DATA SHEET

● **DEVICE NUMBER：AX-1838HS**

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2007-4-19	1.0	1.0	1.0	1.0	1.0	1.0					Initial Released

APPROVED	DRAWER

INFRARED RECEIVER MODULE

● Description

TheAX-1838HS 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.
- ? **8ms data pause time codes are acceptable** .

● 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	2.1-6.5	V	¡
Operating Temperature	Topr	-20~+65	℃	¡
Storage Temperature	Tstg	-40~+85	℃	¡
Soldering Temperature	Tsd	260	℃	4mm from mold body less than 5 sec

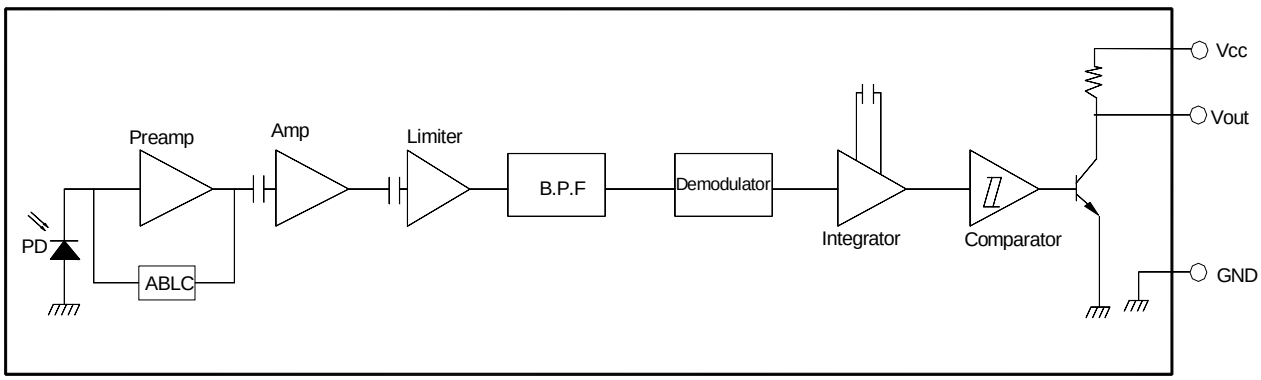
▯ Electrical And Optical Characteristics(Ta=25℃)

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	Vs	2.1	-	5.5	V	
Supply Current	Icc	¡	¡	1.5	mA	No signal input
Reception Distance	L_0	17	¡	¡	m	At the ray axis*1
	L_{45}	8	¡	¡		
B.P.F Center Frequency	fo	¡	38	¡	KHz	
Peak Wavelength	λp	¡	940	¡	nm	
Half Angle	θ	¡	45	¡	deg	At the ray axis *1
High Level Pulse Width	T_H	400	¡	800	μS	At the ray axis *2
Low Level Pulse Width	T_L	400	¡	800	μS	
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 θ=0° and θ=45°

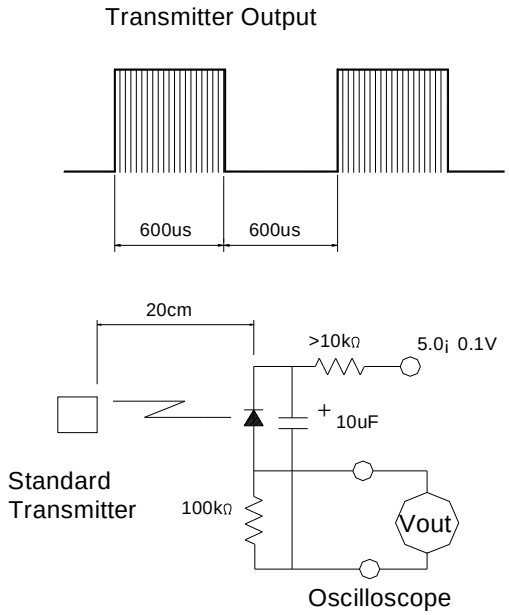
*2:A range from 30cm to the arrival distance. Average value of 50 pulses

