



ISO14001 認證通過  
TS16949 認證通過

## 樣品認定書 For Approval

謹致執事者：茲提供敝公司產品之有關詳細規格及圖面資料，敬請給予辦理測試認定手續。謝謝！

同時敬請返回一份有貴司測試認定後之本樣品認定書！謝謝！

We are please sending you herewith ou specification and drawings for your approval.TK'S!

Please return to us one copy "For Approval" with your appoved signatures.TK'S!

億光品名 Commodity : IRM-3638

型號 Model No :

發出日期 Issue Date : 2012-02-20

認定日期 Approval date:

客戶 Customer :

呈送者 Director : 代一弘

職稱 Title :

客戶料號 Customer :

認定意見：

認定簽章 Approval Signatures		

億光電子工業股份有限公司

EVERLIGHT ELECTRONICS CO.,LTD

No.25,Lane,76,Sec.3.Chung yang road,Tucheng, Taipei Taiwan.

中国一级代理商：

深圳市卅亿光电有限公司

CHIPLIGHT ELECTRONICS CO.,LTD

<http://www.chiplight.cn>

TEL:86 - 755 - 3359 0909 FAX: 86 - 755 - 3359 0908

深圳市寶安43區廣深路(原107国道)新安段245号六楼 郵編： 518101

銷售產品：紅外線发射管、接收管, 红外接收头、贴片接收头, 高速光耦, 光电开关、贴片光电开关, 发光二极管、贴片发光管, LED闪光灯、贴片数码管, 帶座发光管, 光/色感接收管及大功率等光電器件。



EVERLIGHT ELECTRONICS CO.,LTD.

## Technical Data Sheet

### Infrared Remote-control Receiver Module

**IRM-3638**

#### Features

- High protection ability against EMI .
- Circular lens to improve the receive characteristic.
- Line-up for various center carrier frequencies.
- Low voltage and low power consumption.
- High immunity against ambient light.
- Photodiode with integrated circuit.
- TTL and CMOS compatibility.
- Long reception distance.
- High sensitivity.



#### Descriptions

The device is a miniature type infrared remote control system receiver which has been developed and designed by utilizing the most updated IC technology. The PIN diode and preamplifier are assembled on lead frame, the epoxy package is designed as an IR filter. The demodulated output signal can directly be decoded by a microprocessor.

#### Applications

1. Optical switch
2. Light detecting portion of remote control
  - AV instruments such as Audio, TV, VCR, CD, MD, etc.
  - Home appliances such as Air-conditioner, Fan , etc.
  - The other equipments with wireless remote control.
  - CATV set top boxes
  - Multi-media Equipment

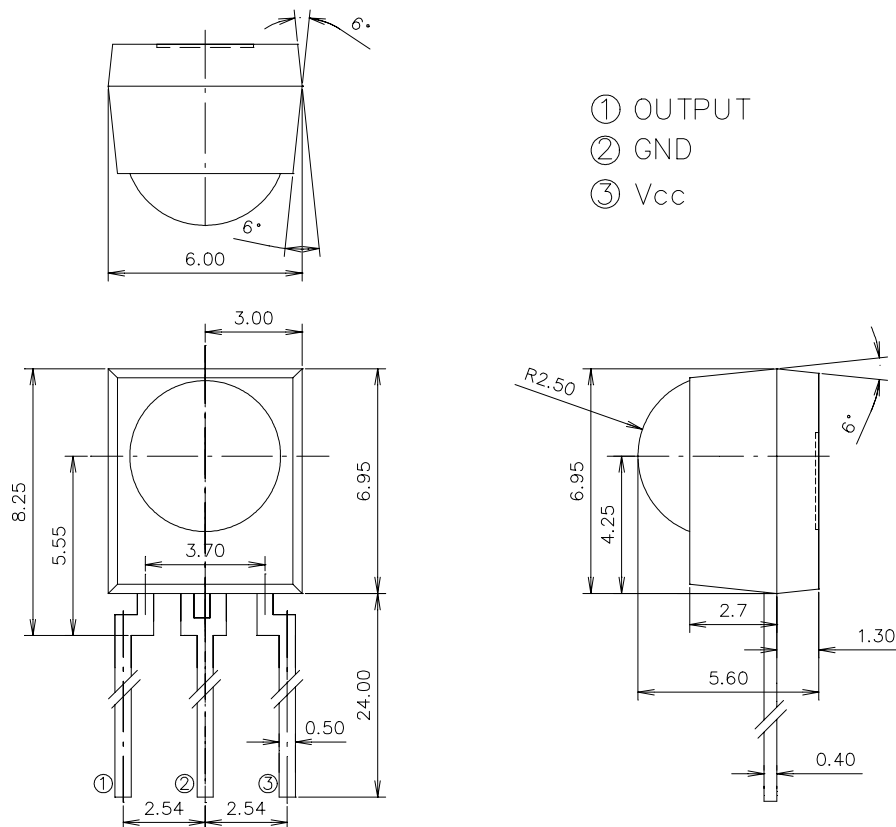
#### Device Selection Guide

PART	MATERIAL	COLOR
Chip	Silicon	---
Package	Epoxy	Black

SHENZHEN OFFICE:

