

## DATA SHEET

● DEVICE NUMBER : HL-H838HS

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2014-8-18	1.0	1.0	1.0	1.0	1.0						Initial Released

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## INFRARED RECEIVER MODULE

### ● Description

The HL-H838HS 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.

### ● 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>	2.4-6.5	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

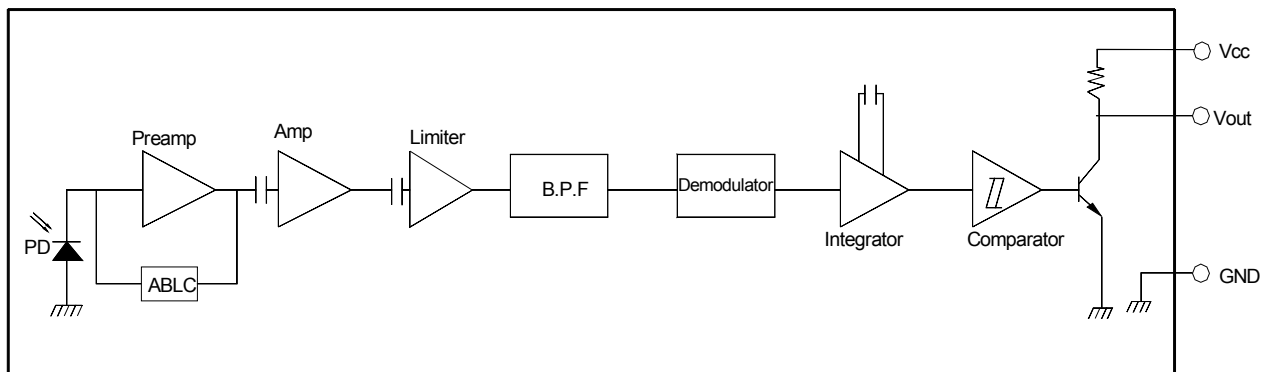
● **Electrical And Optical Characteristics**( $T_a=25^{\circ}\text{C}$ )

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	$V_s$	2.7	--	6	V	
Supply Current	$I_{cc}$	—	0.8	1.5	mA	No signal input
Reception Distance	$L_0$	20	—	—	m	At the ray axis*1
	$L_{45}$	10	—	—		
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	$\mu\text{S}$	At the ray axis *2
Low Level Pulse Width	$T_L$	400	—	800	$\mu\text{S}$	
High Level Output Voltage	$V_H$	$V_{cc}-0.3$	—	—	V	
Low Level Output Voltage	$V_L$	—	—	0.3	V	

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

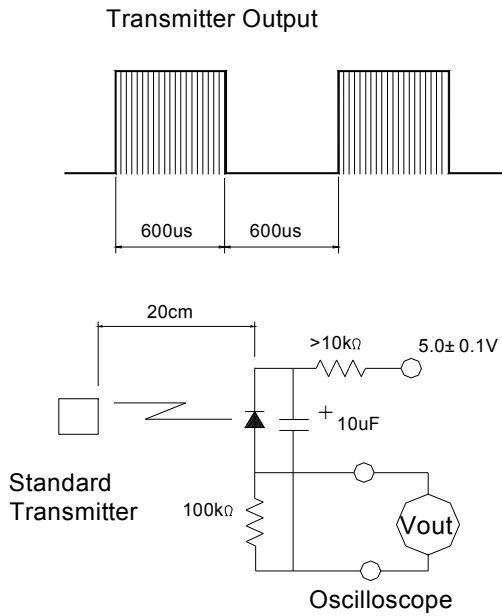
\*2: A range from 30cm to the arrival distance. Average value of 50 pulses

