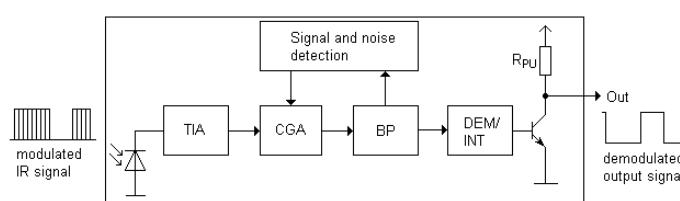


Infrared Receiver Module EAIRMG2



Block Diagram



Features

- High protection ability against EMI
- Circular lens for improved reception characteristics
- Min burst length: 400us
- Min gap length: 450us
- Low operating voltage ($V_{cc} = 2.5V$)
- High immunity against ambient light
- Long reception range
- High sensitivity
- Pb free and RoHS compliant
- Compliance with EU REACH
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

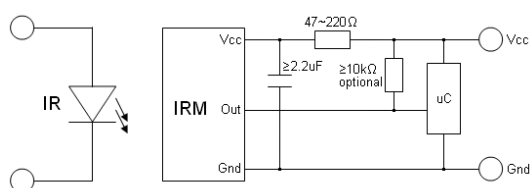
Descriptions

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

Applications

- AV equipment such as TV, VCR, DVD, CD, MD, etc.
- Toy applications
- CATV set top boxes
- Multi-media Equipment

Application Circuit



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

Parts Table

Model No.	Carrier Frequency
EAIRMGA2	40 kHz

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit	Notice
Supply Voltage	Vcc	6	V	
Operating Temperature	Topr	-20 ~ +80	°C	
Storage Temperature	Tstg	-40 ~ +85	°C	

Electro-Optical Characteristics (Ta=25°C , Vcc = 3V)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Supply Current	I _{cc}	---	1.0	1.3	mA	No signal input
Supply Voltage	V _s	2.5	-	5.5	V	
Peak Wavelength	λ _p	---	940	---	nm	---
Reception Distance	L ₀	8	---	---	m	See chapter ,Test method'
	L ₄₅	5	---	---		
Half Angle(Horizontal)	Θ _h	---	45	---	deg	
Half Angle(Vertical)	Θ _v	---	45	---	deg	
High Level Pulse Width	T _H	450	---	750	μs	Test signal according to figure 1
Low Level Pulse Width	T _L	450	---	750	μs	
High Level Output Voltage	V _H	V _{cc} -0.4	---	---	V	
Low Level Output Voltage	V _L	---	0.2	0.5	V	I _{SINK} ≤ 2mA
Internal pull up resistor	R _{PU}	40	50	60	kΩ	

Test Method

The specified electro-optical characteristic is satisfied under the following Conditions:

1. Measurement environment

A place without extreme light reflected

2. External light

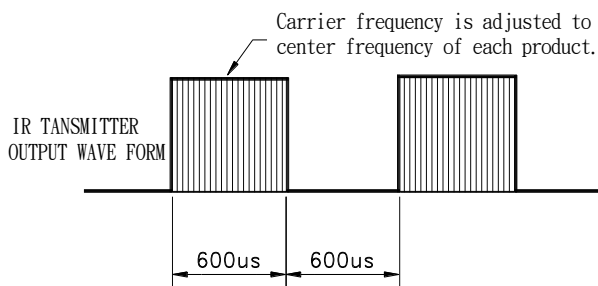
Ordinary white fluorescent lamps (Light source temperature 2856°K, $E_e \leq 10\text{Lux}$) without high frequency modulation

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. Measuring system According to the measuring system shown in Fig.-3

