

客户 (Customer) : \_\_\_\_\_

承认书

Approval Sheet

谨致执事者：兹提供敝公司之有关详细规格及图面数据, 敬请给予办理试认定手续.

同时敬请送返一份附有贵公司签认之测试认定后之样品承认书.

We are pleased in sending you herewith on specification and drawings for your approval.

Please return to us one copy "Approval sheet" with your approved signature.

型号 (Model No.) : A-IRM38M12DB

发文日期 (Issue Date) : 2018/12/18 承认日期 (Approved Date) : \_\_\_\_\_

Checking signature of Amicc

Designer	Checker	Approver
Money		

Approval signature of customer

Designer	Checker	Approver

江苏欧密格光电科技股份有限公司

Jiangsu Amicc Opto-Electronics Technology Co.,Ltd

地址: 江苏省常州市湖塘鸣凰沟南工业区武南中路 98 号

Add: 98.Wu Nan middle road.Gounan Industrial Park Changzhou

TEL:0086-519-89806966

FAX:0086-519-86523668

## IRM Type

### A-IRM38M12DB



#### Features

- High protection ability against EMI
- Suitable for continuous code
- Low operating voltage and low power consumption
- High immunity against ambient light
- High sensitivity
- Long reception range

#### Description

The A-IRM38M12DB devices are DIP type infrared receivers which have been developed and designed by using the latest IC technology.

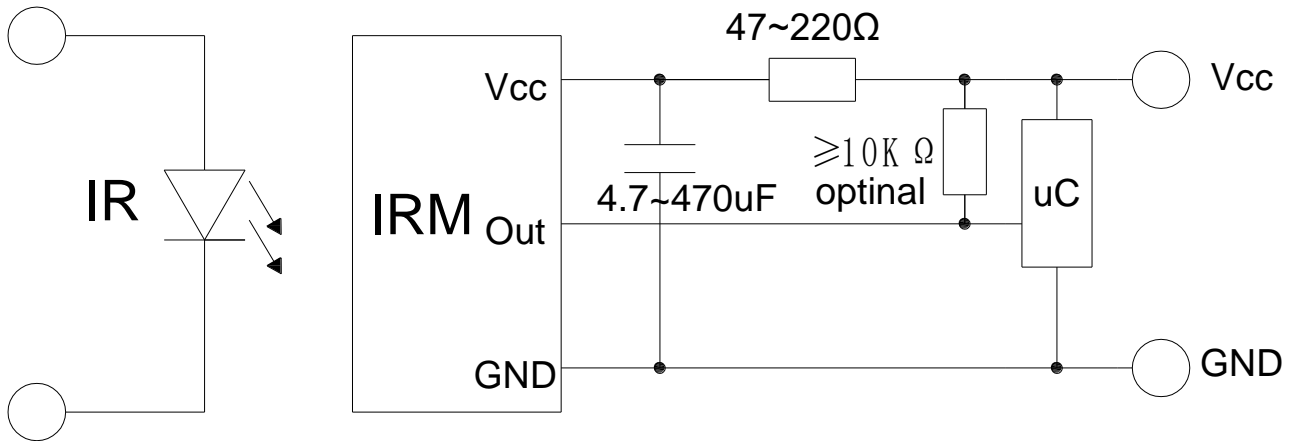
The PIN diode and preamplifier are assembled onto a lead frame and molded into a black epoxy package which operates as an IR filter.

The demodulated output signal can directly be decoded by a microprocessor.