● **BLOCK DIAGRAM**

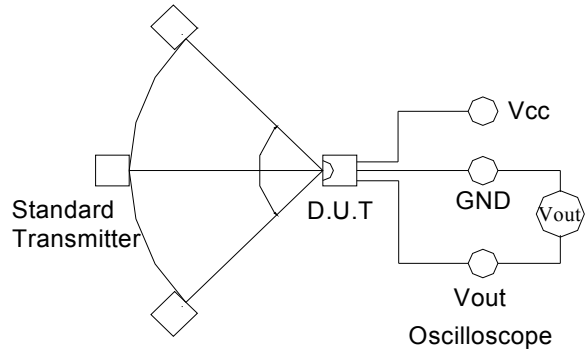


● **Test Method**

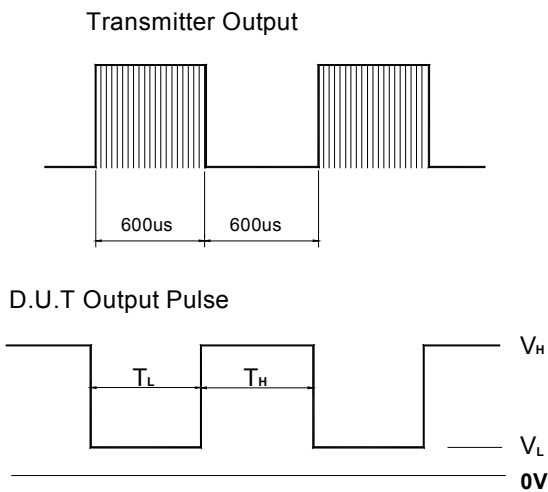
A. Standard Transmitter



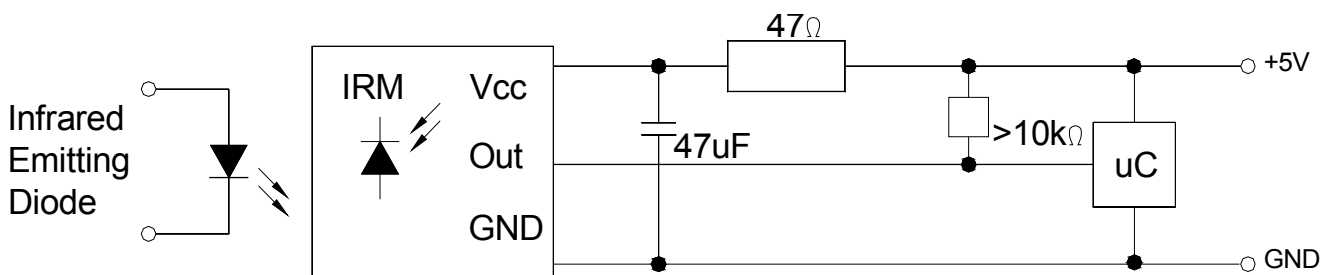
B. Detection Length Test



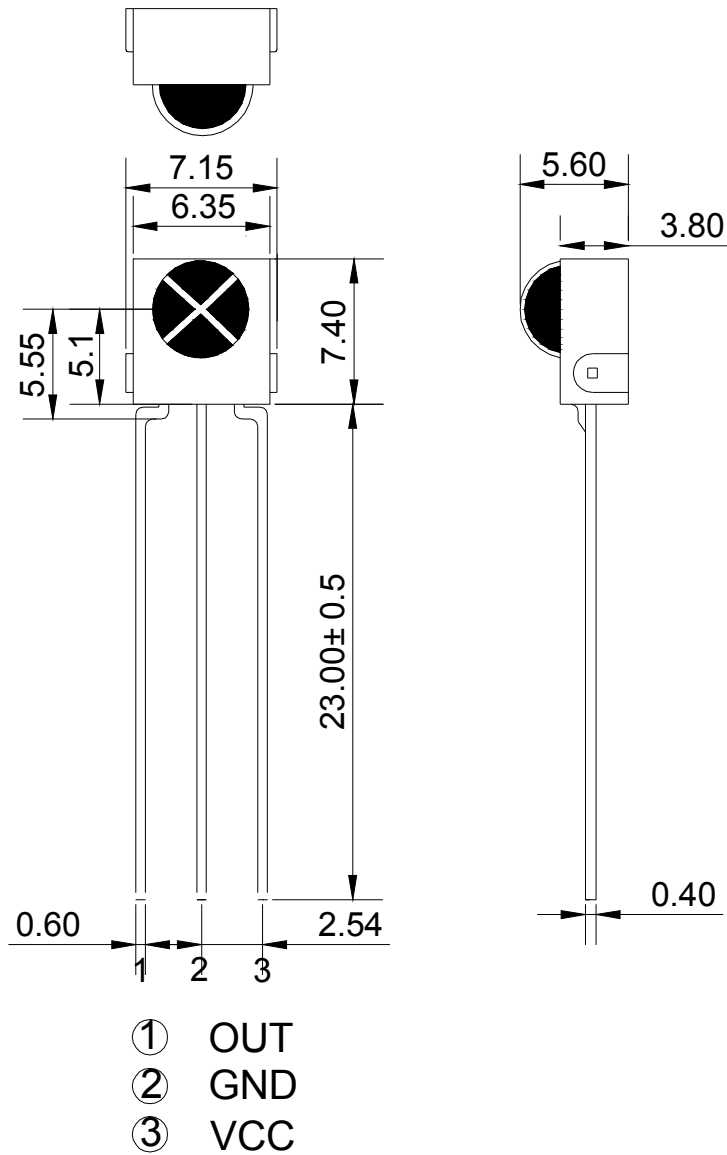
C. Pulse Width Test



● **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°C)**

