VS-1838B

INFRARED RECEIVER MODULE

● Description

The VS-1838B 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 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	2.7-5.5	V	—
Operating Temperature	Topr	-20~+65	℃	—
Storage Temperature	Tstg	-40~+85	℃	—
Soldering Temperature	Tsd	260	℃	4mm from mold body less than 5 sec

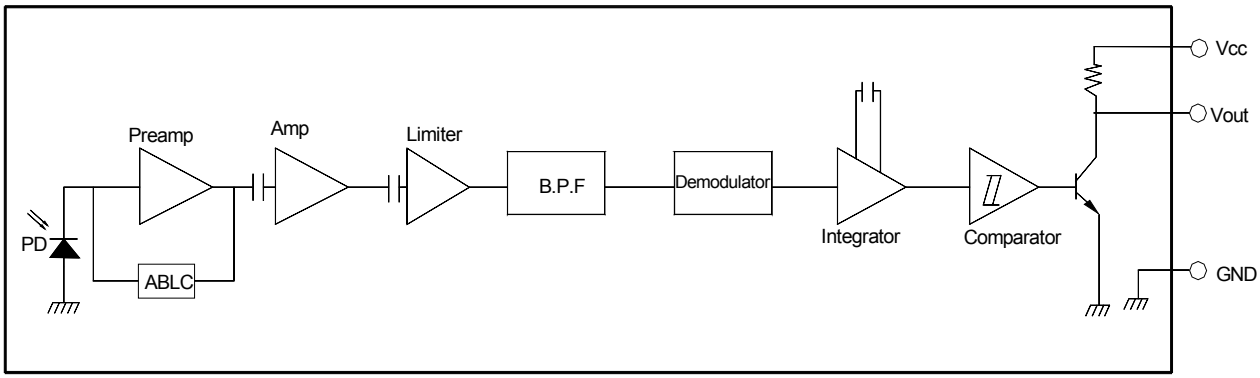
● Electrical And Optical Characteristics (Ta=25℃)

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	V_S	2.7	--	5.5	V	
Supply Current	Icc	—	0.35	0.6	mA	Iin=0uA, Vcc=5V
Reception Distance	L_0	18	—	—	m	At the ray axis*1
	L_{35}	12	—	—		
B.P.F Center Frequency	fo	—	38	—	KHz	
Peak Wavelength	λp	—	940	—	nm	
Half Angle	θ ±	—	35	—	deg	At the ray axis *1
High Level Pulse Width	T_H	450	600	750	μS	At the ray axis *2
Low Level Pulse Width	T_L	450	600	750	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°

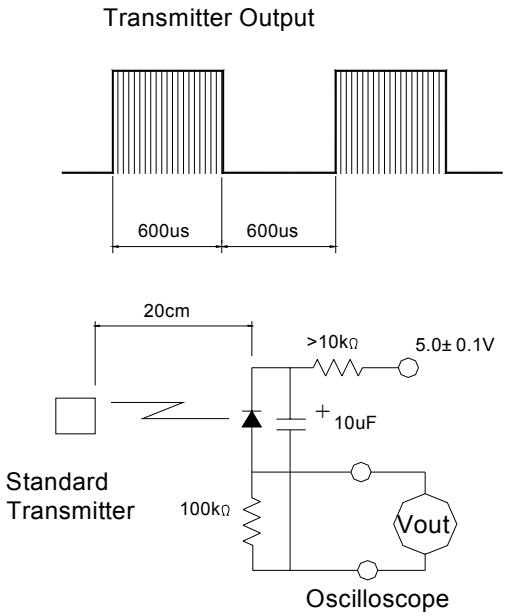
*2:A range from 30cm to the arrival distance. Average value of 50 pulses