Fig.-1 Transmitter Wave Form



D.U.T output Pulse

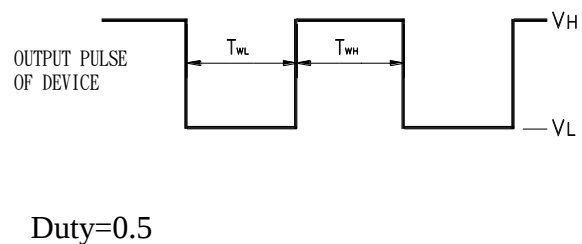


Fig.-2 Measuring Method

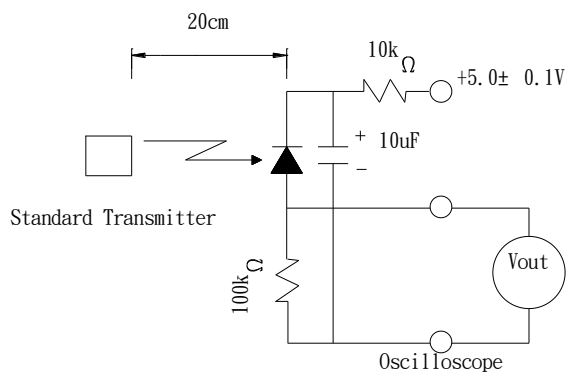
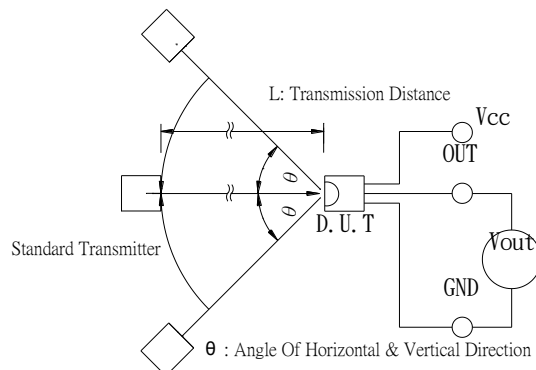