#### Applications

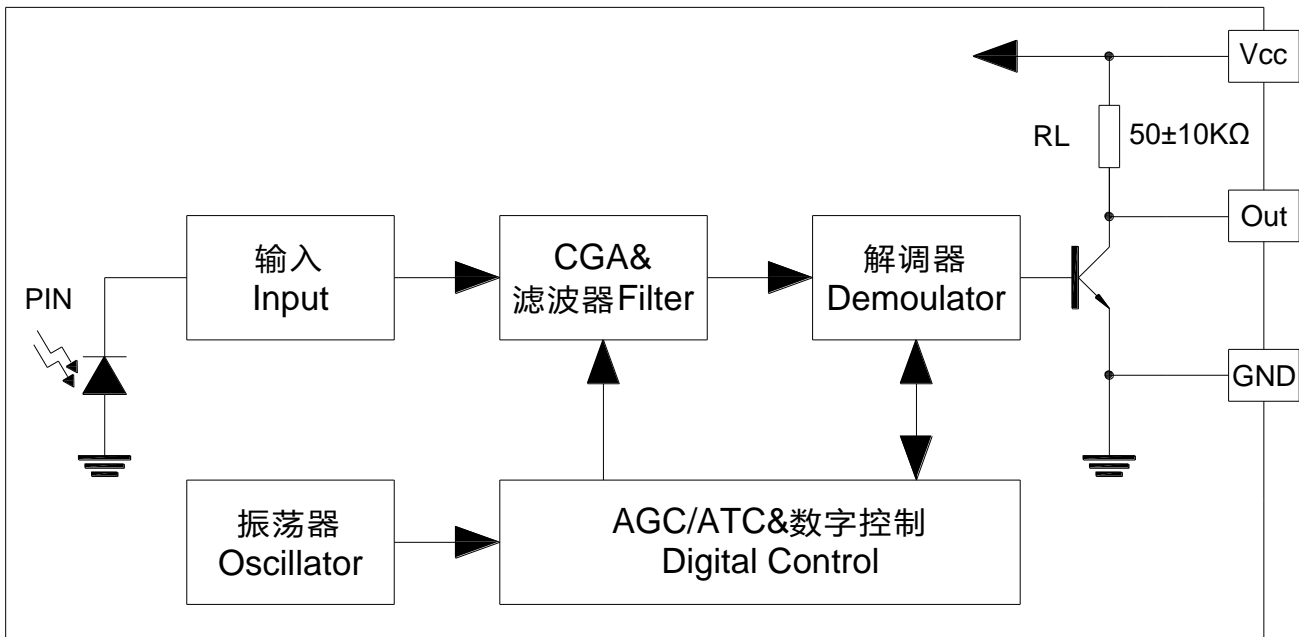
- AV equipment such as TV, VCR, DVD, CD, MD, etc.
- Short pause time protocols
- Toy applications
- CATV set top boxes
- Multi-media Equipment
- Other devices using IR remote control

**Application circuit**



The RC Filter must be connected as close as possible to Vcc and GND pins.

**BLOCK DIAGRAM**



### Absolute Maximum Ratings (T<sub>a</sub>=25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V <sub>cc</sub>	6	V
Operating Temperature	T <sub>opr</sub>	-20 ~ +80	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +125	°C
Soldering Temperature *1	T <sub>so</sub>	260	°C

Note:

\*1 4mm from mold body for less than 5 seconds

### Electro-Optical Characteristics (T<sub>a</sub>=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Supply Voltage	V <sub>cc</sub>	3.0	--	5.5	V	
Supply Current	I <sub>cc</sub>	--	0.45	0.70	mA	V <sub>cc</sub> =5.0V
Peak wavelength	λ <sub>p</sub>	--	940	--	nm	
High Level Pulse Width	T <sub>pwh</sub>	400	600	800	us	Test signal according to figure 1
Low Level Pulse Width	T <sub>pwl</sub>	400	600	800	us	
High Level Output Voltage	V <sub>oh</sub>	V <sub>cc</sub> -0.3	V <sub>cc</sub>	--	V	
Low Level Output Voltage	V <sub>ol</sub>	0	0.2	0.4	V	
Half Angle	θ	--	±45	--	deg	Angle of half transmission distance
Reception Distance	L0	--	20	--	m	EV=200±50Lx, test signal see fig.3, IR diode SED113, I <sub>F</sub> =400mA
	L45	--	10	--	m	
Center Carrier Frequency	f <sub>0</sub>	--	38	--	KHz	

Note:

Stress above those listed under Absolute Maximum Rating may cause permanent damage of device.

**Test method**

The specified electro-optical characteristics are valid under the following conditions.

