

## INFRARED RECEIVER MODULE

### Description

The BRM-H1038M2-F3 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 IC( ATmel)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
- 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 )

Parameter	Symbol	Ratings	Unit	Notice
Supply Voltage	Vs	4.5-5.5	V	—
Operating Temperature	Topr	-20~+65		—
Storage Temperature	Tstg	-40~+85		—
Soldering Temperature	Tsd	260		4mm from mold body less than 5 sec

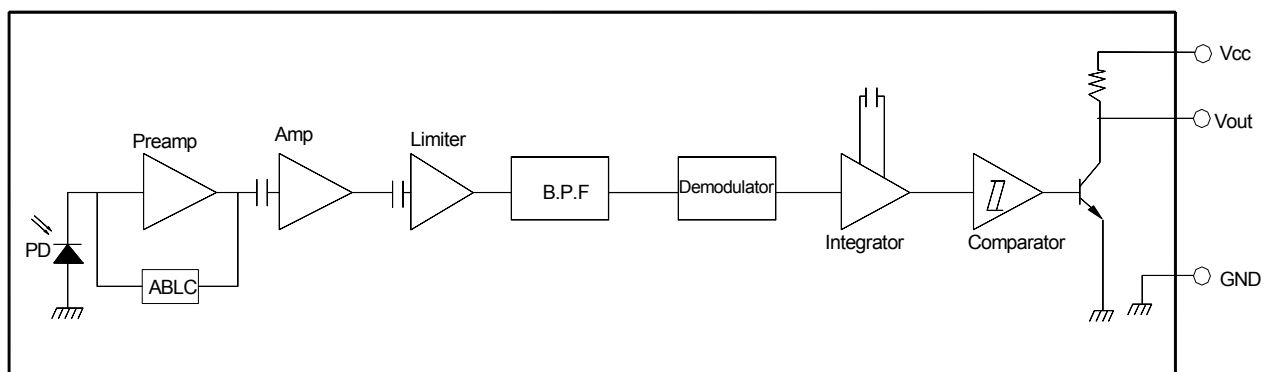
● **Electrical And Optical Characteristics**( $T_a=25$  )

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	$V_s$	4.5	5.0	5.5	V	
Supply Current	$I_{cc}$	—	—	1.5	mA	No signal input
Reception Distance	$L_0$	15	—	—	m	At the ray axis*1
	$L_{45}$	8	—	—		
B.P.F Center Frequency	$f_o$	—	38	—	KHz	
Peak Wavelength	$\lambda_p$	—	940	—	nm	
Half Angle	$\theta$	—	45	—	deg	At the ray axis *1
High Level Pulse Width	$T_H$	400	—	800	$\mu S$	At the ray axis *2
Low Level Pulse Width	$T_L$	400	—	800	$\mu S$	
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  $\theta=45^\circ$

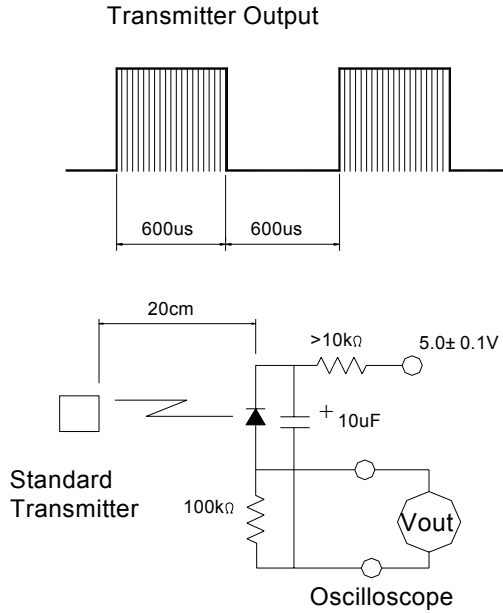
\*2: A range from 30cm to the arrival distance. Average value of 50 pulses

