

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-IRM38F102A-B02

发文日期 (Issue Date) : 2023/04/06 承认日期 (Approved Date) : _____

Checking signature of Amicc

Designer	Checker	Approver
Money		

Approval signature of customer

Designer	Checker	Approver

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IRM Type

A-IRM38F102A-B02



Features

- High protection ability against EMI
- Circular lens for improved reception characteristics
- Low operating voltage and low power consumption
- High immunity against ambient light
- High sensitivity
- Long reception range

Description

The A-IRM38F102A-B02 devices are DIP type infrared receivers which have been developed and designed by using the latest IC technology.

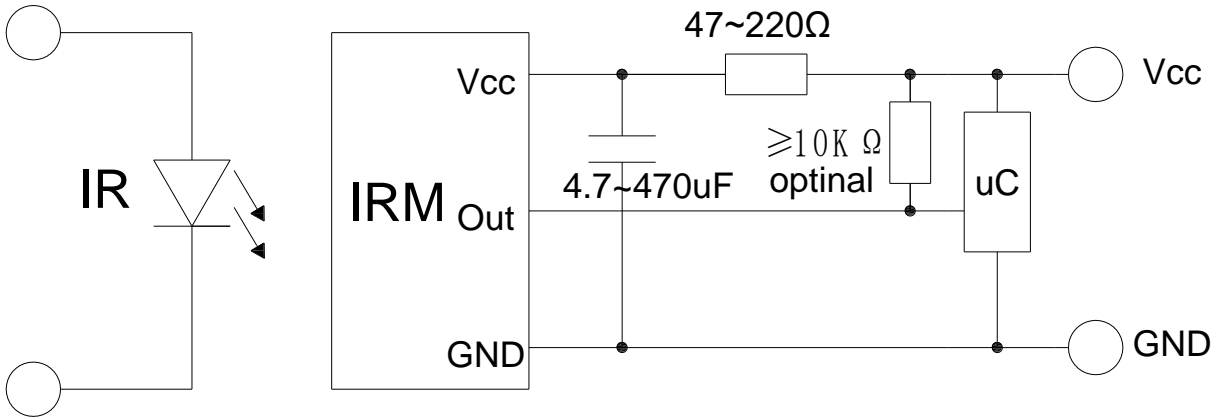
The PIN diode and preamplifier are assembled onto a lead frame and molded into a black epoxy package which operates as an IR filter.

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

Applications

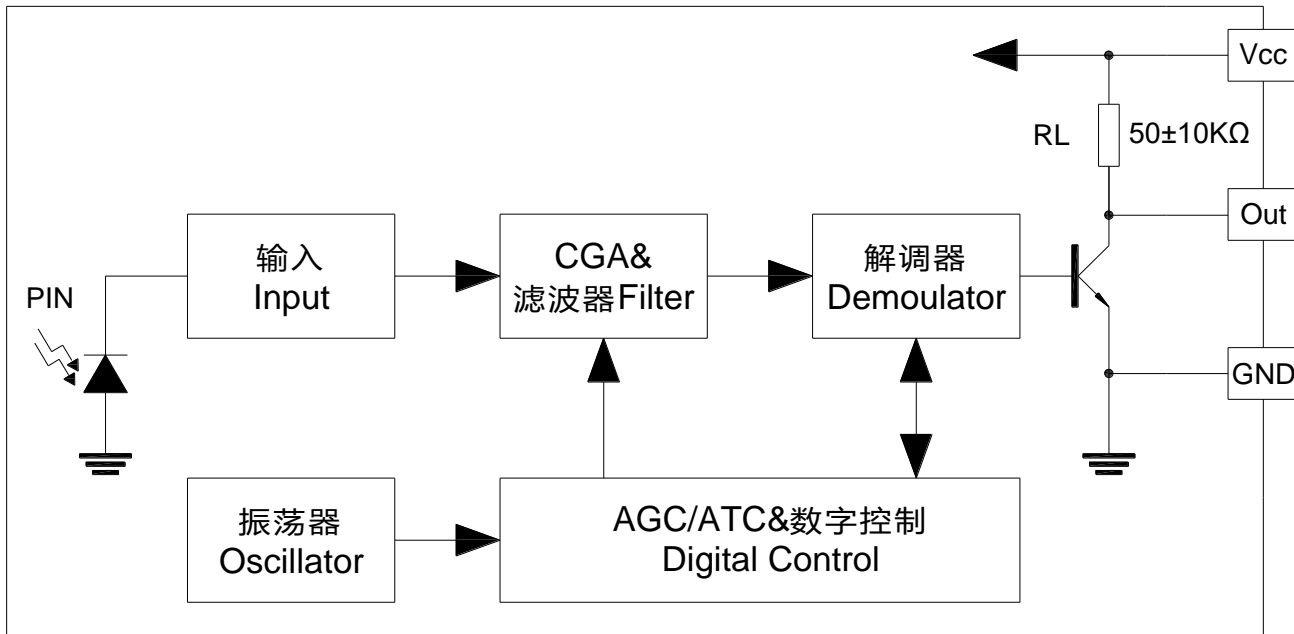
- AV equipment such as TV, VCR, DVD, CD, MD, etc.
- Short pause time protocols
- Toy applications
- CATV set top boxes
- Multi-media Equipment
- Other devices using IR remote control

