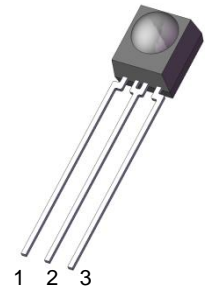


Features

- High protection ability against EMI
- Circular lens for improved reception characteristics
- Available for Carrier Frequencies between 30KHz to 56KHz
- TTL and CMOS Compatible
- Low operating voltage ($V_{CC} = 2.5V$)
- High immunity against ambient light
- Long reception range
- High sensitivity
- Pb free and RoHS compliant



Description

The IRM-3600 devices are miniature type infrared receivers which have been developed and designed by using the latest IC technology. The photo diode and preamplifier are assembled onto a lead frame and molded into an epoxy package which operates as an IR filter. The receiver provides a modulated output signal which can be used for IR code learning and IR repeater.

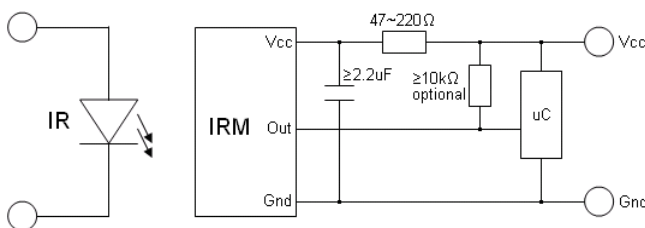
Pin Configuration

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

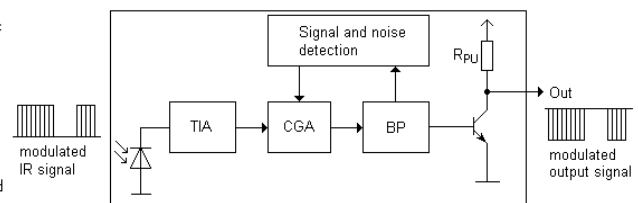
Applications

- IR code learning
- IR repeater
- remote control

Application Circuit



Block Diagram



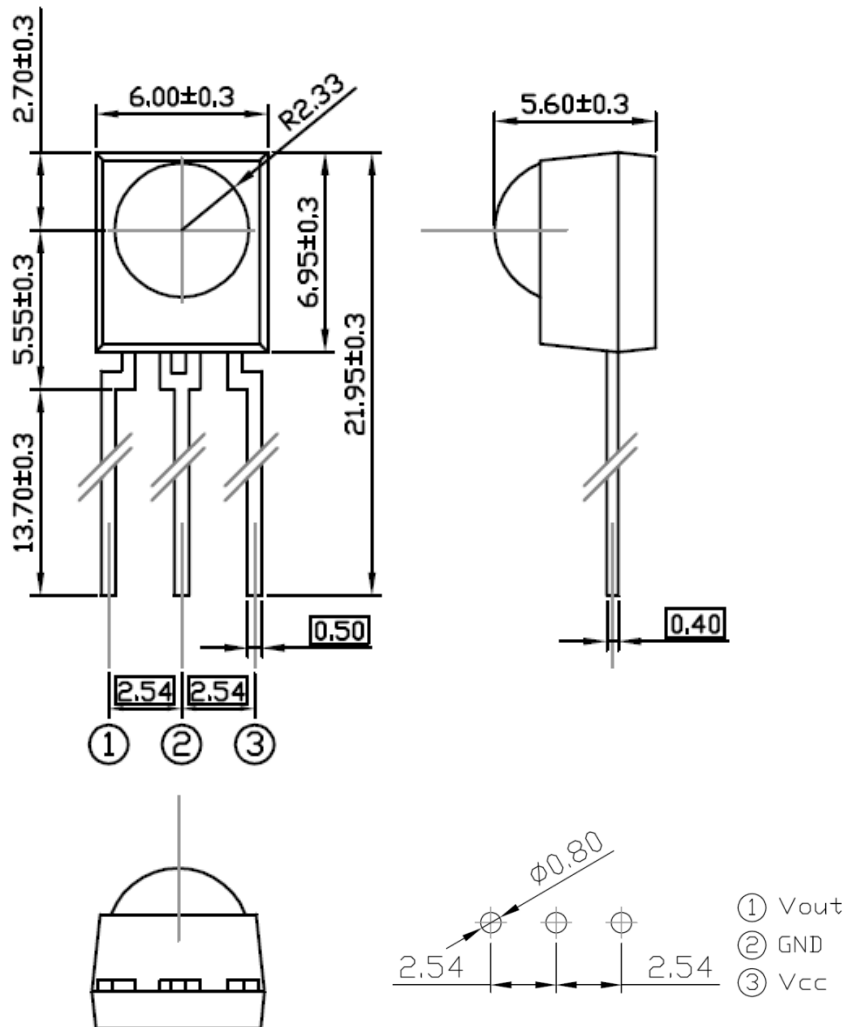
The RC Filter must be connected as close as possible to V_{CC} and GND pins.

