

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-SP158IR1C-A02-2D

发文日期 (Issue Date) : 2021/9/15 承认日期 (Approved Date) : _____

Checking signature

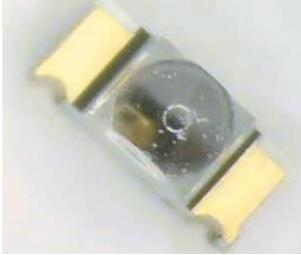
Designer	Checker	Approver
Will		

Approval signature of customer

Designer	Checker	Approver

Infrared LED ■ Side View

A-SP158IR1C-A02-2D



Features

- Small double-end package
- Side view LED
- Compatible with infrared and vapor phase reflow solder process.
- Narrow viewing angle
- Pb-free
- RoHS compliant
- IPC / JEDEC J-STD-020C: Level 3

Description

The Amicc A-SP158IR1C-A02-2D SMD LED is an infrared emitting diode in miniature side view SMD package and it is molded in a water clear plastic. The device is perfectly matched with silicon photodiode and phototransistor..

Applications

- Free air transmission system
- Infrared remote control units with high power requirement
- Smoke detector
- Infrared applied system

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaAs	Infrared	Water Clear

Absolute Maximum Ratings ($T_{\text{Soldering}}=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Forward Current	I_F	70	mA
Peak Forward Current Pulse Width $\leq 15\mu\text{s}$, Duty $\leq 50\%$.	I_{FP}	300	mA
Peak Forward Current Pulse Width $\leq 50\mu\text{s}$, Duty $\leq 1\%$.	I_{FP}	1000	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^{\circ}\text{C}$
Power Dissipation at(or below) 25 $^{\circ}\text{C}$ Free Air Temperature	P_d	120	mW
Soldering Temperature	T_{sol}	260 $^{\circ}\text{C}$	$^{\circ}\text{C}$

Note: *1: Soldering time ≤ 5 seconds.

Electro-Optical Characteristics ($T_{\text{Soldering}}=25^{\circ}\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant Intensity	E_e	10.0	25.0	-----	mW/sr	$I_F=20\text{mA}$
		-----	80	-----		$I_F=70\text{mA}$
Forward Voltage	V_F	-----	1.25	1.5	V	$I_F=20\text{mA}$
		-----	1.4	-----		$I_F=70\text{mA}$
Peak Wavelength	λ_p	-----	940	-----	nm	$I_F=20\text{mA}$
Viewing Angle	$2\theta_{1/2}$	-----	18	-----	deg	$I_F=20\text{mA}$
Reverse Current	I_R	-----	-----	10	μA	$V_R = 5\text{V}$

Note:

1. Tolerance of Radiant Intensity: $\pm 10\%$
2. Tolerance of Forward Voltage: $\pm 0.1\text{V}$.

Typical Electro-Optical Characteristics Curves

Fig.1-Forward Current vs.

