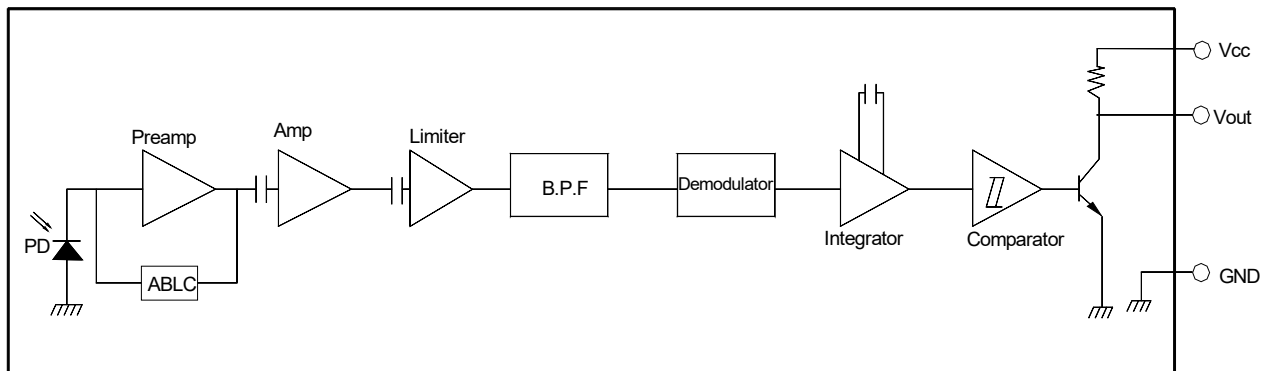
● **Electrical And Optical Characteristics**( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	$V_s$	2.7	--	5.5	V	
Supply Current	$I_{cc}$	—	0.35	0.6	mA	$I_{in}=0\mu\text{A}, V_{cc}=5\text{V}$
Reception Distance	$L_0$	15	—	—	m	At the ray axis*1
	$L_{35}$	8	—	—		
B.P.F Center Frequency	$f_o$	—	38	—	KHz	
Peak Wavelength	$p$	—	940	—	nm	
Half Angle		—	35	—	deg	At the ray axis *1
High Level Pulse Width	$T_H$	450	600	750	S	At the ray axis *2
Low Level Pulse Width	$T_L$	450	600	750	S	
High Level Output Voltage	$V_H$	4.5	—	—	V	
Low Level Output Voltage	$V_L$	—	—	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  $\theta=45^{\circ}$

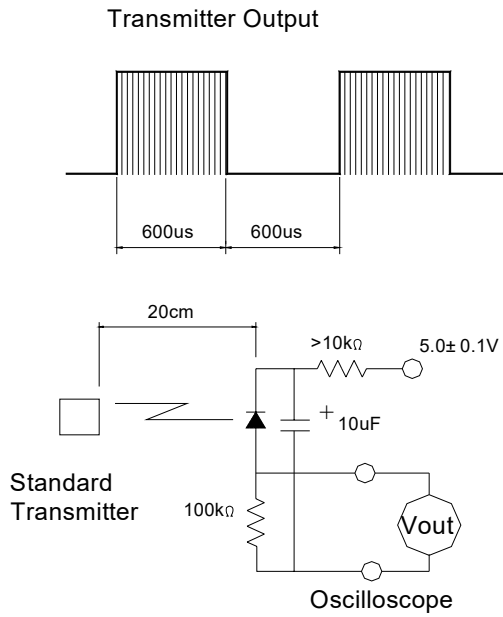
\*2: A range from 30cm to the arrival distance. Average value of 50 pulses

