



Description

RMVAU38JG is miniaturized infrared receivers for remote control and other applications requiring improved ambient light rejection.

The separate PIN diode and preamplifier IC are assembled on a single lead frame. The epoxy package contains a special IR filter.

This module has excellent performance even in disturbed ambient light applications and provides protection against uncontrolled output pulses.

Features

- Photo detector and preamplifier in one package.
- Internal filter for PCM frequency.
- Inner shield, good anti-interference ability.
- High immunity against ambient light.
- Improved shielding against electric field disturbance.
- 3.0V or 5.0V supply voltage; low power consumption.
- TTL and CMOS compatibility.
- Suitable transmission code: NEC code, RC5 code.

Applications:

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

Electrical And Optical Characteristics(Ta=25C°)

Parameter	Symbol	Ratings			Unit	Condition
		Min.	Typ.	Max.		
Supply Voltage	V _S	2.7	--	5.5	V	
Supply Current	I _{CC}	--	0.2	0.35	mA	No signal input
Reception Distance	L ₀	20	—	—	m	At the ray axis*1
	L ₄₅	10	—	—		
B.P.F Center Frequency	f ₀	—	38	—	KHz	
Peak Wavelength	λ _p	—	940	—	nm	
Half Angle	θ	—	±45	—	deg	At the ray axis *1
High Level Pulse Width	T _H	400	—	800	μS	At the ray axis *2
Low Level Pulse Width	T _L	400	—	800	μS	
High Level Output Voltage	V _H	V _{CC} -0.3	—	—	V	
Low Level Output Voltage	V _L	—	—	0.4	V	

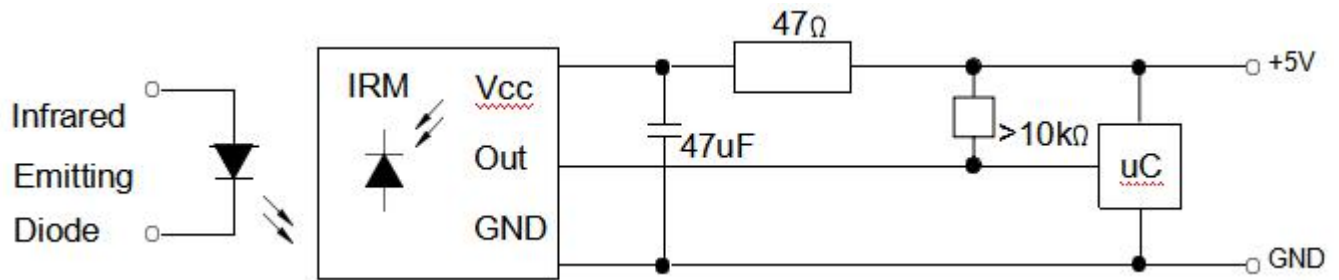
*1: The ray receiving surface at a vertex and relation to the ray axis in the range of θ=0° and θ=45°

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

• Absolute Maximum Ratings($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Ratings	Unit	Notice
Supply Voltage	V_{cc}	0 - 7.0	V	—
Operating Temperature	T_{opr}	-20~+85	$^{\circ}\text{C}$	—
Storage Temperature	T_{stg}	-40~+85	$^{\circ}\text{C}$	—
Soldering Temperature	T_{sol}	260	$^{\circ}\text{C}$	4mm from mold body less than 5 sec

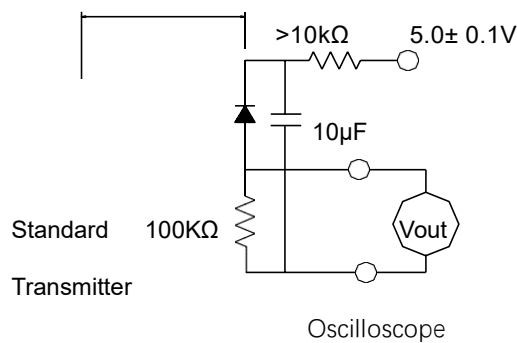
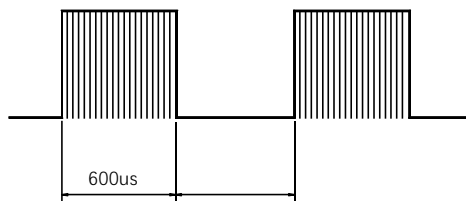
• BLOCK DIAGRAM