Application circuit



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

BLOCK DIAGRAM



Absolute Maximum Ratings (T_a=25°C) *1

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{cc}	6	V
Operating Temperature	T _{opr}	-20 ~ +80	°C
Storage Temperature	T _{stg}	-40~ +125	°C
Soldering Temperature *2	T _{so}	260	°C

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

*2 4mm from mold body for less than 5 seconds.

Electro-Optical Characteristics (T_a =25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Supply Voltage	V _{cc}	2.7	--	6.0	V	
Supply Current	I _{cc}	--	0.5	0.9	mA	V _{cc} =3.0V
		--	0.4	0.9	mA	V _{cc} =5.0V
Peak wavelength	λ _p	--	940	--	nm	
High Level Pulse Width	T _{pwh}	400	600	800	us	
Low Level Pulse Width	T _{pwl}	400	600	800	us	Test signal according to figure 1
High Level Output Voltage	V _{oh}	V _{cc} -0.3	V _{cc}	--	V	
Low Level Output Voltage	V _{ol}	--	0.2	0.4	V	
Half Angle	θ	--	±45	--	deg	Angle of half transmission distance
Reception range	L0	--	20	--	m	E _v =200±50Lx, test signal see fig.3, IR diode SED113, I _f =400mA
	L45	--	10	--	m	
Center CarrierFrequency	f ₀	--	38	--	KHz	

Test method

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

1. Measurement environment
Indoor, without extreme light reflected.
2. External light
Detecting surface illumination shall be 200 ± 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 50mVp-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