1. Measurement environment  
Indoor, without extreme reflection of light.
2. External light  
Detecting surface illumination shall be  $200 \pm 50$  Lux under ordinary fluorescent lamp of no high Frequency lighting.
3. Standard transmitter  
The test transmitter is calibrated by using the circuit shown in figure 2. Burst wave of standard transmitter shall be arranged to  $50mV_{p-p}$  under the measurement circuit.
4. The signal is according to figure 1.
5. Receive distanced incidence angle test is shown in figure 3.

Fig.1 Transmitter Wave Form

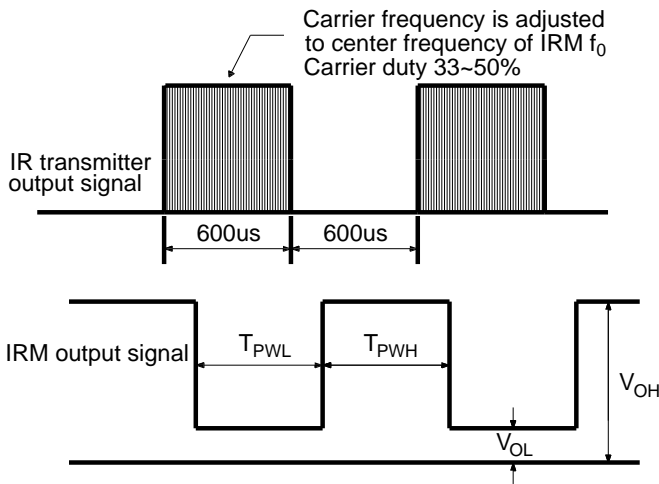


Fig.2 Standard transmitter calibration

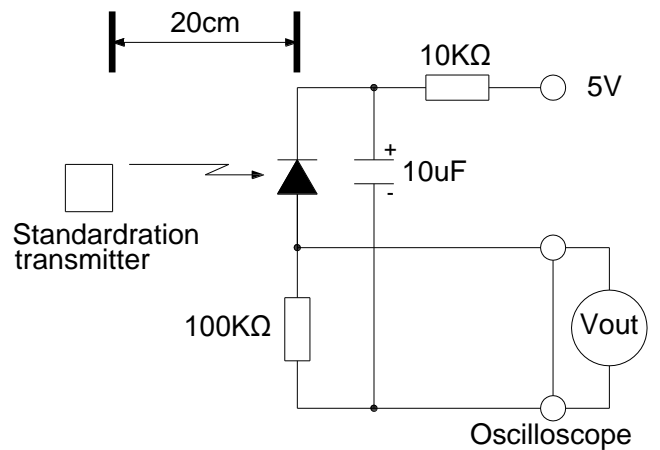
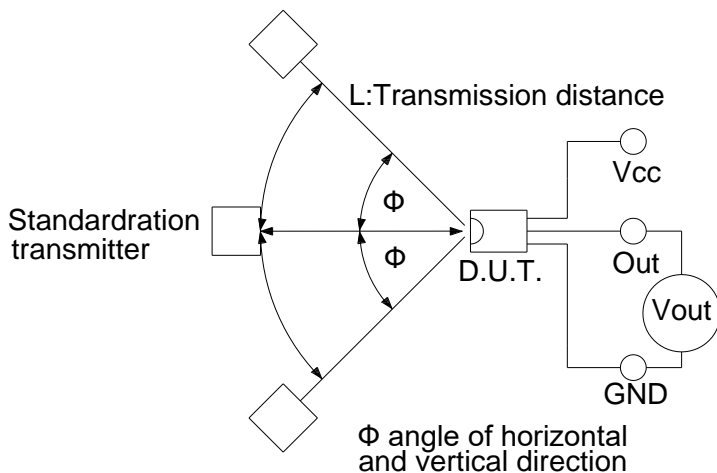