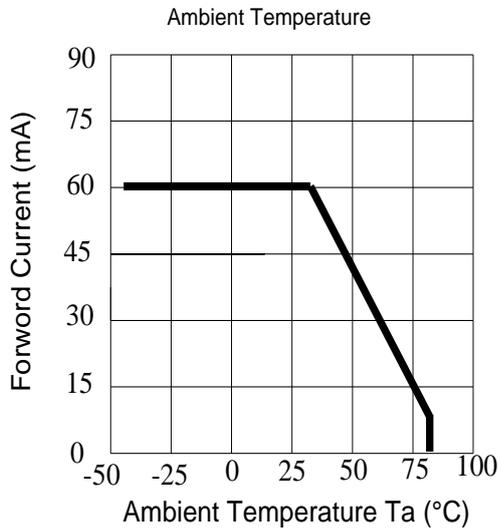


Fig.2-Spectral Sensitivity

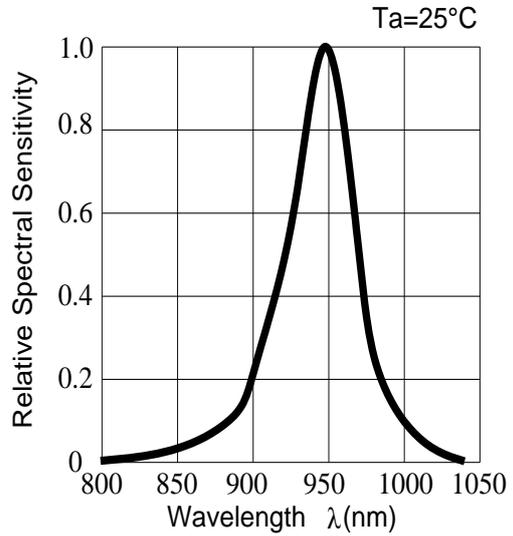


Fig.3-Forward Current vs. Forward Voltage $T_a=25^\circ\text{C}$

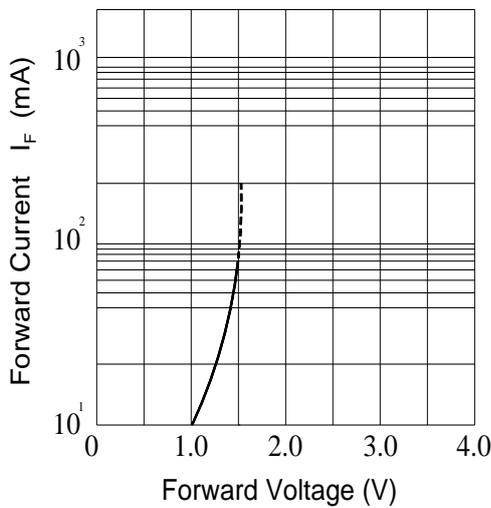
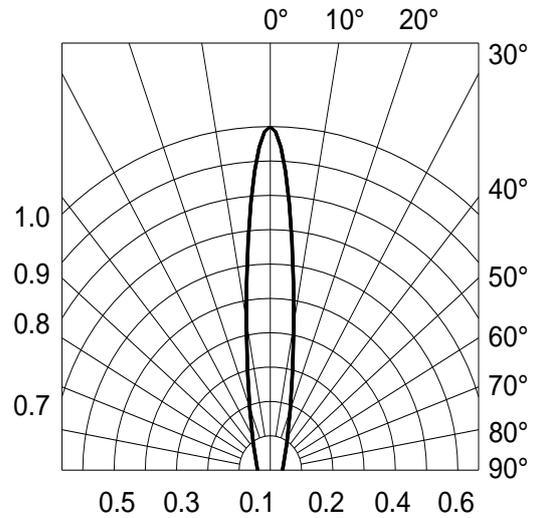