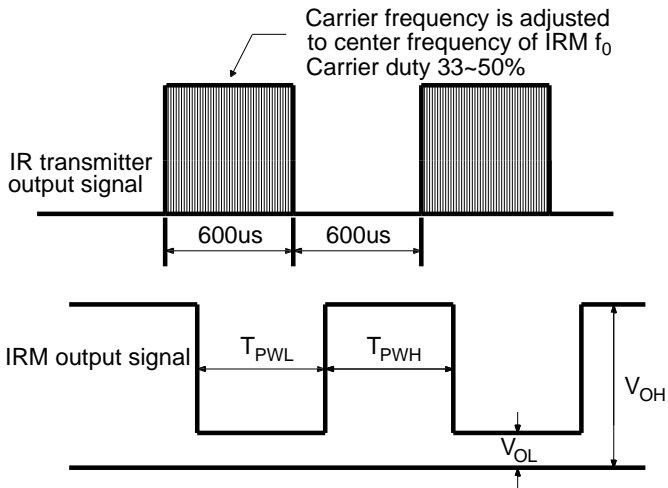


Fig.2 standard transmitter calibration

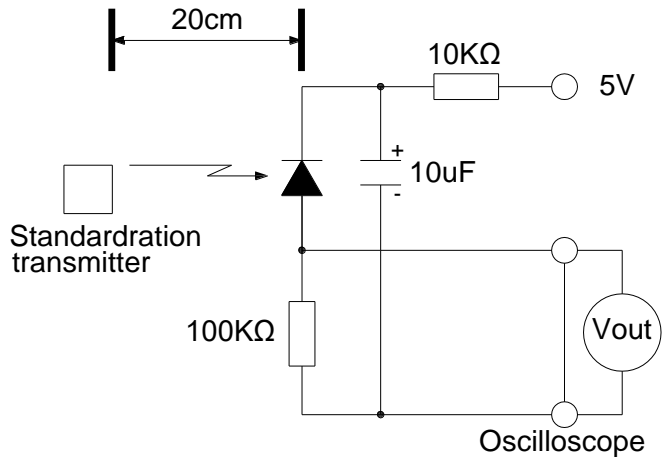
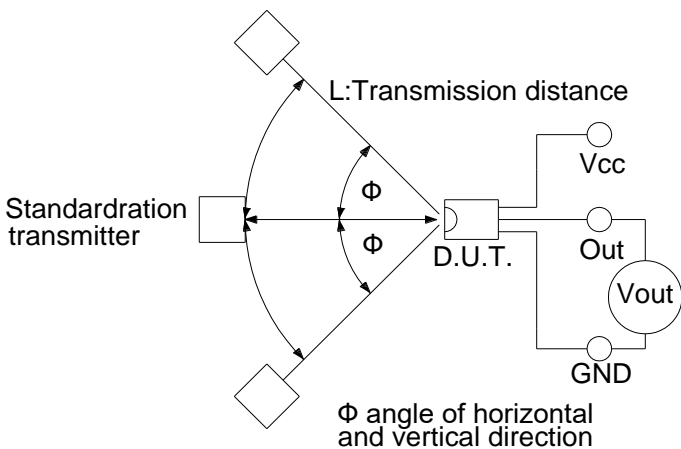