● BLOCK DIAGRAM

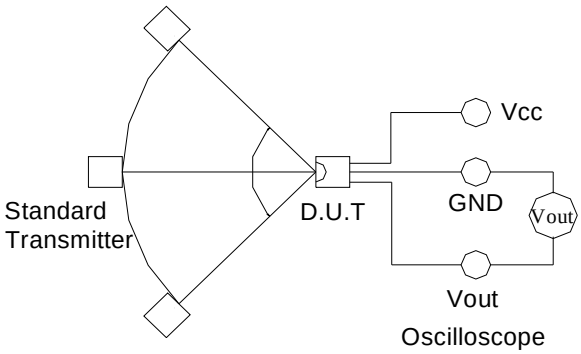


Test Method

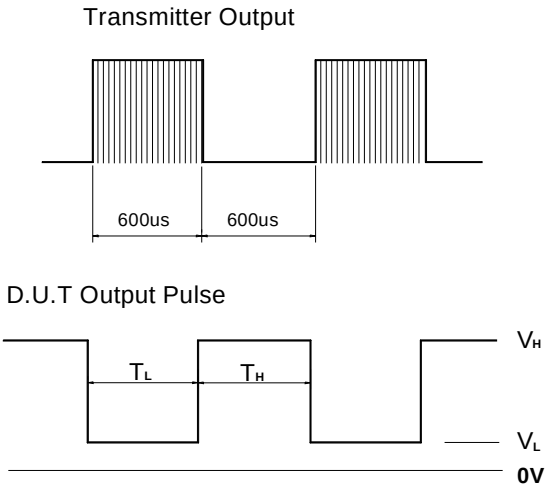
A.Standard Transmitter



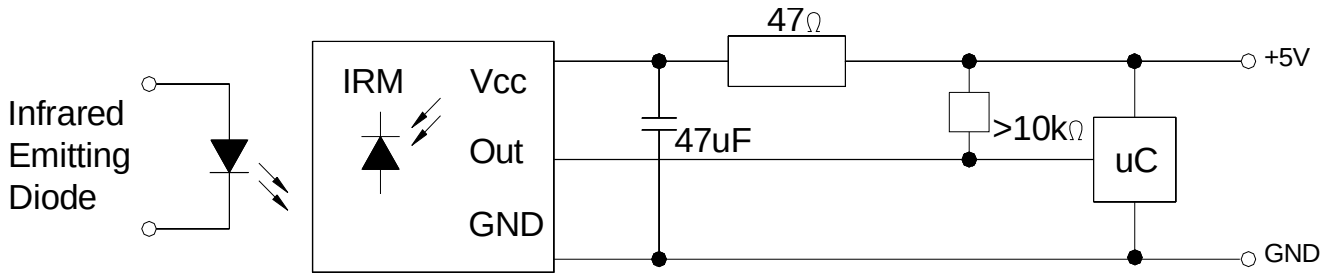
B.Detection Length Test



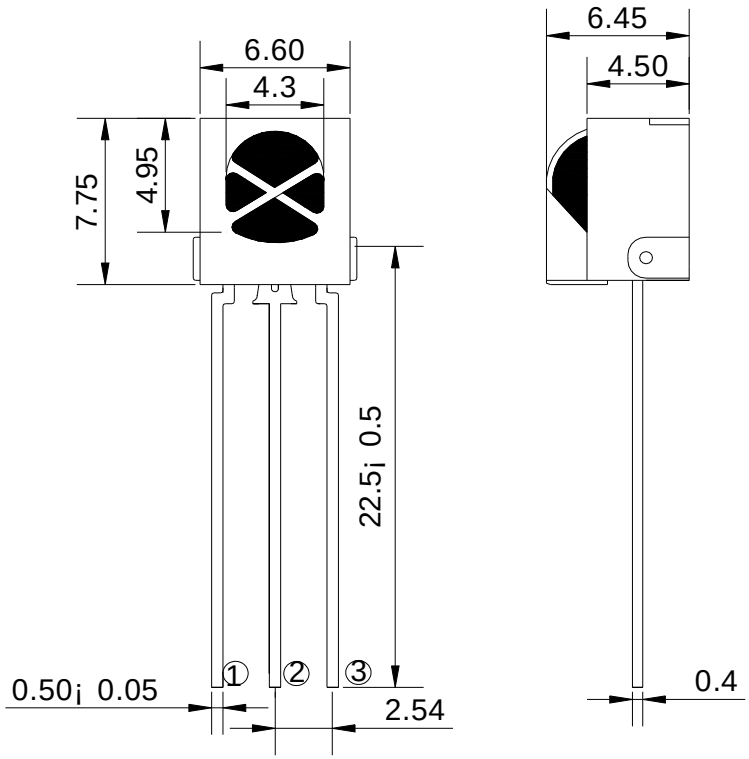
C.Pulse Width Test

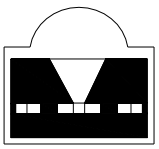


Application Circuit



●Package Dimensions:





① OUT
② GND
③ VCC

NOTES:

1.All dimensions are in millimeters (inches).
2.Tolerance is ¡0. 30mm (0.012¡¡) unless otherwise specified.