TEL: 86-755-335 90909    FAX: 86-755-3359 0908    E-mail:evlight@163.com

## Package Dimensions



**Notes:** 1.All dimensions are in millimeters.  
2.Tolerances unless dimensions  $\pm 0.3\text{mm}$ .

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	Notice
Supply Voltage	Vcc	0~6	V	
Operating Temperature	Topr	-25 ~ +85	℃	
Storage Temperature	Tstg	-40 ~ +85	℃	
Soldering Temperature	Tsol	260	℃	4mm from mold body less than 10 seconds

---

**IRM-3638**


---

**Electro-Optical Characteristics (Ta=25°C , and Vcc=2.7V~3.3V)**

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Supply Voltage	V <sub>cc</sub>	2.5	---	5.5	V	DC voltage
Consumption Current	I <sub>cc</sub>	0.7	0.9	1.2	mA	No signal input
B.P.F Center Frequency	F <sub>o</sub>	---	38	---	KHz	
Peak Wavelength	$\lambda_p$	---	940	---	nm	
Reception Distance	L <sub>0</sub>	15	---	---	m	At the ray axis *1
	L <sub>45</sub>	8	---	---		
Half Angle(Horizontal)	$\Theta_h$	---	45	---	deg	
Half Angle(Vertical)	$\Theta_v$	---	45	---	deg	
High Level Pulse Width	T <sub>H</sub>	400	---	800	$\mu s$	At the ray axis *2
Low Level Pulse Width	T <sub>L</sub>	400	---	800	$\mu s$	

**Notes:**

\*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.

### Test Method :

The specified electro-optical characteristics is satisfied under the following Conditions at the controllable distance.

#### ①Measurement place

A place that is nothing of extreme light reflected in the room.

#### ②External light

Project the light of ordinary white fluorescent lamps which are not high Frequency lamps and must be less then 10 Lux at the module surface.  
( $E_e \leq 10 \text{Lux}$ )

#### ③Standard transmitter

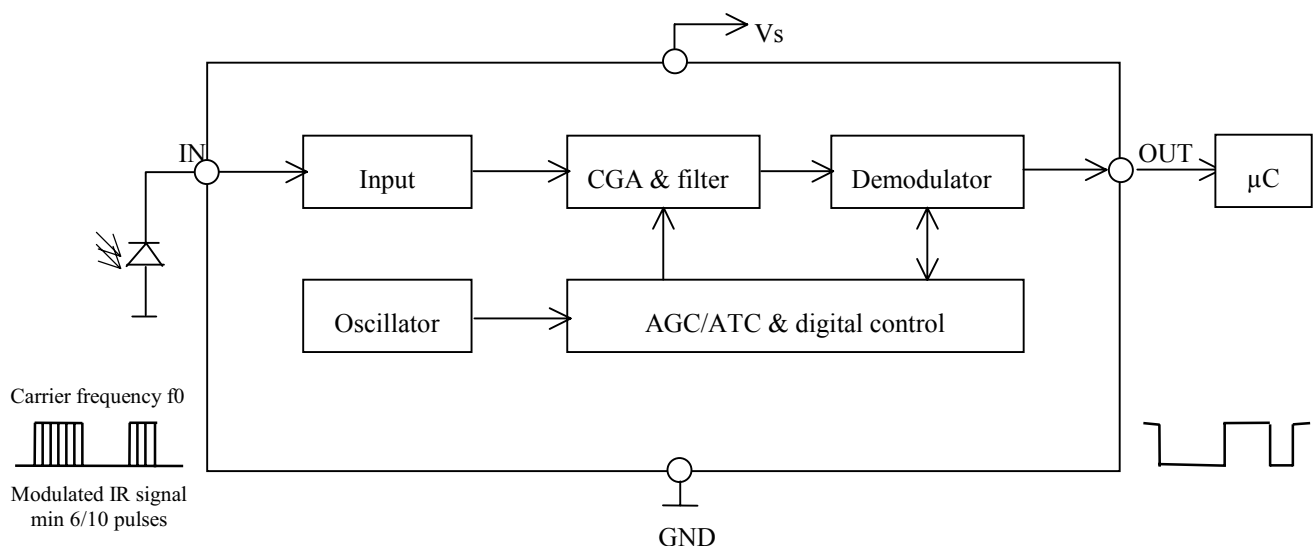
A transmitter whose output is so adjusted as to  **$V_o=400\text{mVp-p}$**  and the output Wave form shown in Fig.-1.According to the measurement method shown in Fig.-2 the standard transmitter is specified.