Fig.3 Receive distanced incidence angle test



**Typical Electro-Optical Characteristics Curves**

Fig.4 Relative spectril sensitivity

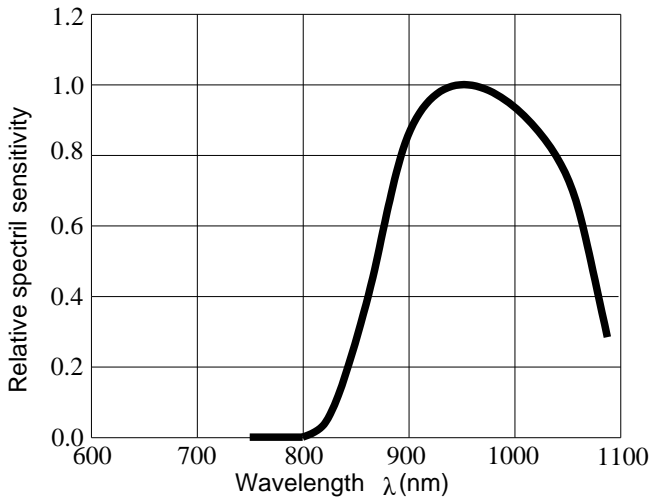


Fig.5 Incidence angle VS. Relative receiving distance

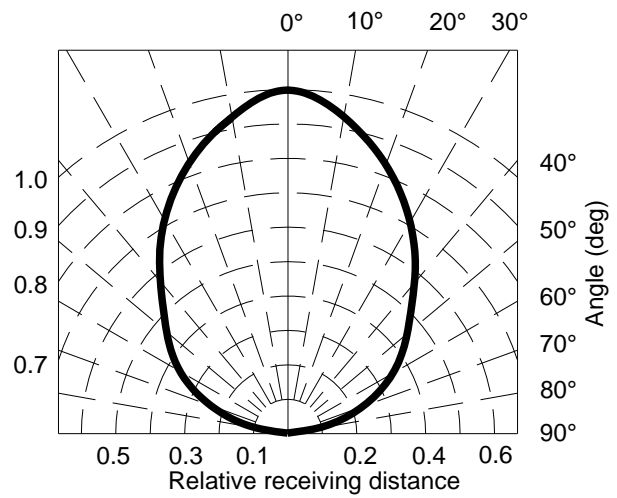


Fig.6 Variation output pulse width vs. Distance

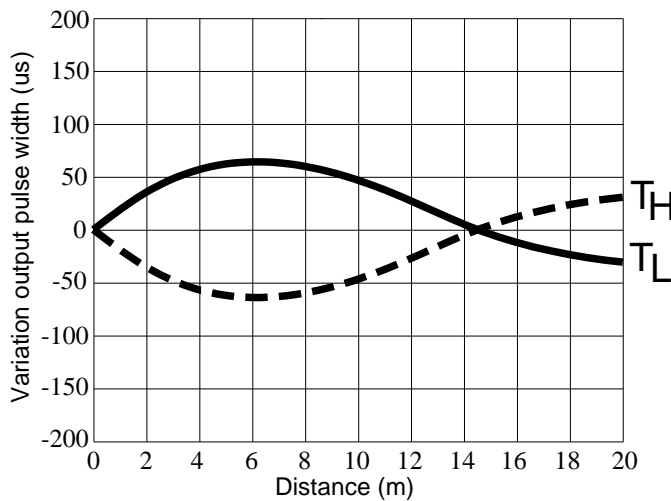
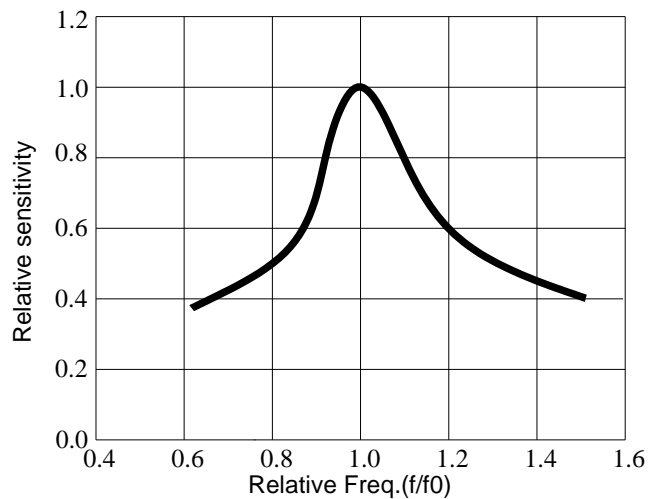