● BLOCK DIAGRAM

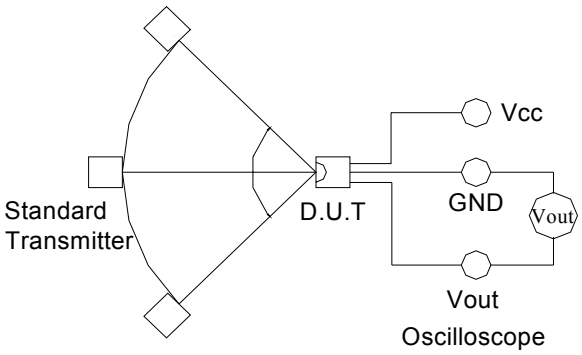


●Test Method

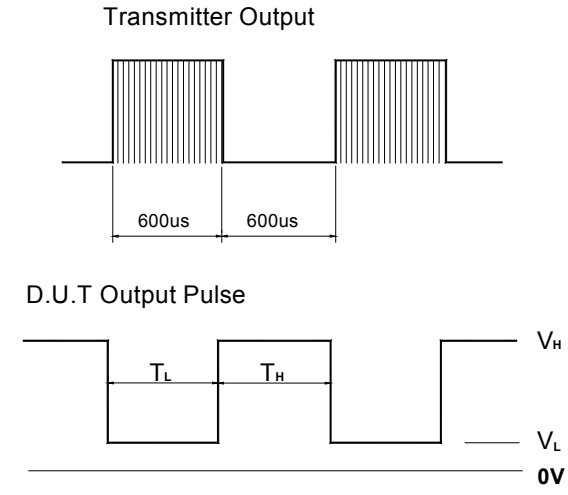
A.Standard Transmitter



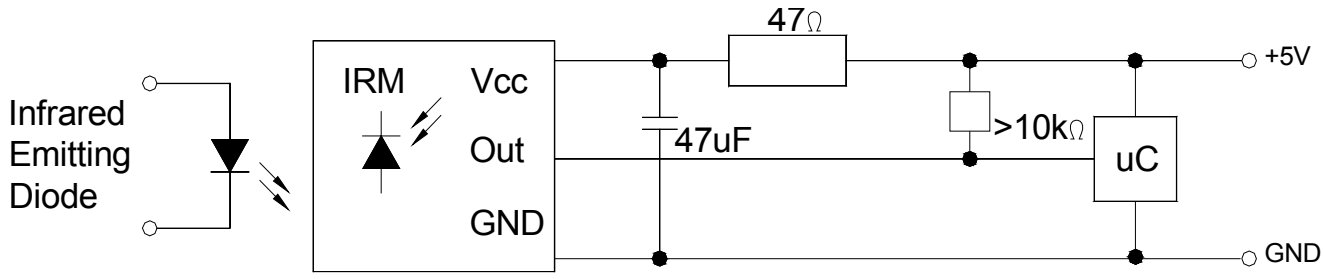
B.Detection Length Test



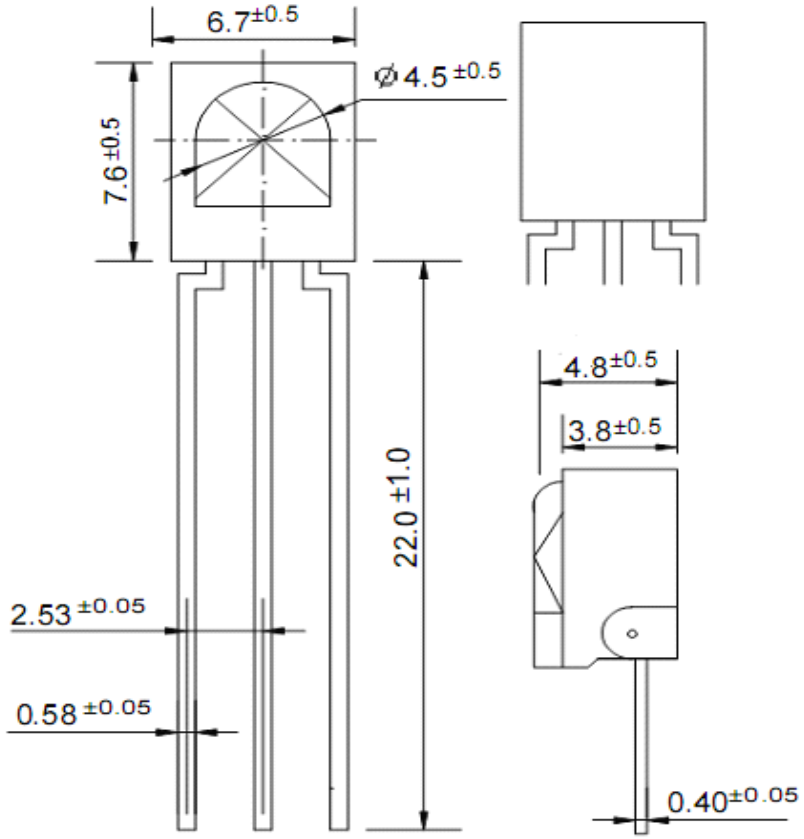
C.Pulse Width Test



● Application Circuit



●Package Dimensions:



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