Fig.-3 Measuring System



Typical Electro-Optical Characteristics Curves

Fig.4 Relative Responsibility vs. Wavelength

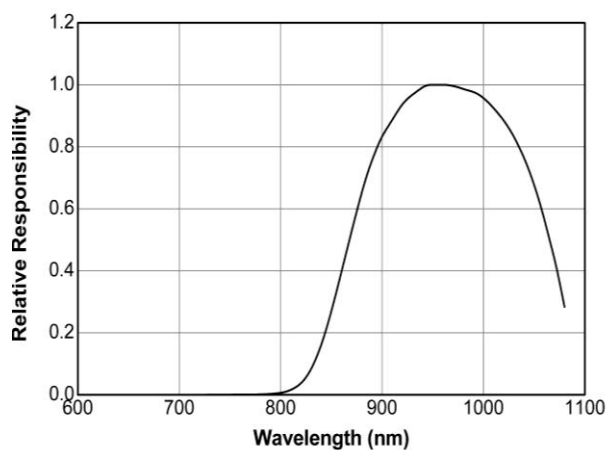


Fig.-5 Relative Sensitivity vs. Horizontal Angle

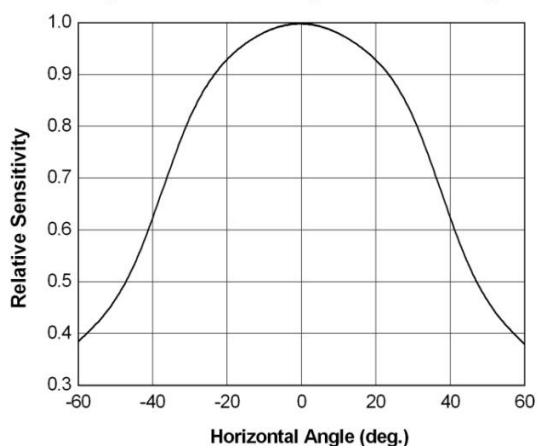


Fig.-7 Output Pulse Width vs. Transmission Distance

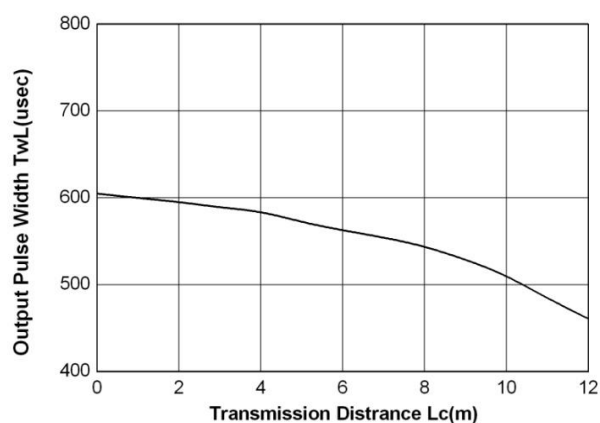


Fig.-7 Relative Transmission Distance vs. Supply Voltage

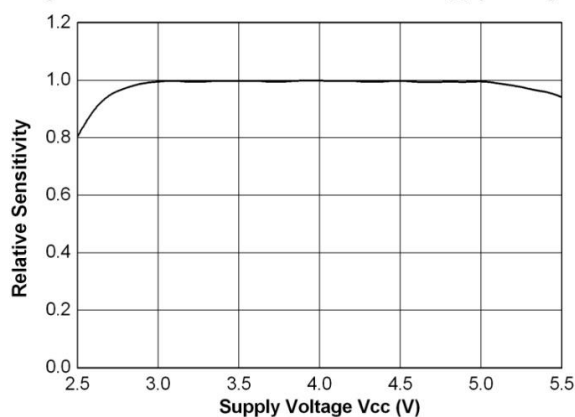
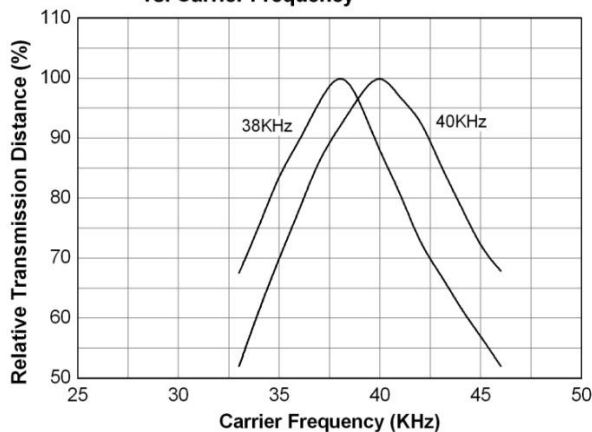
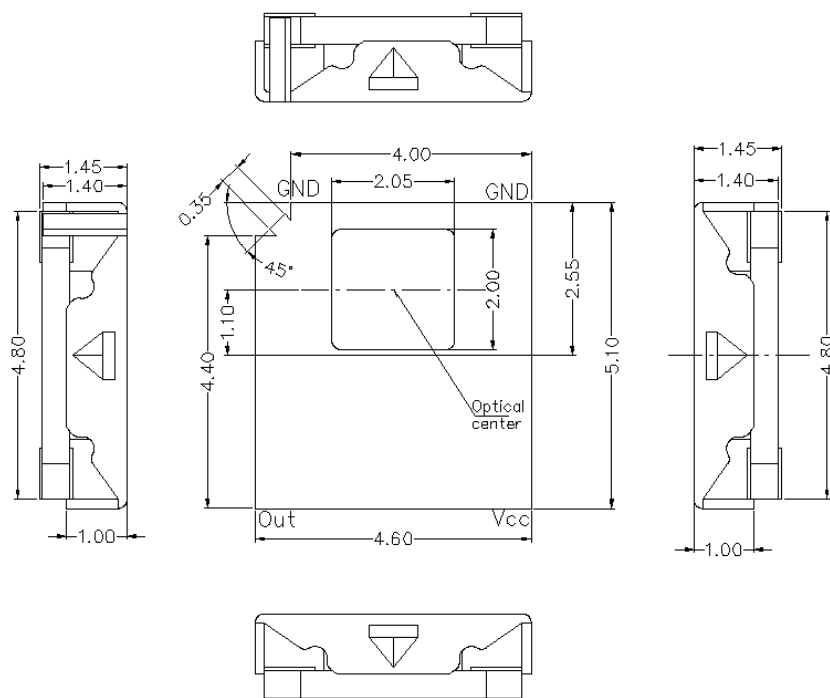


Fig.-8 Relative Transmission Distance vs. Carrier Frequency



Package Dimenstions

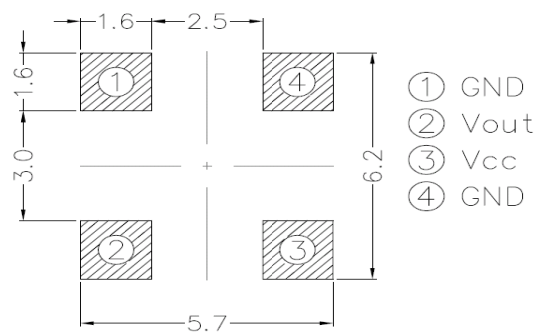
(Dimensions in mm)



Notes : Tolerances unless dimensions $\pm 0.3\text{mm}$.

Shield need contact GND pin on PCB.

Recommended pad layout for surface mount leadform



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

Technical drawing of a progressive die. The main view shows a series of stations with dimensions: 2.00±0.05, 4.00±0.05, 8.00±0.1, and a hole diameter of $\phi 1.50^{+0.1}_{-0}$. The total length is 12.00±0.2. A cross-section view shows a cover trap with dimensions: 1.65±0.1, 4.93±0.1, 7°, and 0.25±0.05. The progressive direction is indicated by an arrow.

