RODAN(TAIWAN)LTD.

INFRARED RECEIVER MODULE

1.ELEMENT APPEARANCE

Model No.	Lighting Color	Resin Color
RT-IRM6638	Non-Visible	Water Clear

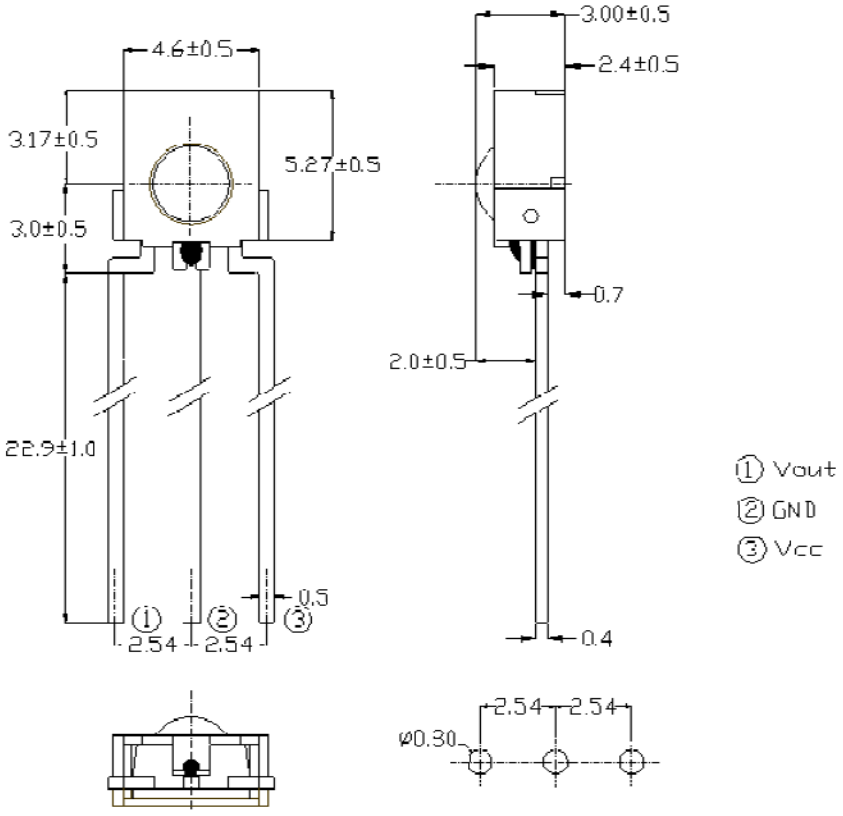
2.ABSOLUTE MAXIMUM RATINGS AT Ta=25℃

Characteristic	Symbol	Rating	Unit
Supply voltage	Vcc	6	V
Operating temperature	Topr	-20 to +85	℃
Storage temperature	Tstg	-40 to +85	℃

3.ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25℃，Vcc=3V

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Current consumption	Icc	No input signal		0.9	1.5	mA
Supply voltage	Vcc		2.7	-	5.5	V
Peak wavelength	λp			940		nm
Reception range	L_0	See chapter, Test method'	14			m
	L_{45}		6			
Viewing angle (horizontal)	2θ 1/2 h			50		deg.
Viewing angle (vertical)	2θ 1/2 v			50		
High level pulse width	T_H	Test signal according to figure 1	400		800	μs
Low level pulse width	T_L		400		800	
High level output voltage	V_{OH}	Isource≦1μA	V_{CC}-0.4			V
Low level output voltage	V_{OL}	I_{SINK}≦2 mA		0.2	0.5	V