However , the infrared photodiode to be used for the transmitter should be  $\lambda_p=940\text{nm}, \Delta\lambda=50\text{nm}$ . Also, photodiode is used of PD438B( $V_r=5\text{V}$ ).  
(Standard light / Light source temperature  $2856^\circ\text{K}$ ).

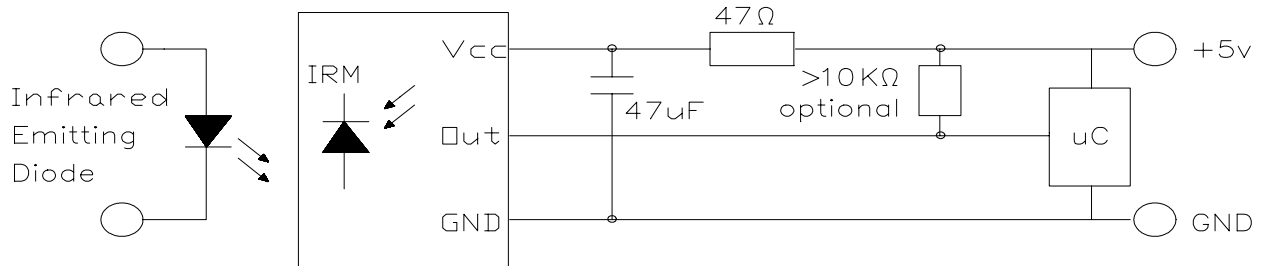
#### ④Measuring system

According to the measuring system shown in Fig.-3

### Block Diagram :

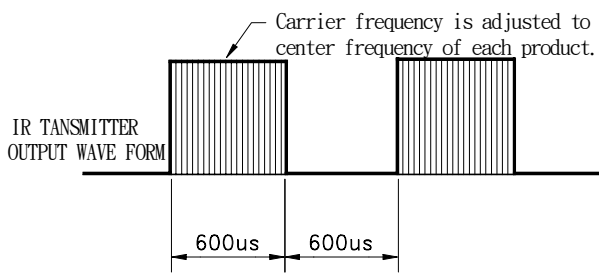


**Application Circuit :**



RC Filter should be connected closely between Vcc pin and GND pin.

Fig.-1 Transmitter Wave Form



Duty=0.5

D.U.T output Pulse

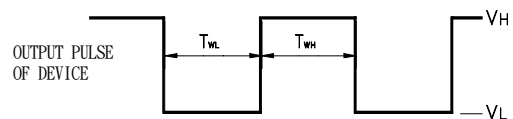


Fig.-2 Measuring Method

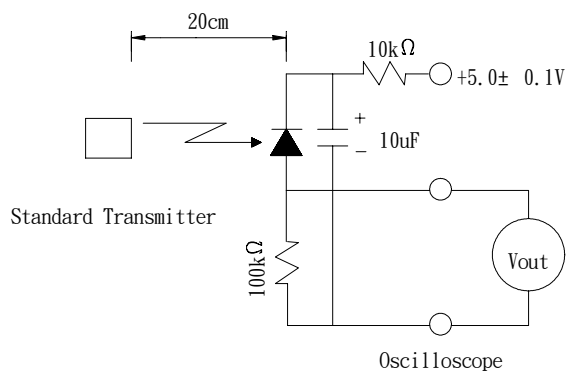
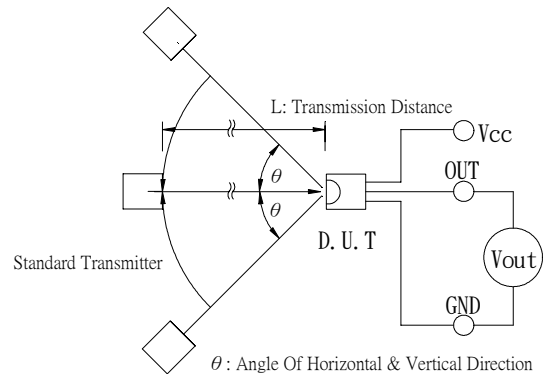