5 Reels / Carton

Label format

	EVERLIGHT	5
CPN : P/N : XXXXXXXX		RoHS
		
XXXXXXXXXX		
QTY : XXX	CAT : XX	
	HUE : XX	
LOT NO : XXXXXXXX	REF : XX	
		
Reference : XXXXXXXX		
		

	Caution This bag contains MOISTURE-SENSITIVE DEVICES	LEVEL  If blank, see adjacent bar code label
1. Calculated shelf life in sealed bag: 12 months at <40°C and <90% relative humidity (RH) 2. Peak package body temperature: _____ °C If blank, see adjacent bar code label 3. After bag is opened, devices that will be subjected to reflow solder or other high temperature process must a) Mounted within: _____ hours of factory conditions If blank, see adjacent bar code label <30°C/60% RH, OR b) Stored at <10% RH 4. Devices require bake, before mounting, if: a) Humidity Indicator Card is >10% when read at 23 ± 5°C b) 3a or 3b not met 5. If baking is required, devices may be baked for 48 hours at 125 ± 5°C Note: If device containers cannot be subjected to high temperature or shorter bake times are desired, reference IPC/JEDEC J-STD-033 for bake procedure Bag Seal Date: _____ If blank, see adjacent bar code label Note: Level and body temperature defined by IPC/JEDEC J-STD-020		

Moisture Classification-storage and used condition label

Recommended method of storage

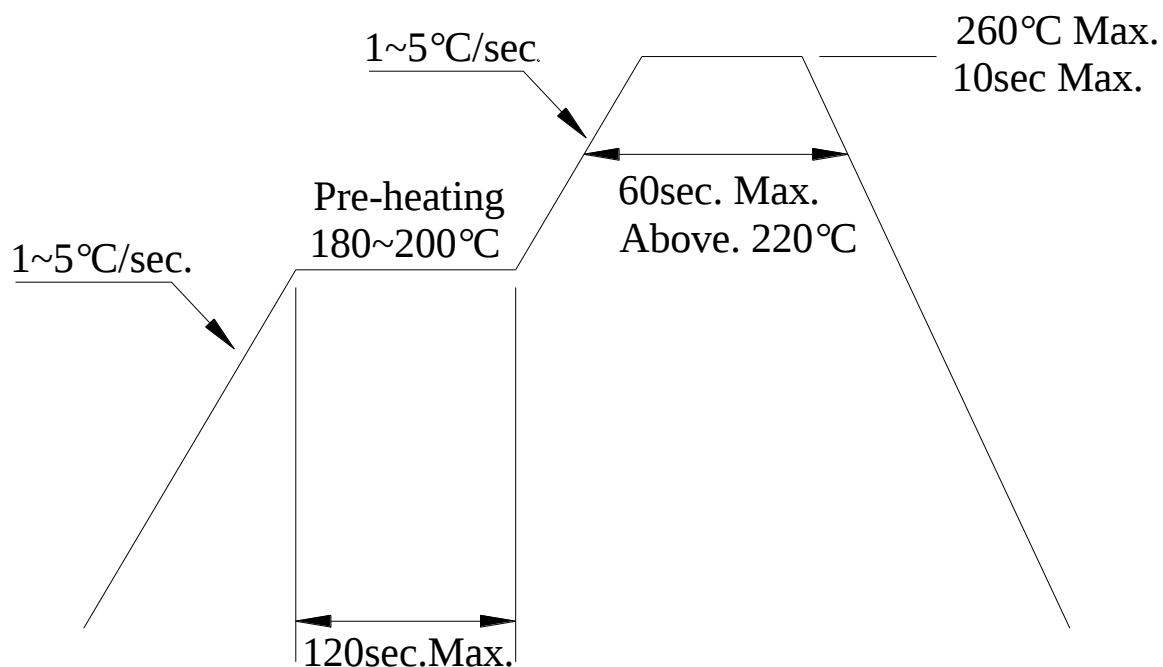
The following are general recommendations for moisture sensitive level (MSL) 4 storage and use:

1. Shelf life in sealed bag from the bag seal date: 12 months at < 40 °C and < 90% relative humidity (RH)
2. After bag is opened, devices that will be subjected to reflow solder or other high temperature process must mounted within 72 hours of factory conditions < 30 °C/60%RH.
3. If the moisture absorbent material (silica gel) has faded away or the IRM has exceeded the storage time. Baking treatment is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the conditions: 60±5°C for 96 hours.

ESD Precaution

Proper storage and handing procedures should be followed to prevent ESD damage to the devices especially when they are removed from the Anti-static bag. Electro-Static Sensitive Devices warning labels are on the packing.

Solder Reflow Temperature Profile



Note:

1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the IRM device during heating.
3. After soldering, do not warp the circuit board.

DISCLAIMER

1. Above specification may be changed without notice. Everlight Americas will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. Everlight Americas 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 Americas. Reproduction in any form is prohibited without the specific consent of Everlight Americas.



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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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