4.DIMENSIONS UNIT： m/m

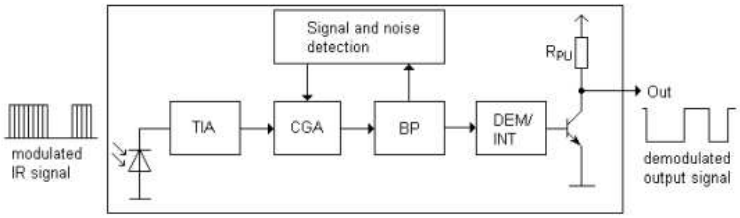


5.BLOCK DIAGRAM

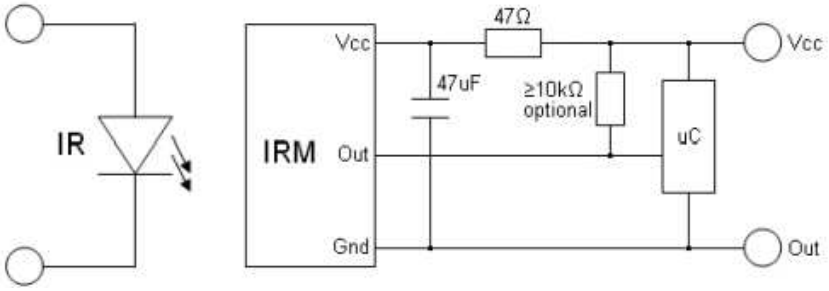
Pin Configuration

1. OUT
2. GND
3. V_{CC}

Block Diagram



6.APPLICATION CIRCUIT



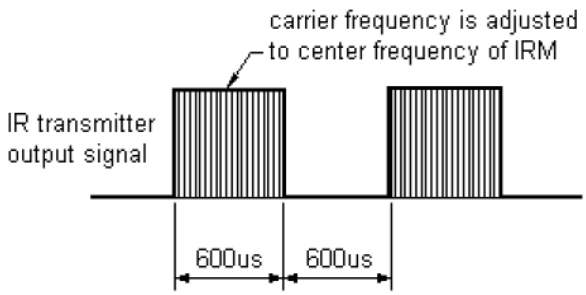
The RC Filter must be connected as close as possible to Vcc and GND pins.

7. TEST METHOD

The specified electro-optical characteristics are valid under the following conditions.

1. Measurement environment
   A place without extreme light reflections.
2. External light
   The environment contains an ordinary, white fluorescent lamp without high frequency modulation. The color temperature is 2856K and the illumination at the IR receiver is less than 10 Lux (Ev≤10Lux).
3. Standard transmitter
   The test transmitter is calibrated by using the circuit shown in figure 2. The radiation intensity of the transmitter is adjusted until **Vo=400mVp-p.** Both, the test transmitter and the photo diode, have a peak wavelength of 940nm. The photo diode for calibration is PD438B (λp=940nm, Vr=5V).
4. The measurement system is shown in Fig.-3

