

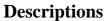
Technical Data Sheet

Infrared Remote-Control Receiver Module

IRM-2638S17-P

Features:

- Photo detector and preamplifier in one package
- Internal filter for PCM frequency
- Improved shielding against electrical field disturbance
- TTL and CMOS compatibility
- Output active low
- Low power consumption
- · Improved immunity against ambient light
- Suitable burst length ≥ 10 cycles/burst
- Pb free
- The product itself will remain within RoHS compliant version.



 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.

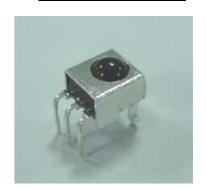


- 1. Optical switch
- 2. Light detecting portion of remote control
- AV instruments such as Audio, TV, VCR, CD, MD, etc.
- Home appliances such as Air-conditioner, Fan, etc.
- The other equipments with wireless remote control.
- CATV set top boxes
- Multi-media Equipment

PART	MATERIAL	COLOR
Chip	Silicon	Black
Shell	SK7	Silver-white

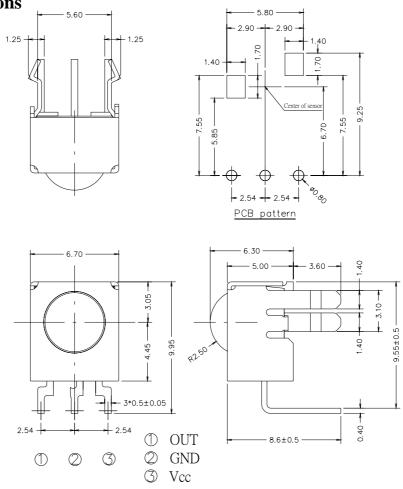
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Package Dimensions



Notes: 1.All dimensions are in millimeters.

2. Tolerances unless dimensions ±0.3mm.

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	Notice
Supply Voltage	Vcc	0~6	V	
Operating Temperature	Topr	-25 ~ +85	$^{\circ}\mathbb{C}$	
Storage Temperature	Tstg	-25 ~ +85	$^{\circ}\!\mathbb{C}$	
Soldering Temperature	Tsol	260	$^{\circ}\!\mathbb{C}$	4mm from mold body less than 10 seconds

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Recommended Operating Condition

Supply Voltage Rating: Vcc 4.5V to 5.5V

Electro-Optical Characteristics (Ta=25°C, and Vcc=5.0V)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Consumption Current	Icc		1.2		mA	No signal input
B.P.F Center Frequency	Fo		38		KHz	
Peak Wavelength	λp		940		nm	
Reception Distance	L_0	8			m	
	L_{45}	5				
Half Angle(Horizontal)	Θ_{h}		45		deg	At the ray axis *1
Half Angle(Vertical)	$\Theta_{\rm v}$		45		deg	
High Level Pulse Width	T_{H}	400		800	μ s	At the ray axis
Low Level Pulse Width	T_{L}	400		800	μ s	*2
High Level Output Voltage	V _H	4.5			V	_
Low Level Output Voltage	V_{L}		0.2	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°.

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

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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. (Ee \leq 10Lux)

3Standard transmitter

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

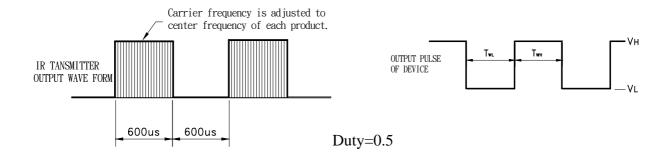
However , the infrared photodiode to be used for the transmitter should be $\lambda p=940nm, \Delta\lambda=50nm$. Also, photodiode is used of PD438B(Vr=5V).