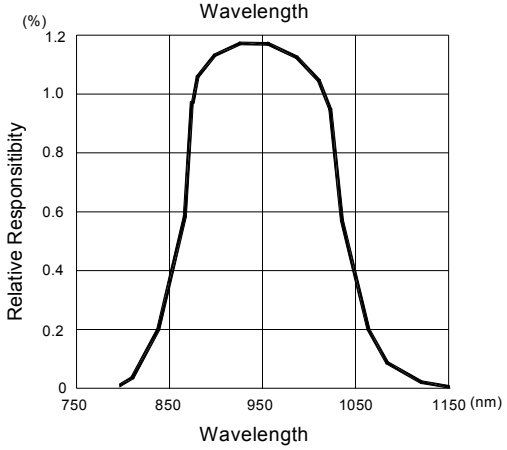


Fig.2 Relative Transmission Distance Vs. Direction

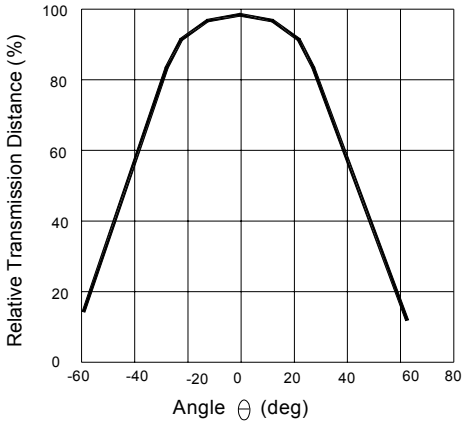


Fig.3 Frequency Dependence of Responsivity

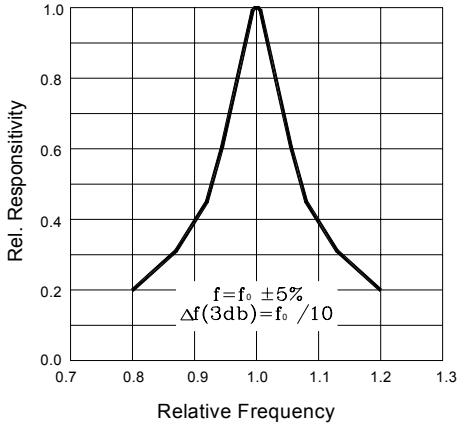


Fig.4 Supply Current vs. Ambient Temperature

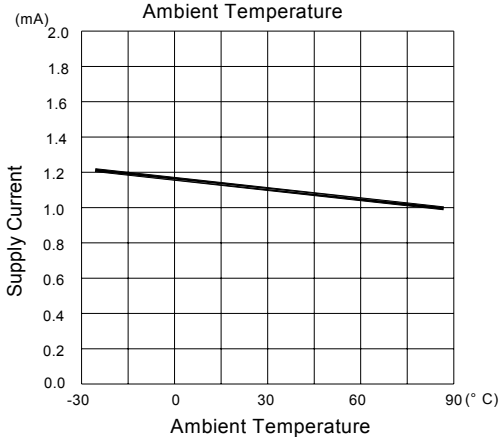


Fig.5 Relative Transmission Distance vs. Direction