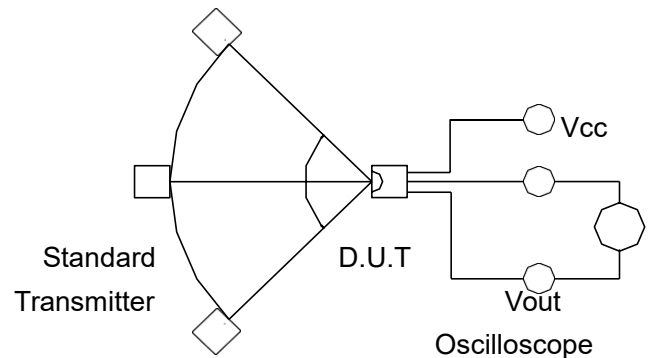
• Test Method

A. Standard Transmitter

Transmitter Output

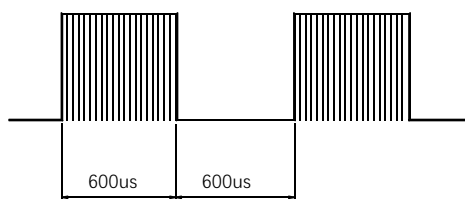


B. Detection Length Test

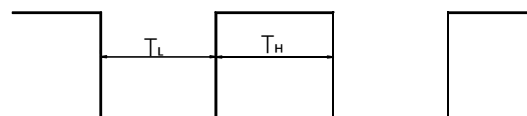


C. Pulse Width Test

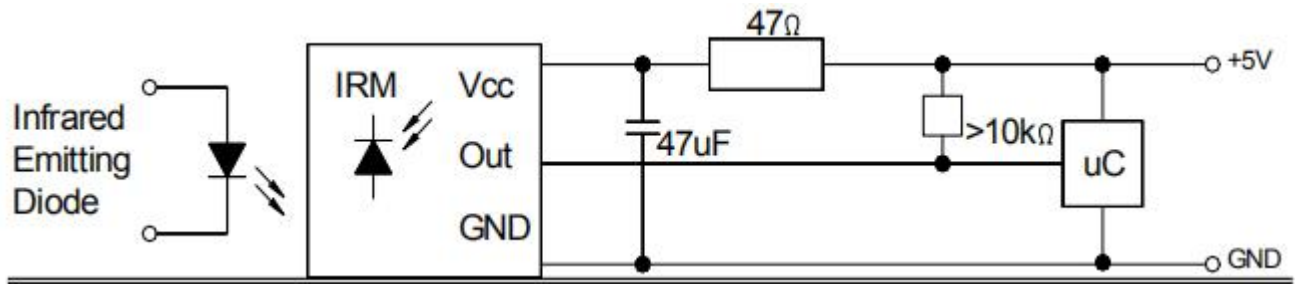
Transmitter Output