Fig.-1 Transmitter Wave Form



D.U.T output Pulse

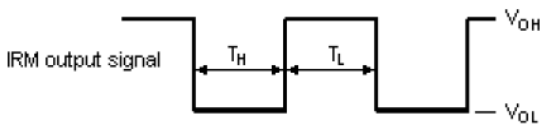


Fig.-2 standard transmitter calibration

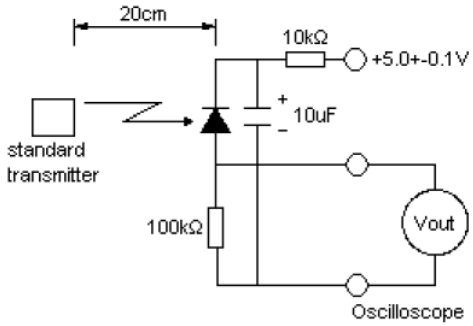


Fig.-3 Measuring System

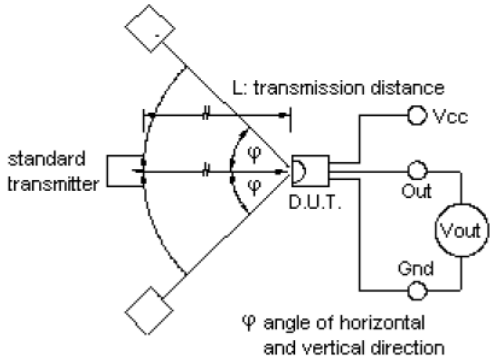


Fig.-4 Reverse Light Current vs. Wavelength

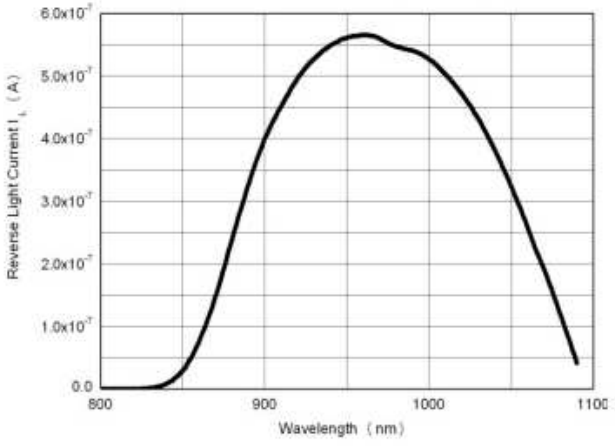


Fig.-5 Relative Transmission Distance vs. Direction

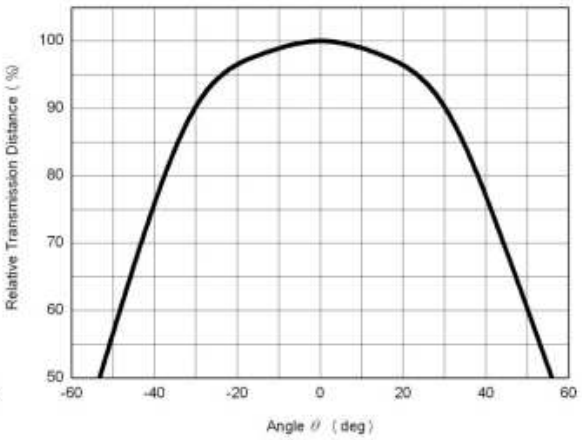


Fig.-6 Output Pulse Width vs. Transmission Distance

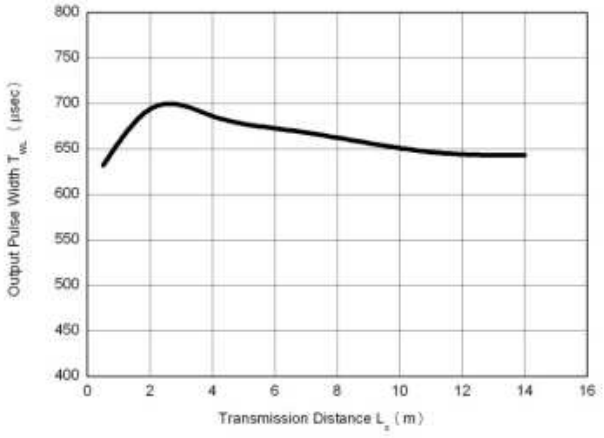


Fig.-7 Relative Transmission Distance vs. Supply Voltage

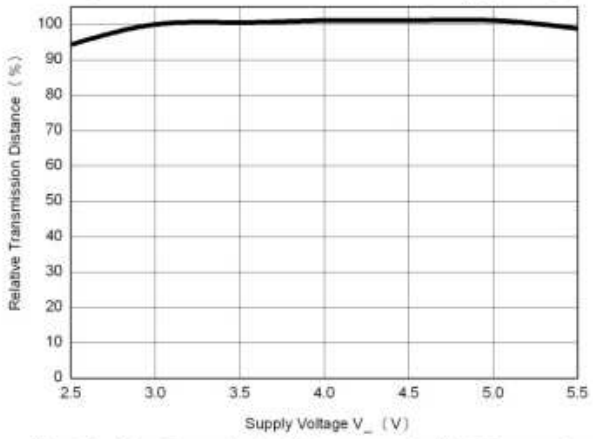


Fig.-8 Relative Transmission Distance vs. Carrier Frequency

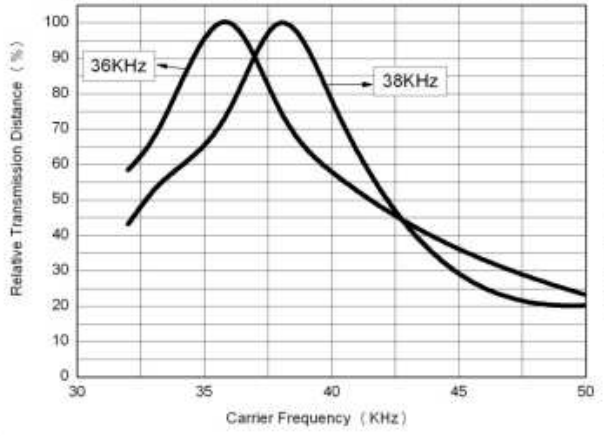
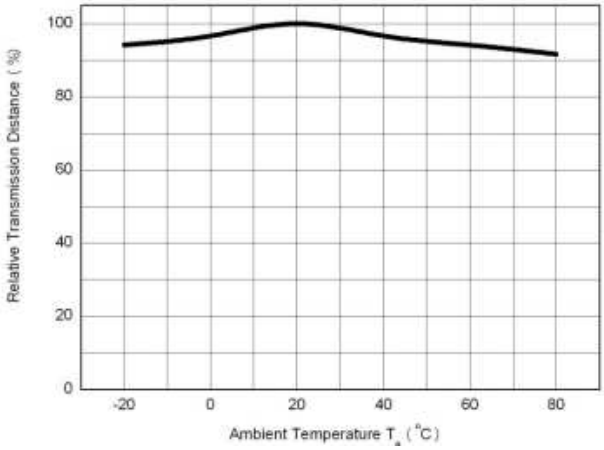


Fig.-9 Relative Transmission Distance vs. Ambient Temperature



8. CODE INFORMATION

Protocol	Suitable	Protocol	Suitable
JVC	Yes	RCA	Yes
Matsushita	Yes	Sharp	Yes
Mitsubishi	Yes	Sony 12 Bit	Yes
NEC	Yes	Sony 15 Bit	Yes
RC5	Yes	Sony 20Bit	No
RC6	Yes	Toshiba	Yes
RCMM	No	Zenith	Yes
RCS-80	No	Continuous Code	No