Fig.3 Receive distanced incidence angle test



Typical Electro-Optical Characteristics Curves

Fig.4 Relative spectril sensitivity

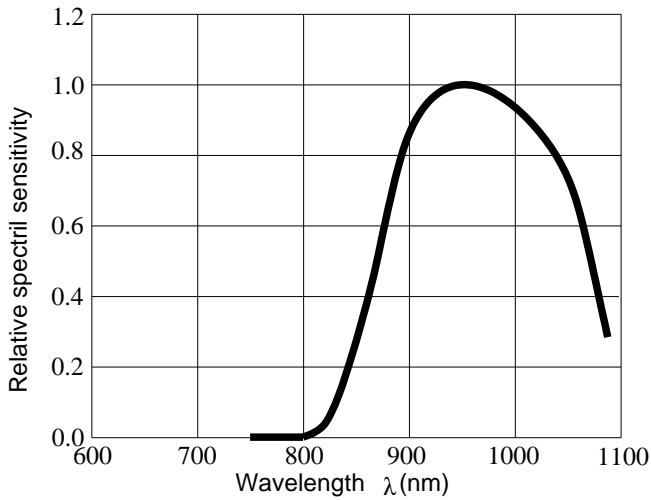


Fig.5 Incidence angle VS. Relative receiving distance

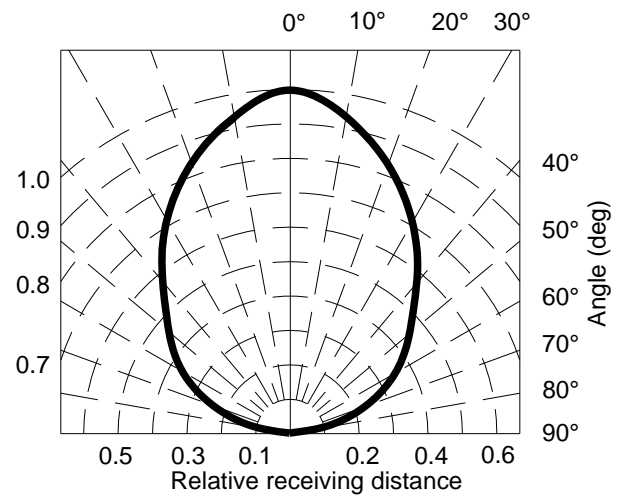


Fig.6 Variation output pulse width vs. Distance

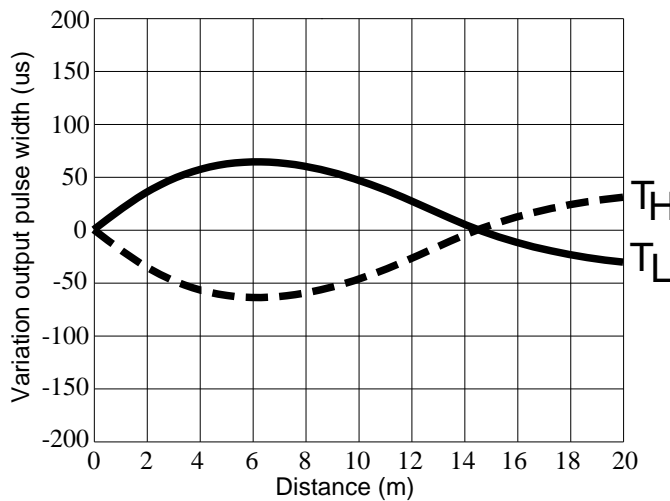
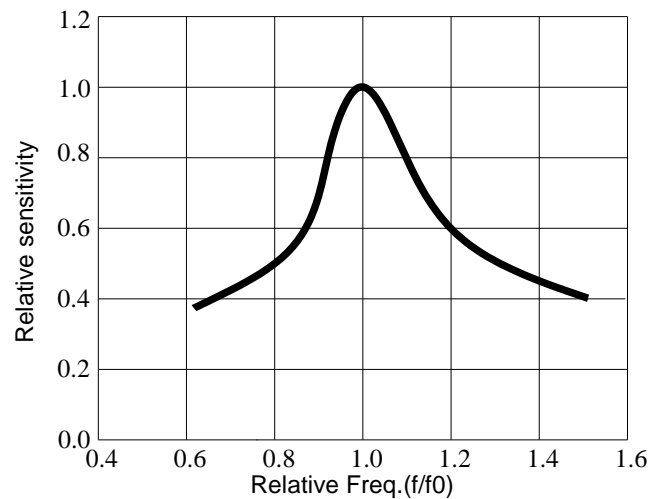


Fig.7 Relative sensitivity VS. Frequency



SUITABLE DATA FORMAT

Data Format	Suitable	Data Format	Suitable
NEC	YES	Toshiba Code	YES
RC5_Philips	YES	Sony 12Bit	YES
RC6_Philips	YES	Sony 15Bit/20Bit	NO
RCMM Code	NO	XMP Code	NO