Parts Table

Model No.	Carrier Frequency
IRM-3600W	30~56 kHz

Package Dimensions

(Dimensions in mm)



Notes:

Tolerance unless otherwise mentioned ± 0.3 mm

Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{cc}	6	V
Operating Temperature	T _{opr}	-20 ~ +80	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
Soldering Temperature ^{*1}	T _{sol}	260	°C

^{*1} 4mm from mold body for less than 10 seconds

Electro-Optical Characteristics (T_a=25°C, V_{cc}=3V)

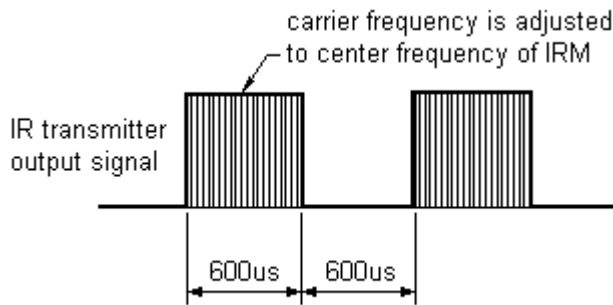
Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Current consumption	I _{cc}	-	1.2	-	mA	No input signal
Supply voltage	V _{CC}	2.5	-	5	V	
Peak wavelength	λ _p	-	940	-	nm	
Reception range(f=38KHz)	L ₀		14	-	m	See chapter ,Test method'
	L ₄₅		6	-		
Half angle(horizontal)	φ _h	---	±45	---	deg	
Half angle(vertical)	φ _v	---	±35	---	deg	
High level output voltage	V _{OH}	V _{cc} -0.4	-	-	V	No load
Low level output voltage	V _{OL}	-	0.2	0.5	V	I _{SINK} ≤ 2mA
Internal pull up resistor	R _{PU}	40	50	60	kΩ	

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 ($E_v \leq 10\text{Lux}$).
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 $V_o=400\text{mVp-p}$. Both, the test transmitter and the photo diode, have a peak wavelength of 940nm. The photo diode for calibration is PD438B ($\lambda_p=940\text{nm}$, $V_r=5\text{V}$).
4. The measurement system is shown in Fig.-3

Fig.-1 Transmitter Wave Form



D.U.T output Pulse



Fig.-2 standard transmitter calibration

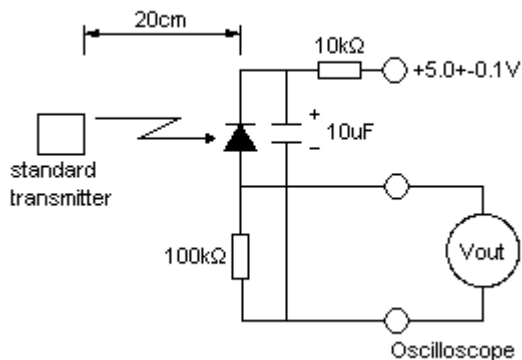
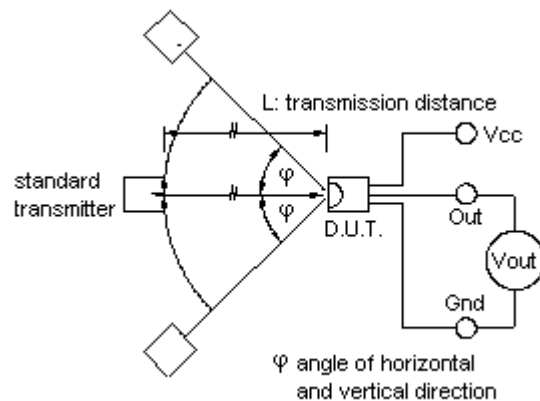