Measuring system

According to the measuring system shown in Fig.-3

Fig.-1 Transmitter Wave Form

D.U.T output Pulse



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Fig.-2 Measuring Method

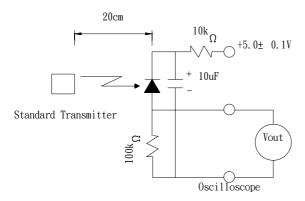


Fig.-3 Measuring System

L: Transmission Distance

Vec

OUT

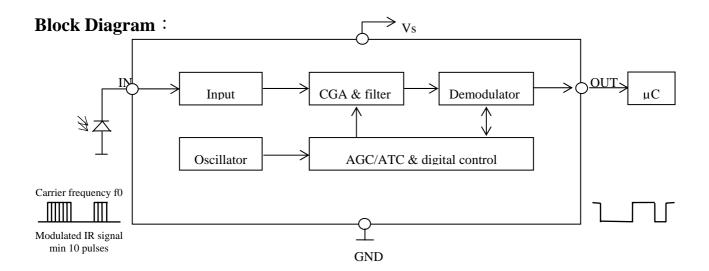
OUT

OUT

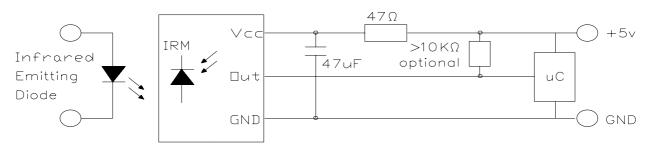
OUT

GND

 θ : Angle Of Horizontal & Vertical Direction



Application Circuit:



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

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Direction

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Typical Electro-Optical Characteristics Curves

Fig.-4 Relative Spectral Sensitivity vs.

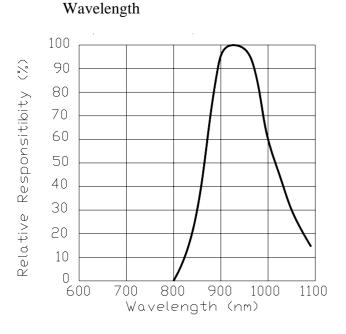


Fig.-5 Relative Transmission Distance vs.

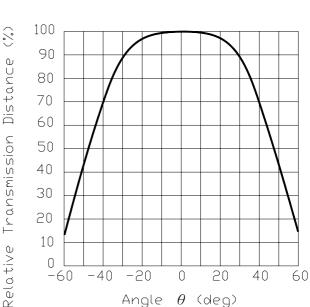
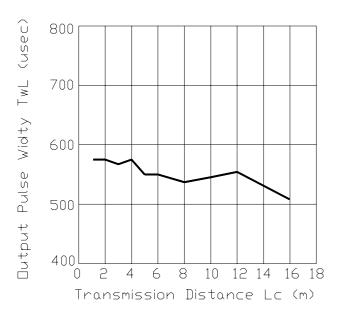
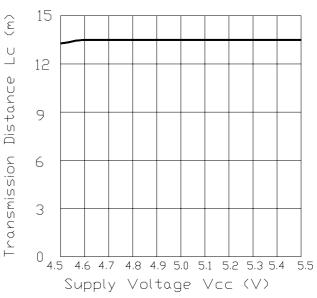


Fig.-6 Output Pulse Length vs. Arrival Distance Fig.-7 Arrival Distance vs. Supply Voltage





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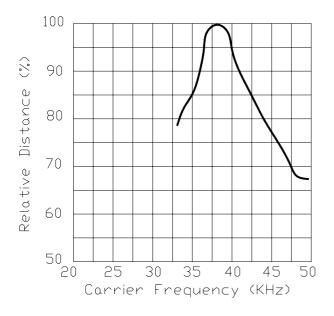


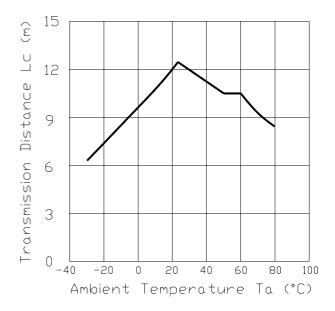
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Typical Electro-Optical Characteristics Curves

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

Fig.-9 Arrival Distance vs. Ambient Temperature





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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	Samples(n) Defective(c)
Temperature cycle	1 cycle $-25^{\circ}\mathbb{C} \longleftrightarrow +85^{\circ}\mathbb{C}$ (30min)(5min)(30min) 300 cycle test		n=22,c=0
High temperature test	Temp: +85°C Vcc:5V 1000hrs	L0≦ Lx0.8 L45≦ Lx0.8	n=22,c=0
Low temperature storage	Temp: -25°C 1000hrs	L: Lower	n=22,c=0
High temperature High humidity	Ta: 85°C,RH:85% 1000hrs	specification limit	n=22,c=0
Solder heat	Temp: 260±5° ⊂ 10sec 4mm From the bottom of the package.		n=22,c=0

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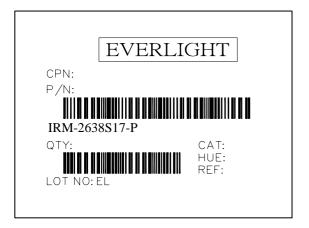


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Packing Quantity Specification

- 1. 1000PCS/1Box
- 2. 10Boxes/1Carton

Label Form Specification



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.

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