Package Dimension

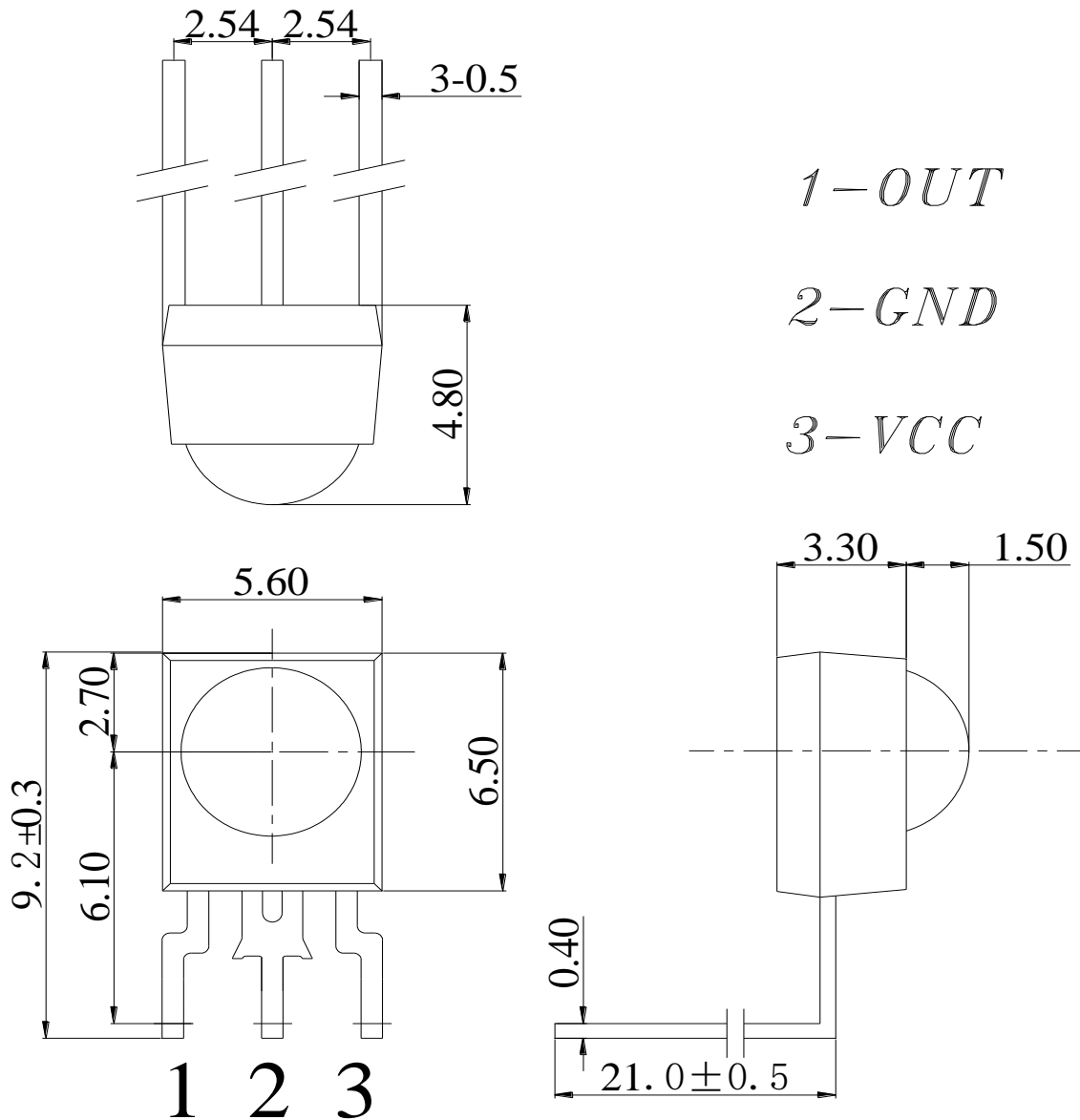