3.Specifications are subject to change without notice.

Electrical And Optical Curves(Ta=25℃)

Fig.1 Relative Spectral Sensitivity vs. Wavelength

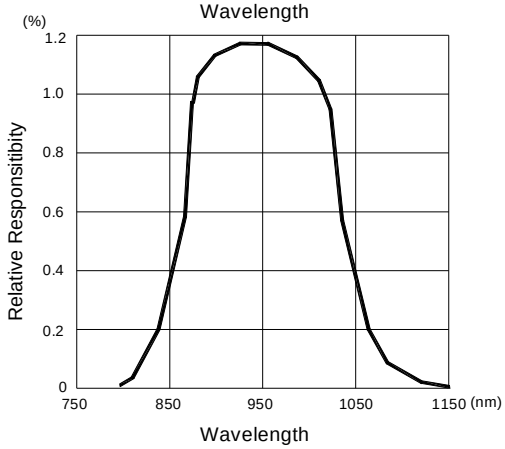


Fig.2 Relative Transmission Distance Vs. Direction

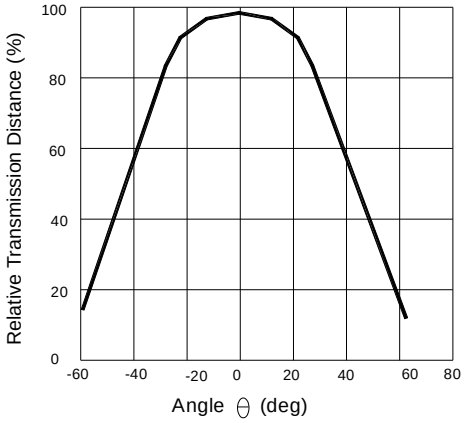


Fig.3 Frequency Dependence of Responsivity

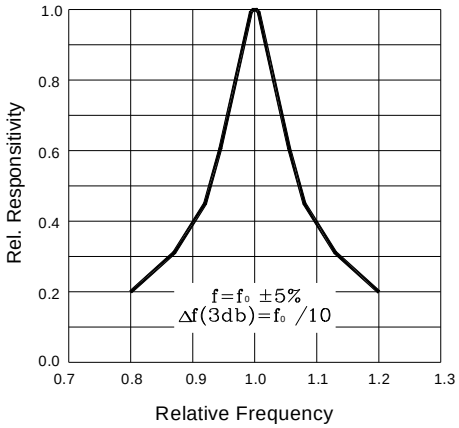


Fig.4 Supply Current vs. Ambient Temperature

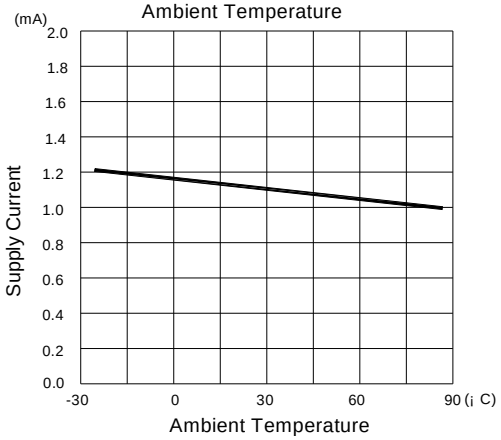


Fig.5 Relative Transmission Distance vs. Direction