

## IR receiver, 2.7V-5.5V

### INFRARED RECEIVER MODULE

#### ● Description

The OS-0038G 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 portion 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~+85	$^{\circ}\text{C}$	—
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

# Datasheet

Item no. 1564544

V1\_0917\_01\_en

## IR receiver, 2.7V-5.5V

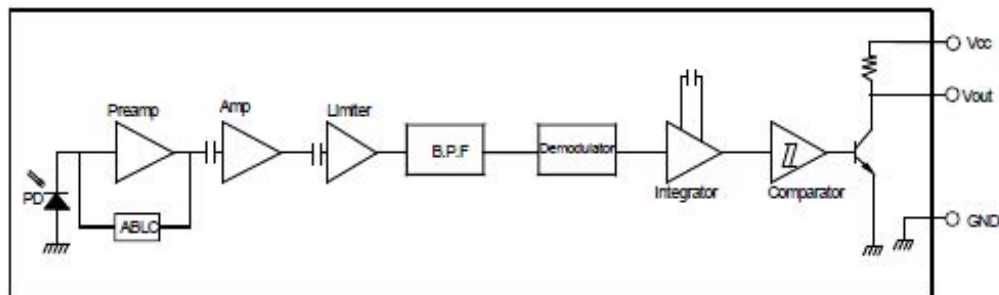
### ● Electrical And Optical Characteristics ( $T_a=25^{\circ}\text{C}$ )

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	$L_0$	12	—	—	m	At the ray axis*1
	$L_{35}$	8	—	—		
B.P.F Center Frequency	$f_0$	—	38	—	KHz	
Peak Wavelength	$\lambda_p$	—	940	—	nm	
Half Angle	$\theta \pm$	—	35	—	deg	At the ray axis *1
High Level Pulse Width	$T_H$	450	600	750	$\mu\text{S}$	At the ray axis *2
Low Level Pulse Width	$T_L$	450	600	750	$\mu\text{S}$	
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



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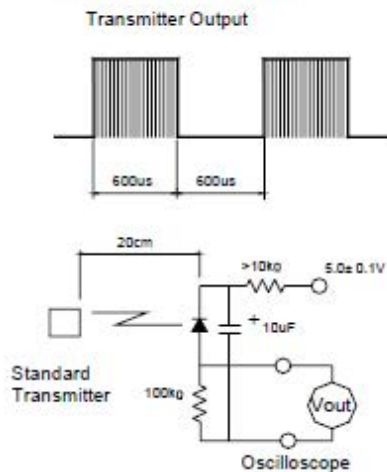
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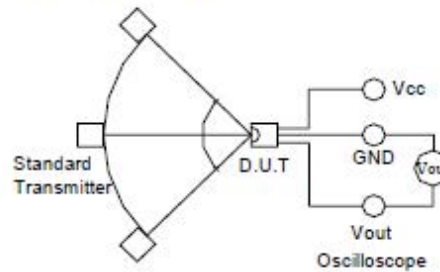
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### ● Test Method