Fig.-3 Measuring System



## Typical Electro-Optical Characteristics Curves

Fig.-4 Relative Spectral Sensitivity vs. Wavelength

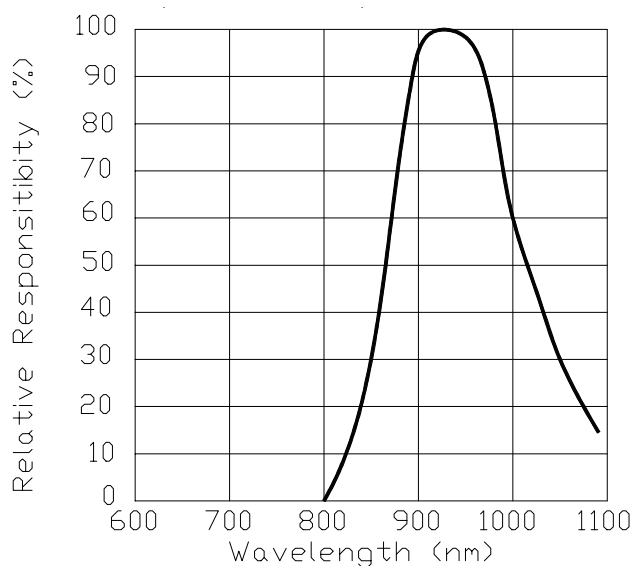


Fig.-5 Relative Transmission Distance vs. Direction

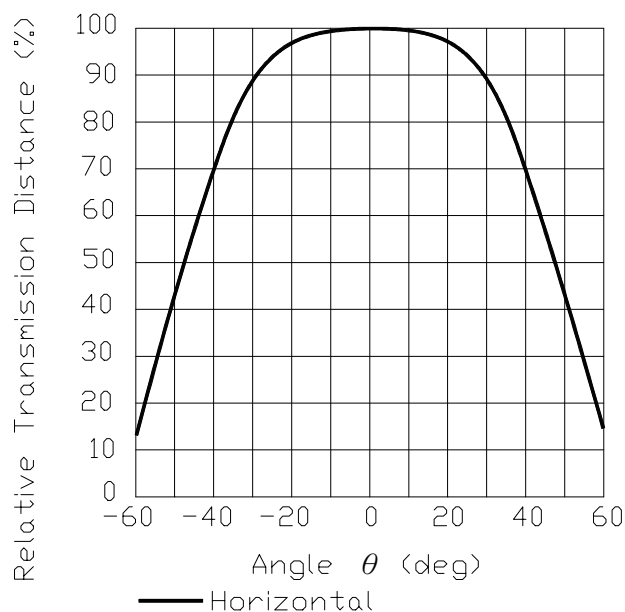


Fig.-6 Output Pulse Length vs. Arrival Distance

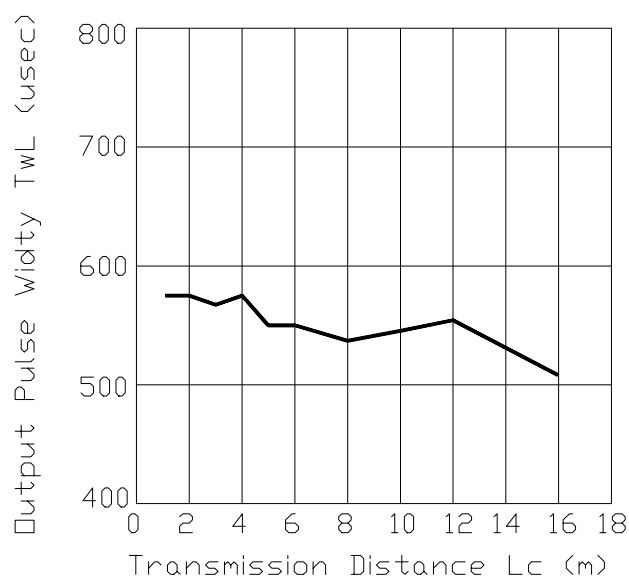
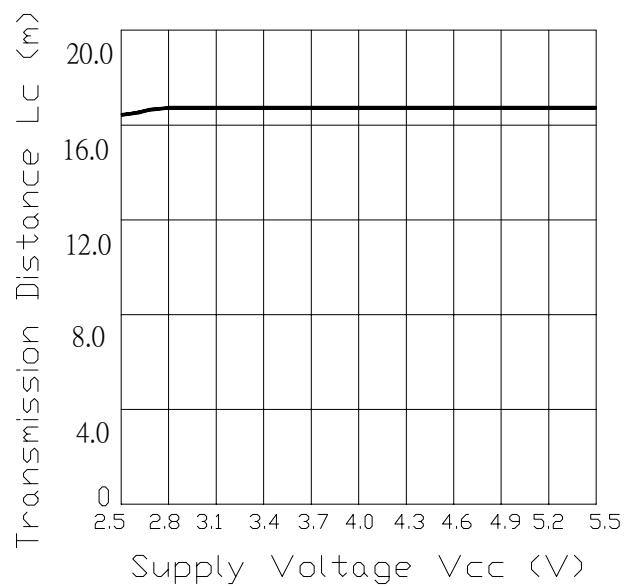