**BLOCK DIAGRAM**

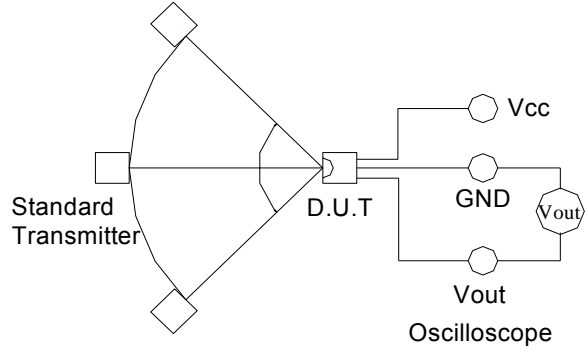


### ● Test Method

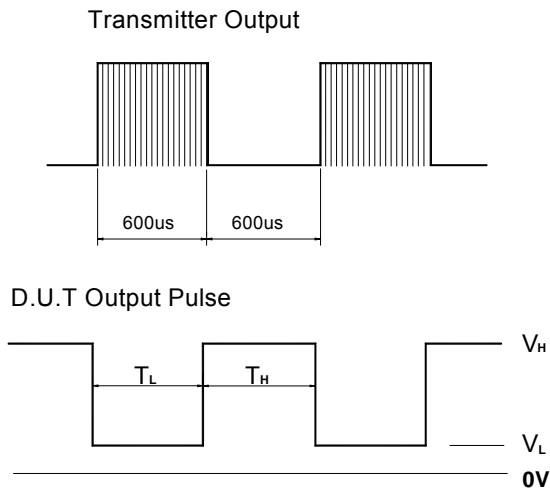
#### A. Standard Transmitter



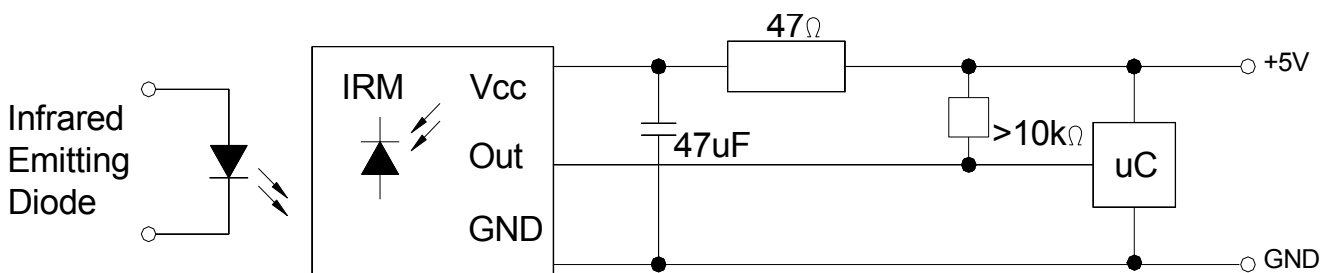
#### B. Detection Length Test



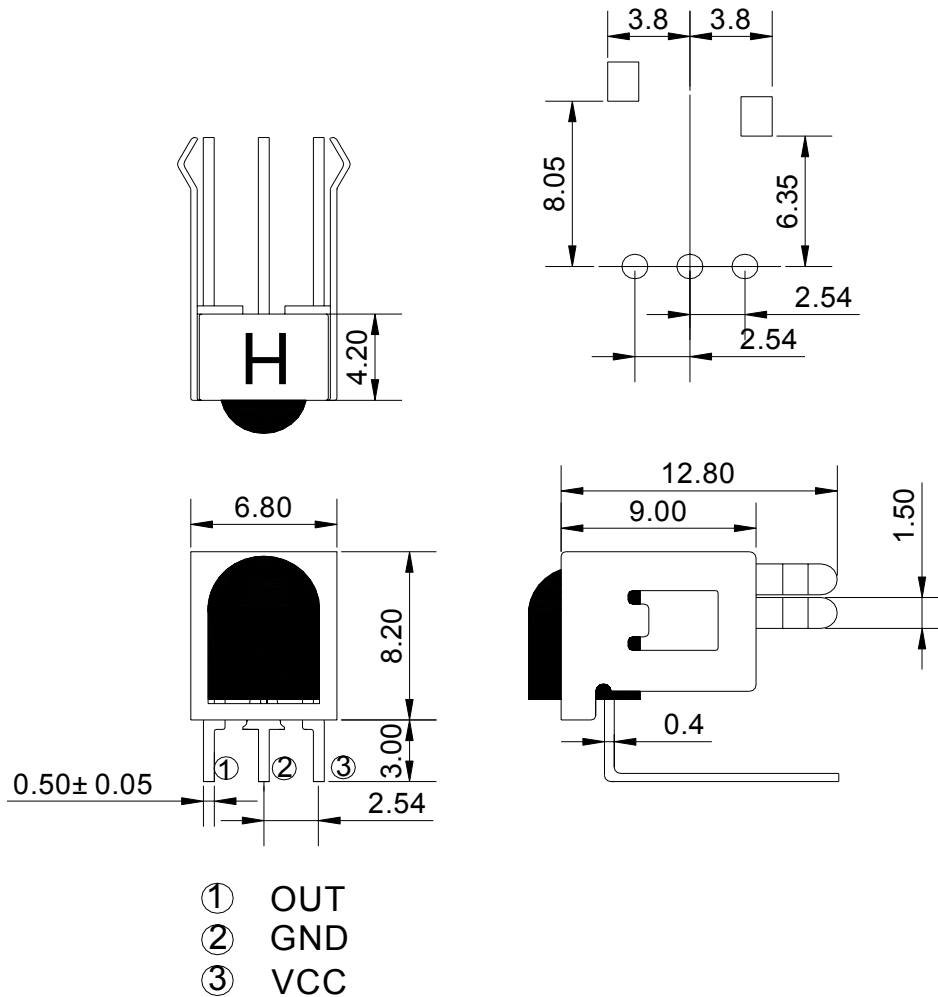
#### C. Pulse Width Test



### ● Application Circuit



### Package Dimensions:



### NOTES:

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

● Electrical And Optical Curves(Ta=25 )