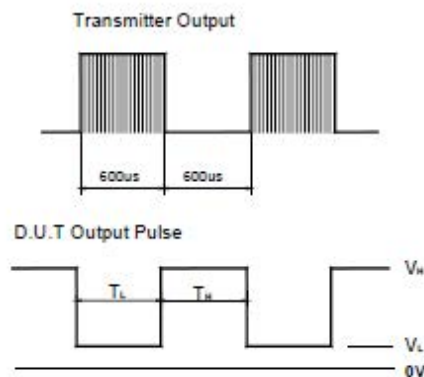
#### A. Standard Transmitter



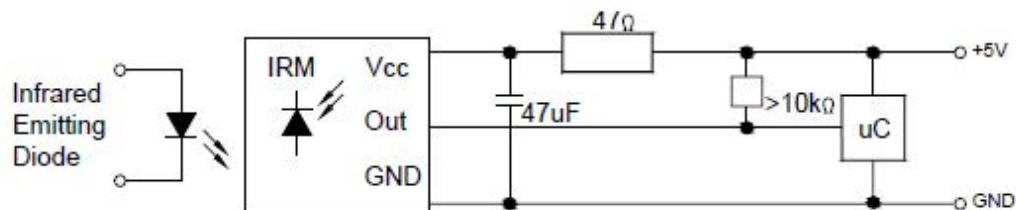
#### B. Detection Length Test



#### C. Pulse Width Test



### ● Application Circuit



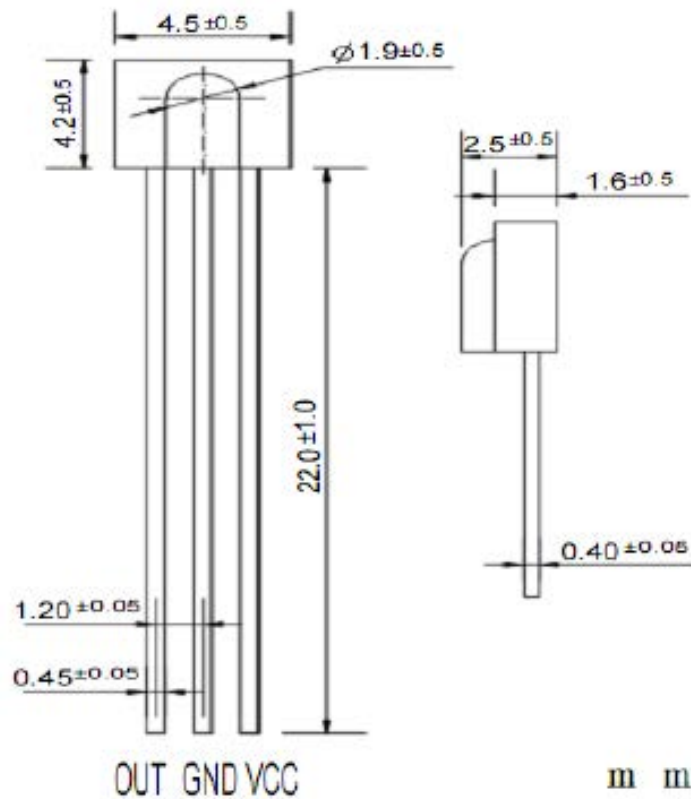
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#### ● Package Dimensions:



#### 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.

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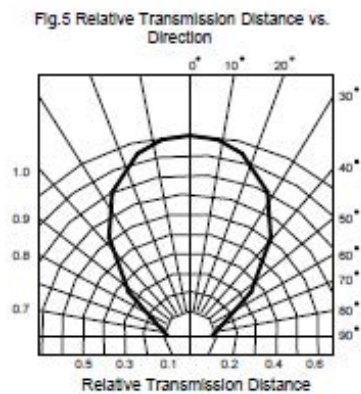
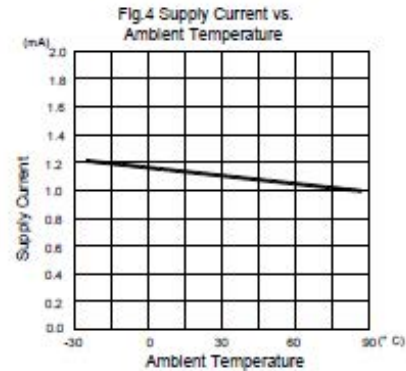
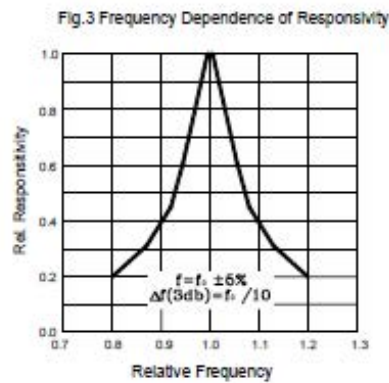
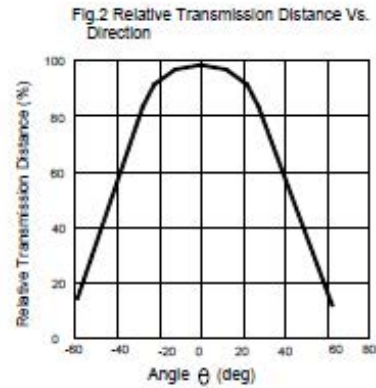
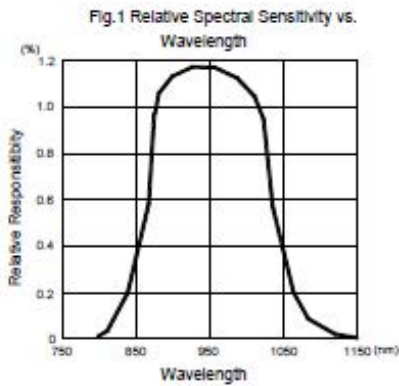
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### ● Electrical And Optical Curves(Ta=25°C)



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