Fig.-7 Arrival Distance vs. Supply Voltage



## Typical Electro-Optical Characteristics Curves

Fig.-8 Relative Transmission Distance  
vs. Center Carrier Frequency

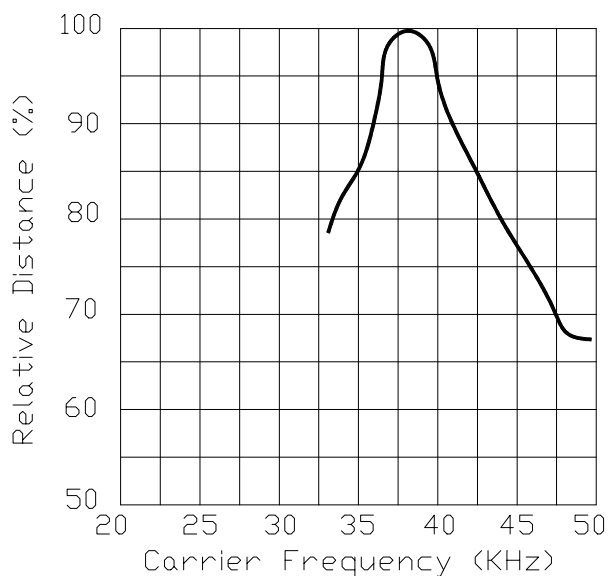
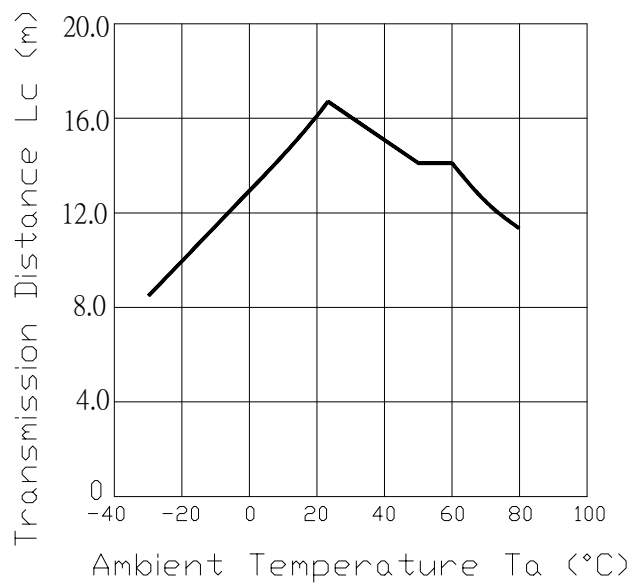


Fig.-9 Arrival Distance vs. Ambient Temperature





**Reliability Test Item And Condition**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%



LTPD : 10%

Test Items	Test Conditions	Failure Judgement Criteria	<u>Samples(n)</u> Defective(c)
Temperature cycle	1 cycle -25℃ $\longleftrightarrow$ +85℃ (30min)(5min)(30min) 300 cycle test	$L_0 \leq L \times 0.8$ $L_{45} \leq L \times 0.8$  L: Lower specification limit	n=22,c=0
High temperature test	Temp: +85℃ Vcc:6V 1000hrs		n=22,c=0
Low temperature storage	Temp: -40℃ 1000hrs		n=22,c=0
High temperature High humidity	Ta: 60℃,RH:90% Vcc:6V 1000hrs		n=22,c=0
Solder heat	Temp: 260± 5℃ 10sec 4mm From the bottom of the package.		n=22,c=0

**Packing Quantity Specification**

1. 1500 PCS/1Box
2. 10 Boxes/1Carton

**Label Form Specification**

<div>EVERLIGHT</div>	
CPN:	
P/N:	
	
QTY:	CAT:
	HUE:
LOT NO: EL	REF:

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

**Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
3. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.