Fig.7 Relative sensitivity VS. Frequency



**SUITABLE DATA FORMAT**

Data Format	Suitable	Data Format	Suitable
NEC	YES	Sony 12Bit	YES
RC5_Philips	YES	Sony 15Bit	YES
RC6_Philips	YES	Sony 20Bit	YES
RCA_Thomson	YES	Powermeter code (standard code)	YES
Toshiba	YES	Powermeter code (0X00 byte code)	more than 200 bytes
RCMM Code	NO	Continuous code	YES
XMP Code	NO		

**Package Dimension**

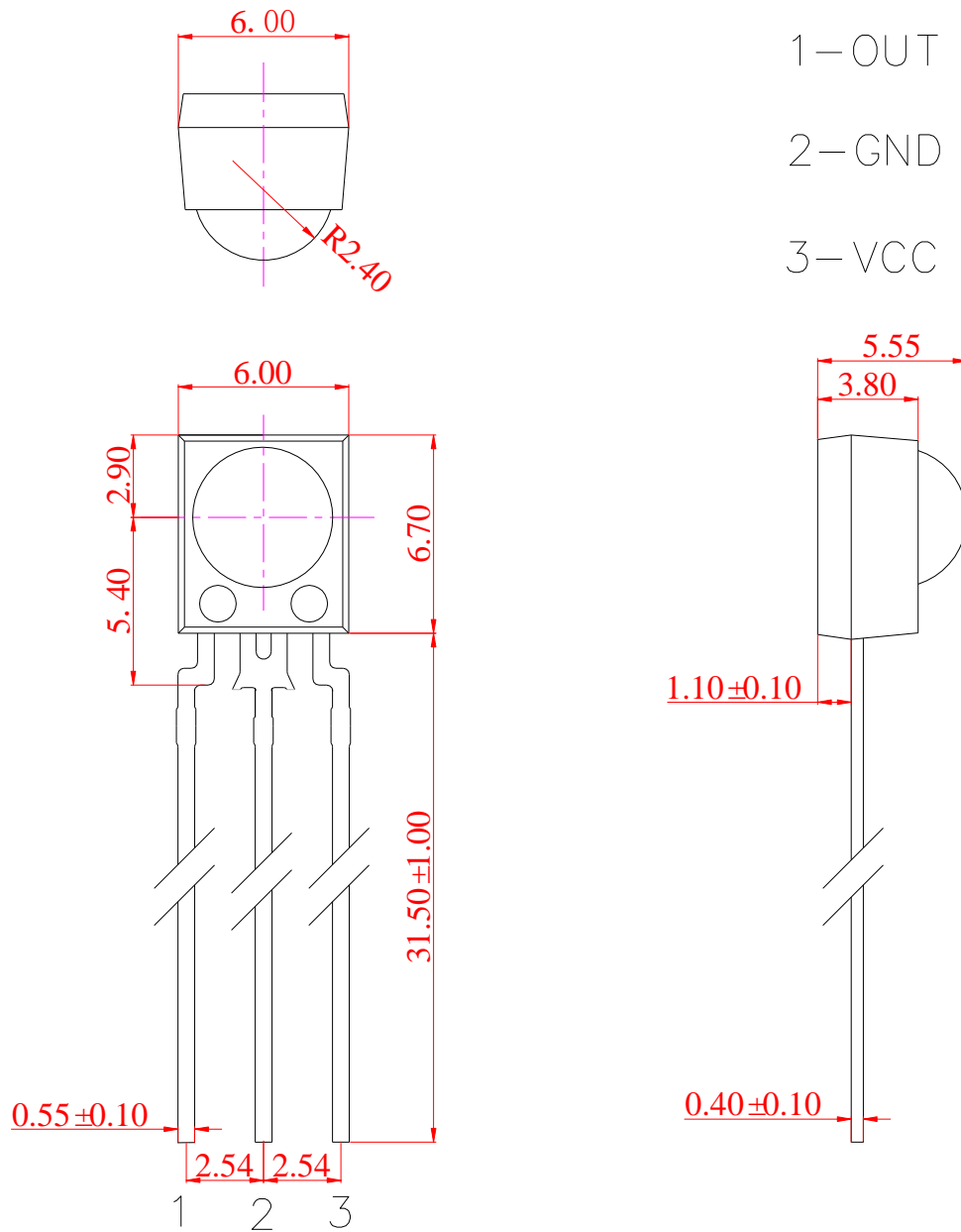
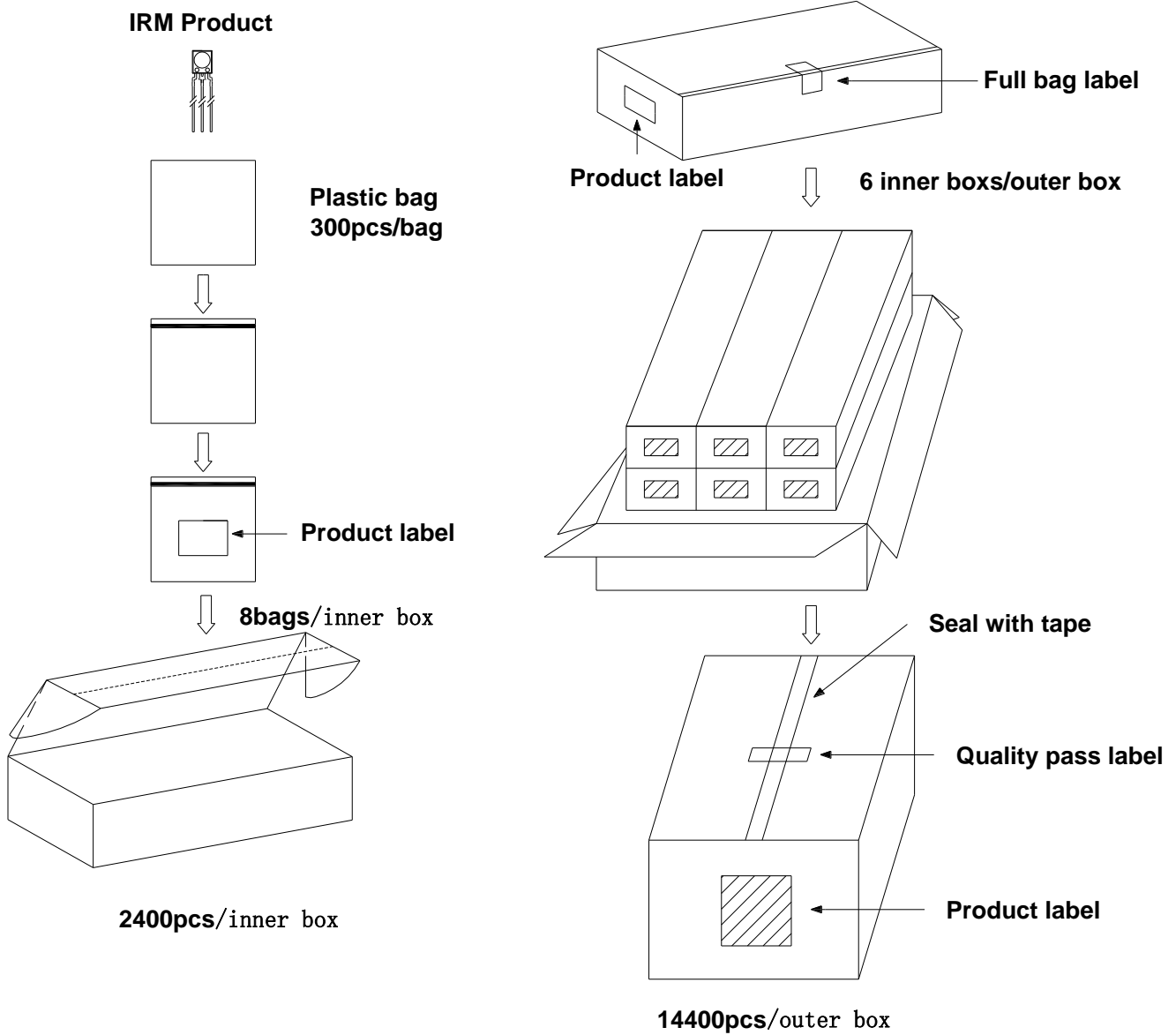


Fig.8

Note:  
Tolerance unless mentioned is  $\pm 0.5\text{mm}$ , Unit = mm.