Fig.-3 Measuring System



Typical Electro-Optical Characteristic Curves

Fig.4 Relative Responsibility vs. Wavelength

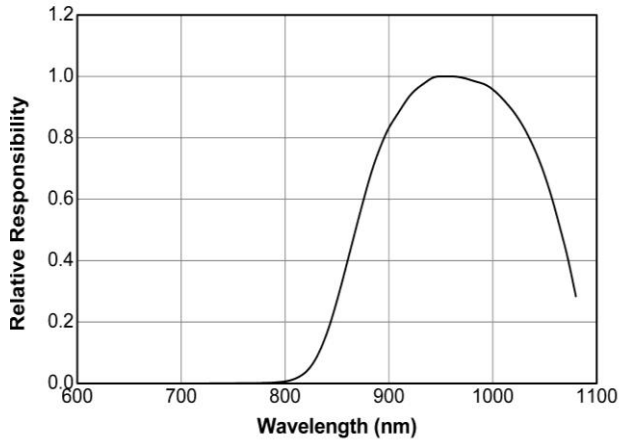


Fig.-5 Relative Sensitivity vs. Horizontal Angle

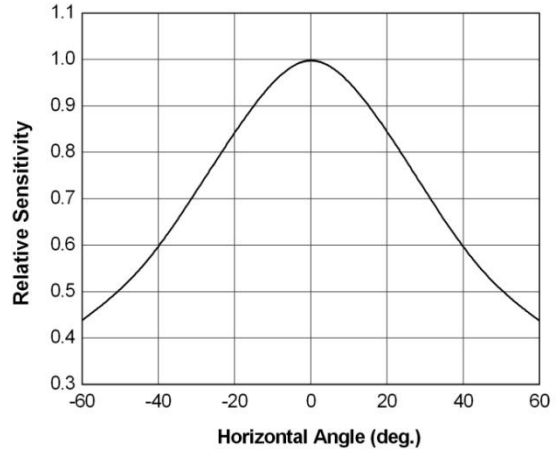


Fig.-6 Relative Sensitivity vs. Supply Voltage

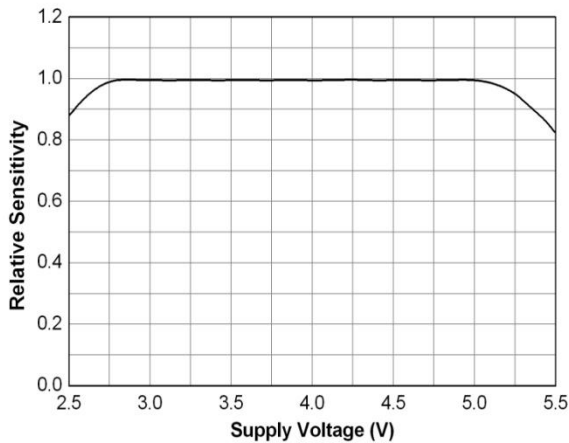
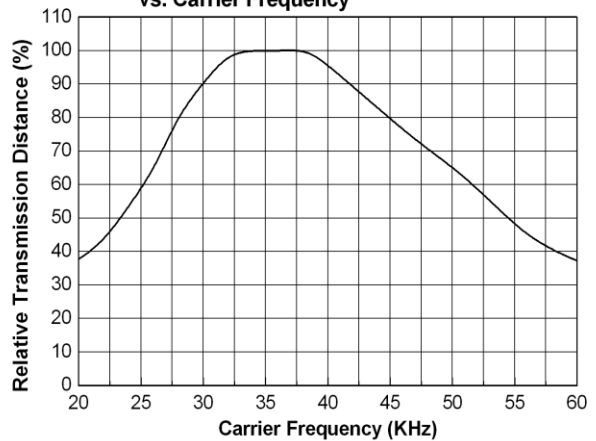


Fig.-7 Relative Transmission Distance vs. Carrier Frequency



Packing Quantity

1500 pcs / Box

10 Boxes / Carton

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