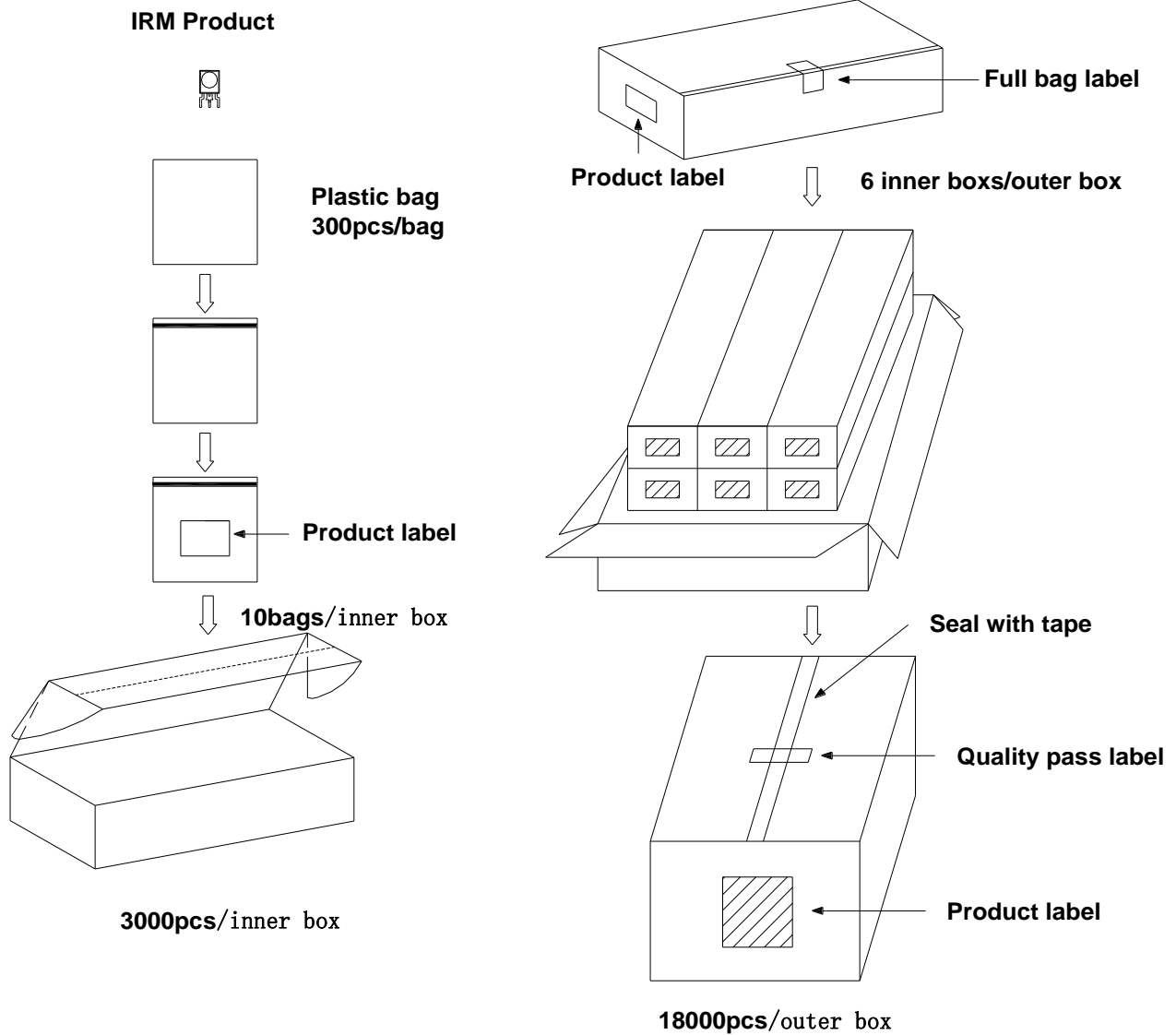