● **BLOCK DIAGRAM**

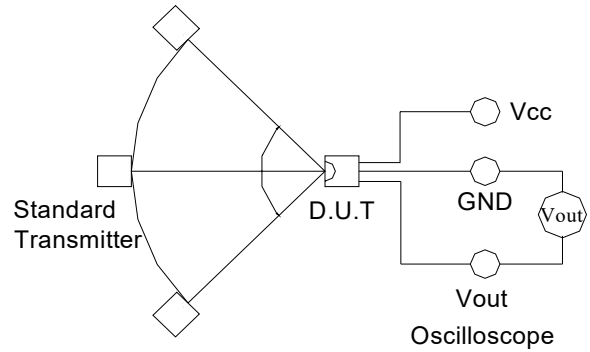


## ● Test Method

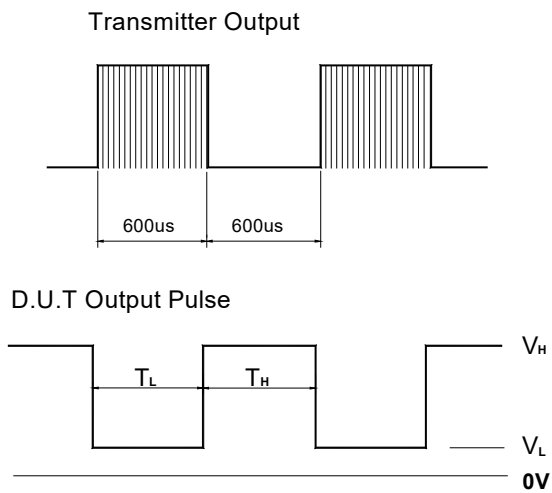
### A. Standard Transmitter



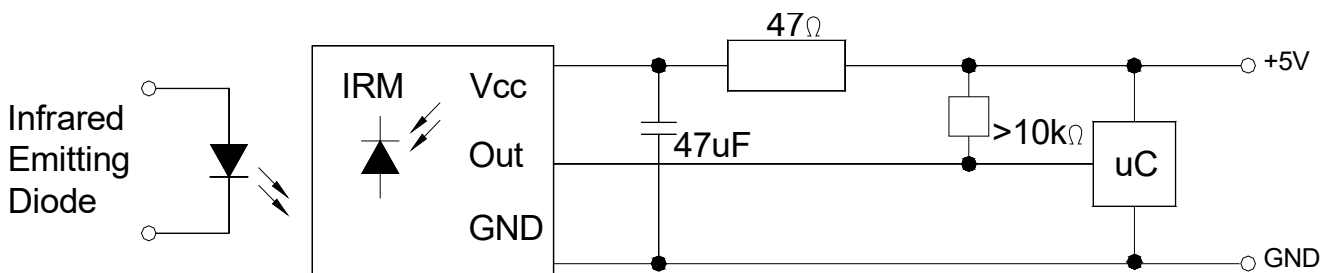
### B. Detection Length Test



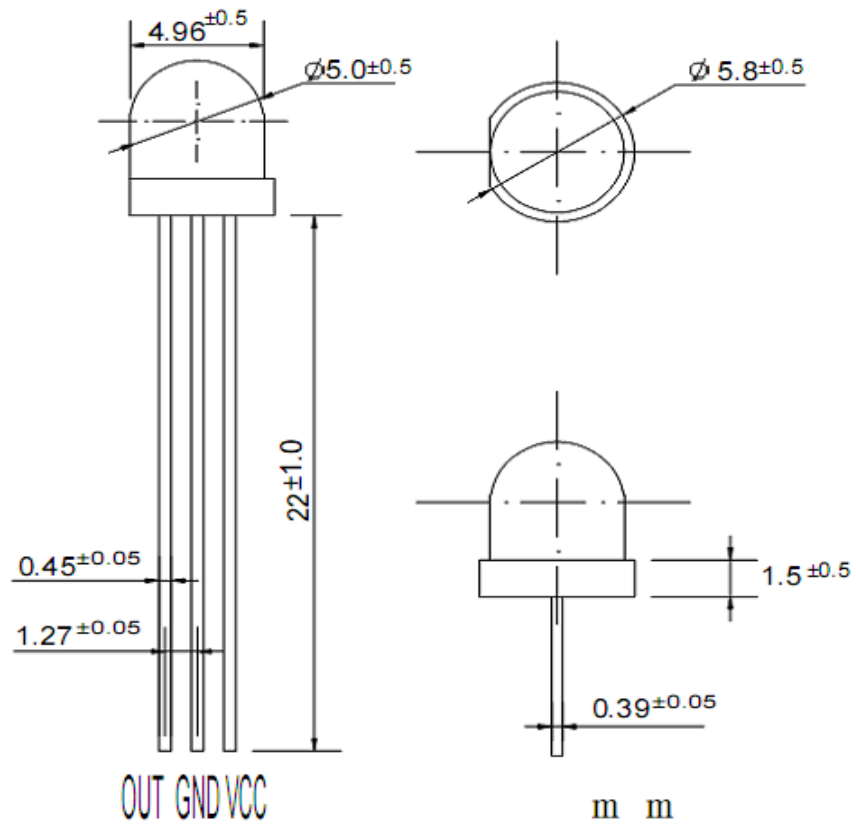
### C. Pulse Width Test



## ● Application Circuit



● Package Dimensions:



NOTES:

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

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