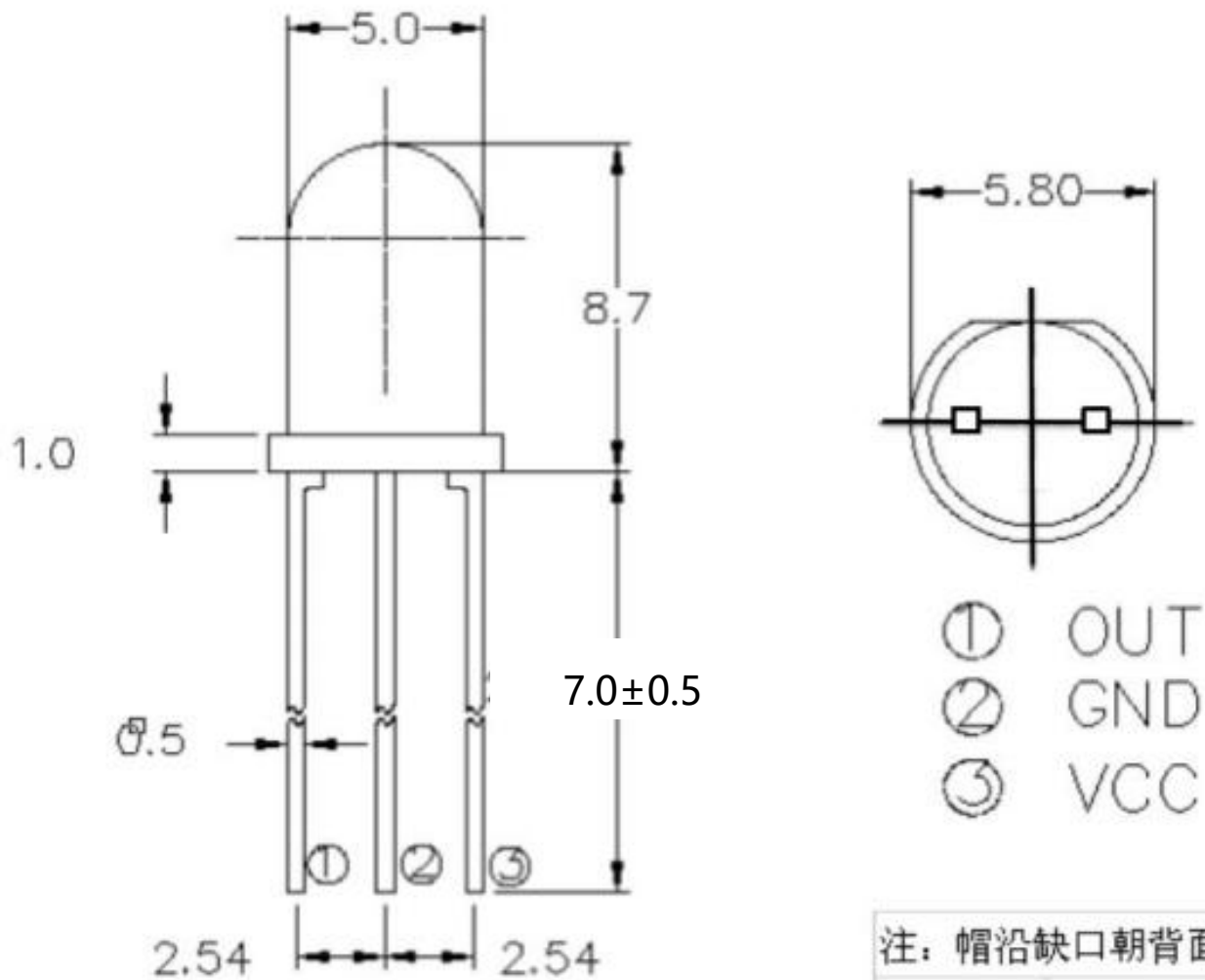
D.U.T Output Pulse



● Application Circuit



● Package Dimensions:



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.30\text{mm}$ (0.012") unless otherwise specified.
3. Specifications are subject to change without notice.

● Electrical And Optical Curves(Ta=25°C)