Fig.7

Note:
Tolerance unless mentioned is ±0.3mm, Unit = mm.

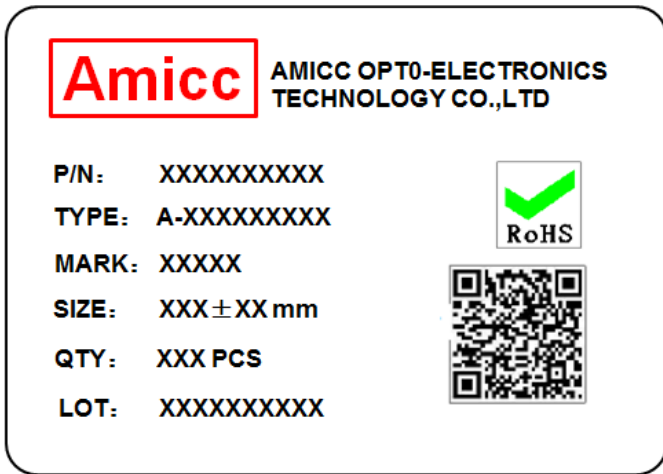
PACKAGING SPECIFICATION



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

Reliability Test Items and Conditions

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

Confidence level : 80%

LTPD : 20%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Flow Soldering Heat Resistance Test	Preheating: Less than 120°C and Less than 60s Solder:Tamb=260°C, From the lead bottom surface 1.6mm Flux none.	t=10s,2 Times	22 PCS.	0/1
2	Hand Soldering Heat Resistance Test	Tamb=350°C, From the lead bottom surface 1.6mm Flux none	t=5s,2 Times	22 PCS.	0/1
3	High Temperature Bias Operating Life Test	Tamb=85°C、Vcc=5V	500 Hrs	22 PCS.	0/1
4	High Temperature Humidity Storage Life Test	Tamb=85°C、RH=85%	1000 Hrs.	22 PCS.	0/1
5	High Temperature Storage Life Test	Tamb=85°C	1000 Hrs.	22 PCS.	0/1
6	Low Temperature Storage Life Test	Tamb=-25°C	1000 Hrs.	22 PCS.	0/1
7	Thermal Shock Test	Tamb=-20°C(5min) ~85°C(5min)	10 Cycles	22 PCS.	0/1
8	Temperature Cycle Test	Tamb=-20°C(30min)~25°C(5min) ~85°C(30min)	20 Cycles	22 PCS.	0/1
9	Drop Test	Drop distance:1 m,Drop the device 3 times on a maple board of 3 cm or more in thickness	3 Times	22 PCS.	0/1

MOUNTING CONDITION

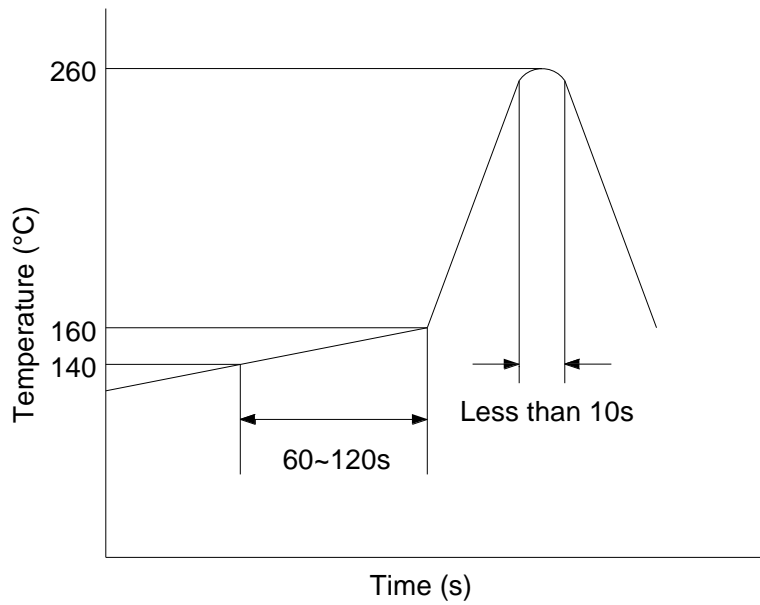
* WAVE SOLDERING CONDITION (SUGGESTION)

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

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

Pre-heat Temperature : 140°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.
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