**PACKAGING SPECIFICATION**

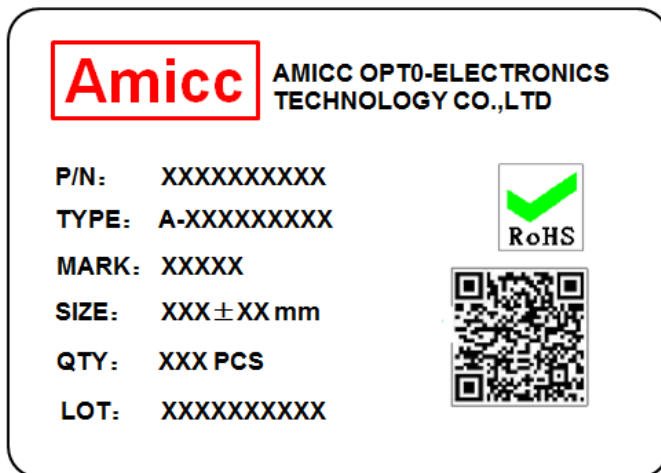


**NOTE:**

1. The size of inner box is 380×145×90 mm
2. The size of outer box is 460×400×215 mm



### Label Explanation



- ◆P/N: Product Number
- ◆TYPE: Part No.
- ◆MARK: Production batch Number
- ◆SIZE: Product Size
- ◆QTY: Packing Quantity
- ◆LOT: Lot Number

### MOUNTING CONDITION

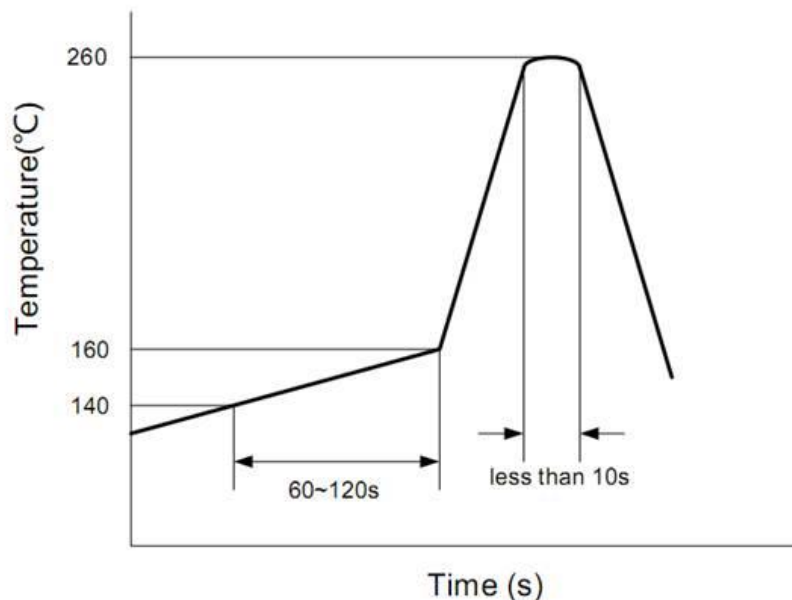
\* WAVE SOLDERING CONDITION (SUGGESTION)

Max. Temperature (Surface) :  $\leq 260^{\circ}\text{C}$

Max. Temperature Duration :  $\leq 10\text{s}$

Pre-heat Temperature :  $120^{\circ}\text{C}$

Soldering Times : 2 Times



\* HAND SOLDERING CONDITION (SUGGESTION)

Max. Temperature (surface) :  $\leq 350^{\circ}\text{C}$

Max. Temperature Duration :  $\leq 5\text{s}$

Soldering Times : 2 Times

## **DISCLAIMER**

1. Above specification may be changed without notice. Amicc will reserve authority on material change for above specification.
2. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
3. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. Amicc 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.
4. These specification sheets include materials protected under copyright of Amicc. Reproduction in any form is prohibited without the specific consent of Amicc.
5. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Amicc sales agent for special application request.