Fig.1 Relative Spectral Sensitivity vs.Wavelength

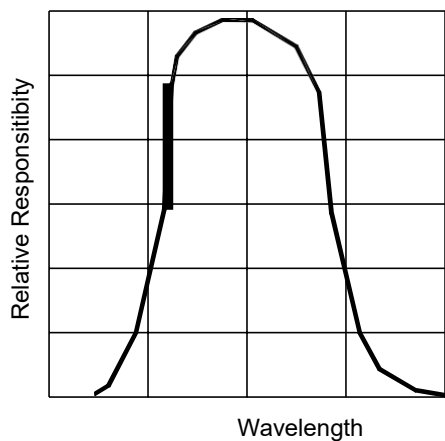


Fig.2 Relative Transmission Distance Vs. Direction

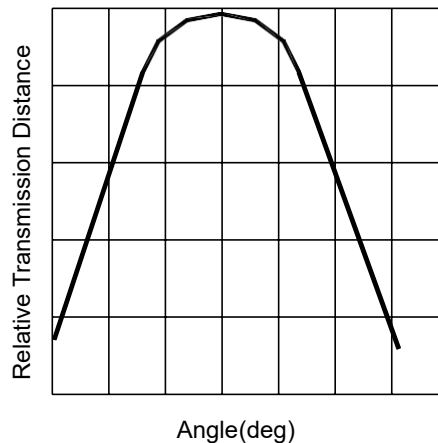


Fig.3 Frequency Dependence of Responsivity

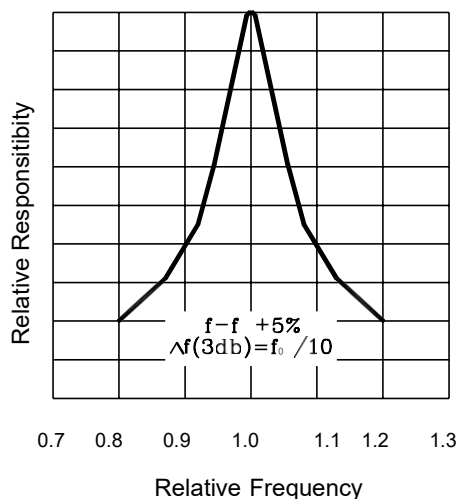


Fig.4 Supply Current vs. Ambient Temperature

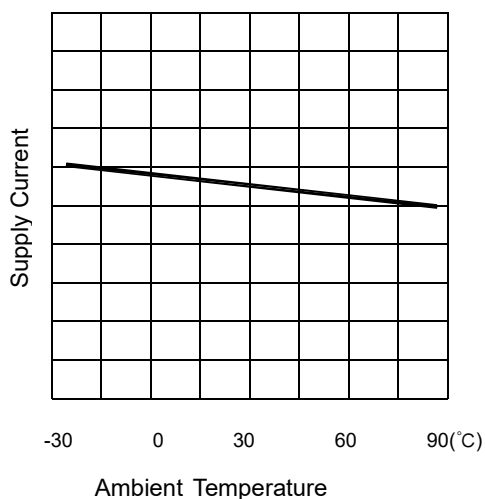
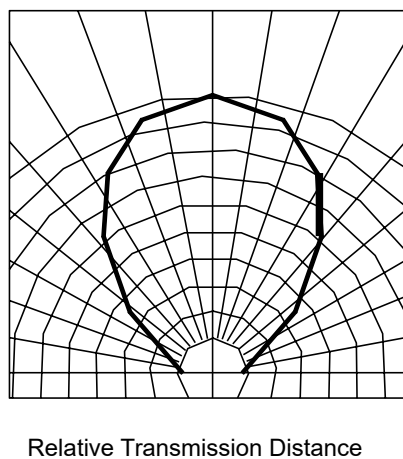


Fig.5 Relative Transmission Distance vs.Direction

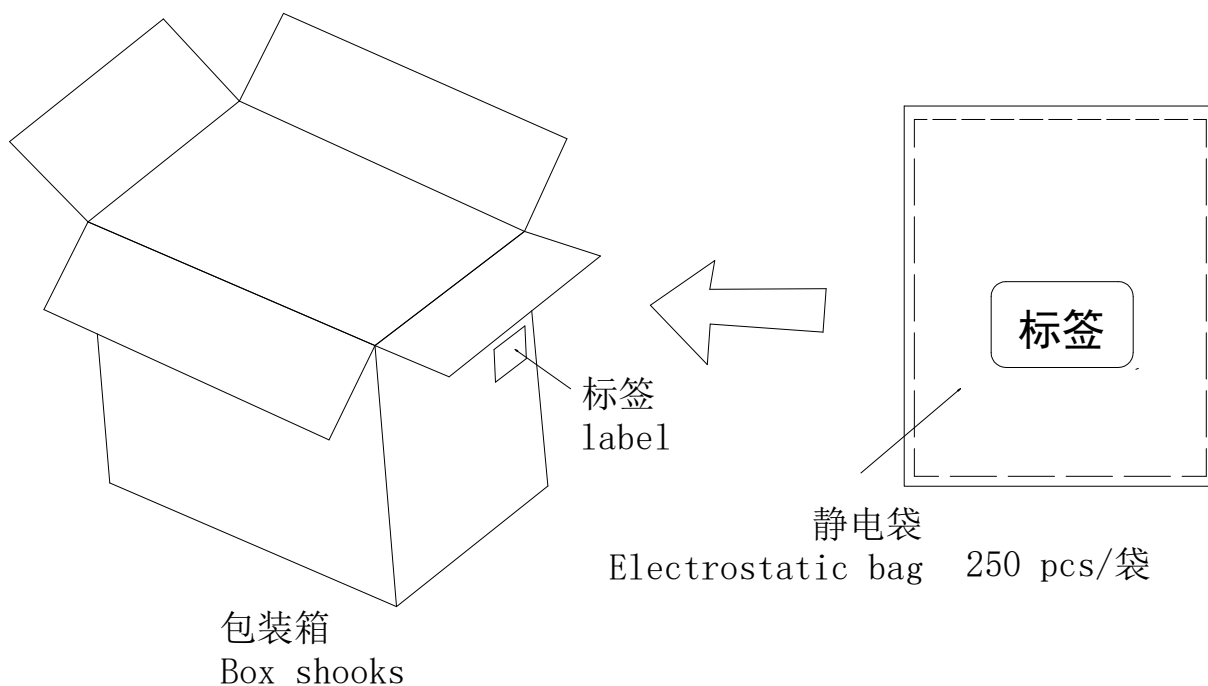


Acceptable code list

Data Format	Code Acceptable
NEC	O
RC5_Philips	O
RC6_Philips	O
RCA_Thomson	X
Zenith	O
Toshiba	X
Sharp	O
Sony 12 Bit	O
Sony 15 Bit	X
Sony 20 Bit	X
Matsushita	O
Mitsubishi	X
Zenith	O
JVC	X
Continuous code	X
High Data Rate code (<2.5Kbps)	X
XMP/RCMM	X

包装规格 Packing Specification

■ 静电袋包装



焊接 Soldering

焊接过程中的不慎操作将会引起产品的损坏，请务必注意。焊接过程中应避免对产品支架或封装部分施加压力。焊接时，请保证焊接位置与封装树脂底部有一定的距离，该距离因不同的焊接方法而有所不同，请参照以下推荐焊接条件。

Damages may be caused during soldering, please be careful. Please note that don't put stress on product bracket or package part when soldering. And make sure keep some distance from soldering joint to the bottom of epoxy package when soldering. The distance is determined by different soldering techniques, it's recommended to take following soldering conditions as reference.

推荐焊接条件 Recommended Soldering Conditions

焊接模式 Mode		固定形式 Fixed form
手工焊接 Manually Soldering	烙铁温度 Soldering Iron Temperature	最高温度 300°C(功率最大 30 瓦) Max 300°C (power:30w Max)
	焊接时间 Soldering Time	时间不超过 3 秒 3 sec Max.
	焊接位置 Soldering Position	大于 3mm (从焊点到胶体) 3mm Min.(Form soldering joint to colloid)
波峰焊接 Wave Soldering	预热 Preheat	最高温度 100°C 不超过 60 秒 100°C Max.60 sec.Max.
	温度 Temperature	最高 260°C 260°C Max.
	焊接时间 Soldering Time	不超过 5 秒 5 sec Max.
锡炉焊接 Solder pot Soldering	预热 Preheat	最高温度 100°C 不超过 60 秒 100°C Max.60 sec.Max.
	浸焊温度 Preheat Temperature	最高 260°C 260°C Max.
	浸焊时间 Soldering Time	不超过 5 秒 5 sec Max.
	焊接位置 Soldering Position	大于 2mm (从焊点到胶体) 2mm Min.(Form soldering joint to colloid)

- 本产品不适合做回流焊接。It's unsuitable for reflow soldering.
- 手工焊接只可焊接一次。Manually soldering should be done once only
- 器件外部温度在 40°C 以下时，才可以对其进行处理。避免高温时操作对 LED 造成损伤。Please solder the LED under 40 degree to avoid high temperature damage the device
- 在焊接温度回到正常以前，必须避免使 LED 受到任何震动或外力 After soldering the LED ,please keep it out of any shake or outer force before it come to normal temperature
- 在焊接后推荐使用酒精进行清洗，在温度不高于 30°C 的条件下持续 1 分钟，不高于 50°C 的条件下持续 30 秒。使用其他类似溶剂清洗前，请先确认使用的溶剂不会对 LED 的封装和环氧树脂部分造成损伤。It is recommended that to use alcohol clean LED after soldering. Cleaning should be done under 30°C for 1 minute or 50°C for 30 seconds. When using other solvents, please confirm whether the solvents would dissolve the package or resin beforehand .

注意：此一般指导原则并不适用于所有 PCB 设计和焊接设备的配置。具体工艺受到诸多因素的影响，请根据特定的 PCB 设计和焊接设备来确定焊接方案。

Note : This general guideline may not suitable for all PCB designs or all soldering equipment configurations .The technique in practice is influenced by many factors. Please confirm soldering method by the PCB designs and configurations.