Fig.4-Radiation Diagram $T_a=25^\circ\text{C}$



Typical Electro-Optical Characteristics Curves

Fig.5-Peak Emission Wavelength vs. Ambient Temperature

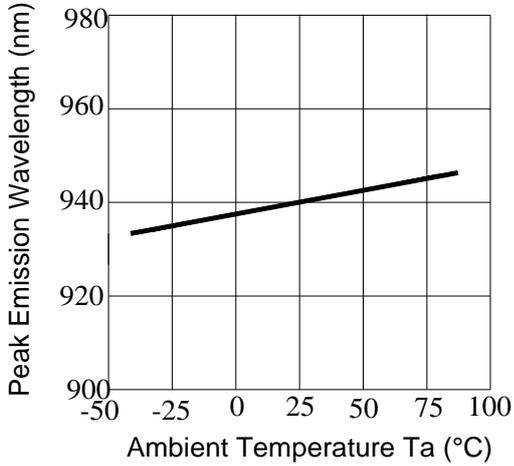


Fig.6-Relative Intensity vs. Forward Current $T_s=25^\circ\text{C}$

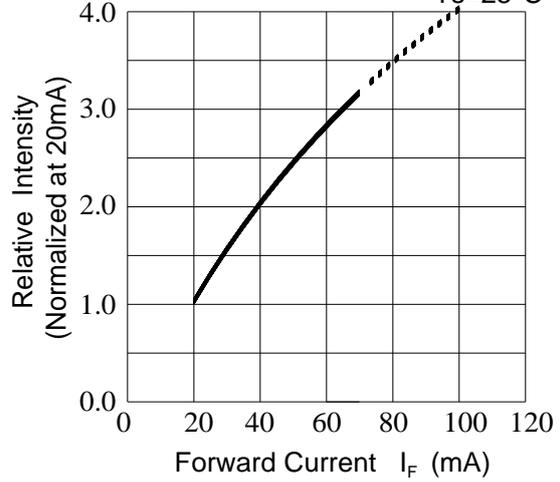


Fig.7-Relative Intensity vs. Ambient Temperature

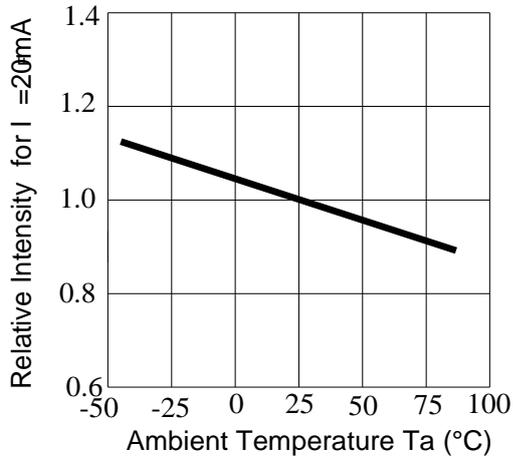
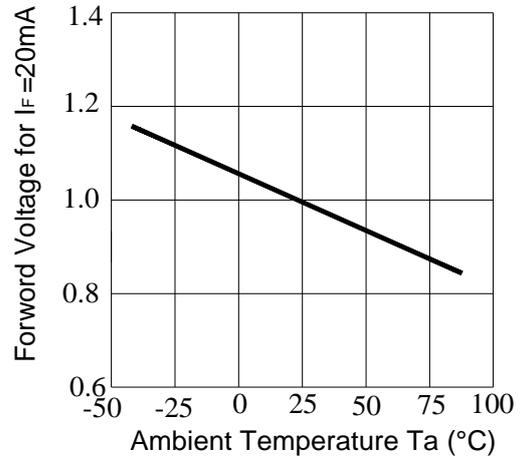
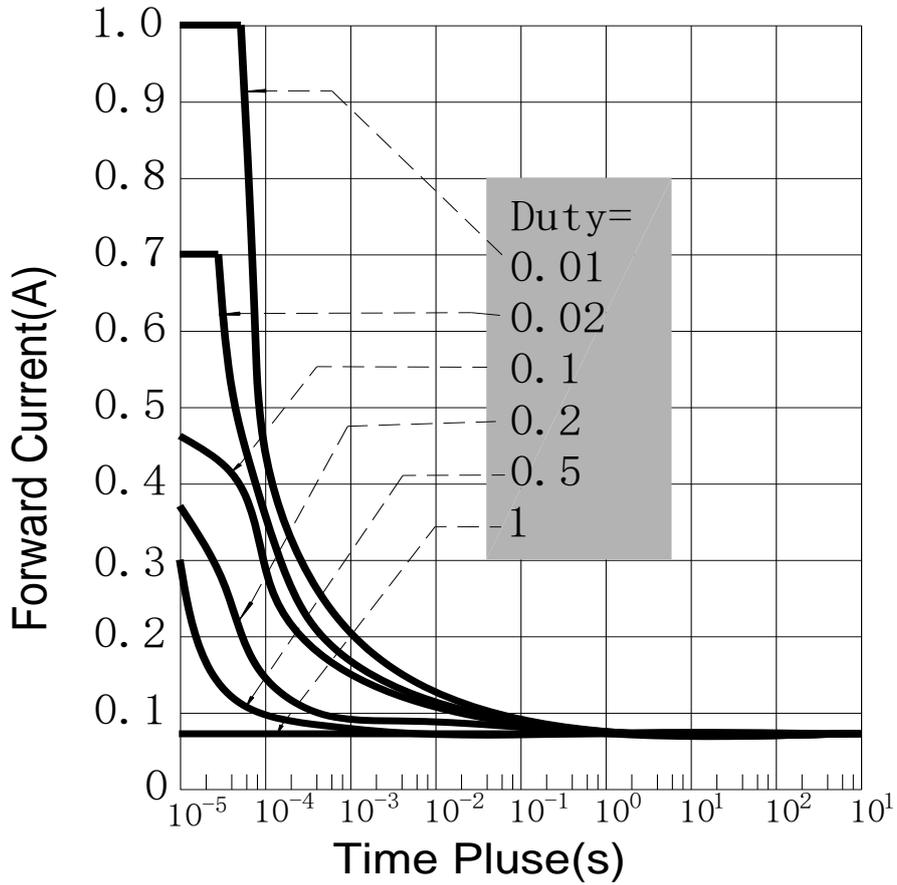


Fig.8-Forward Voltage vs. Ambient Temperature

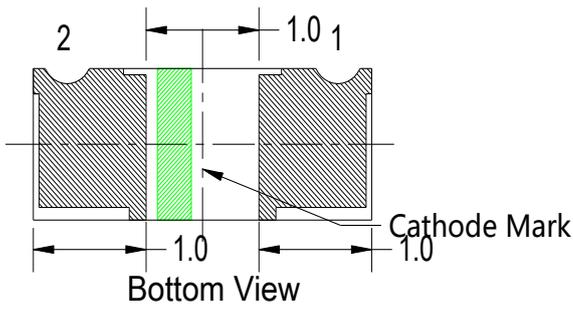
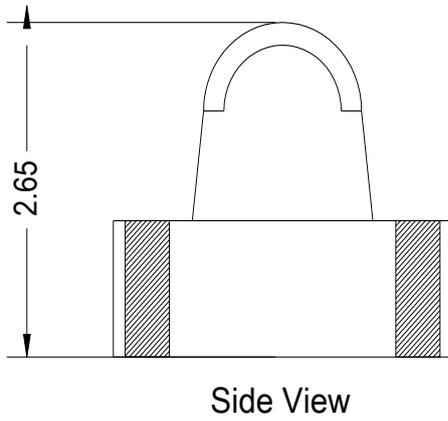
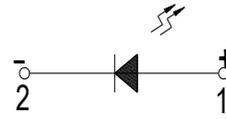
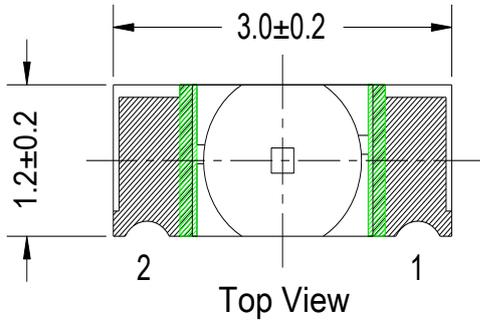


Typical Electro-Optical Characteristics Curves

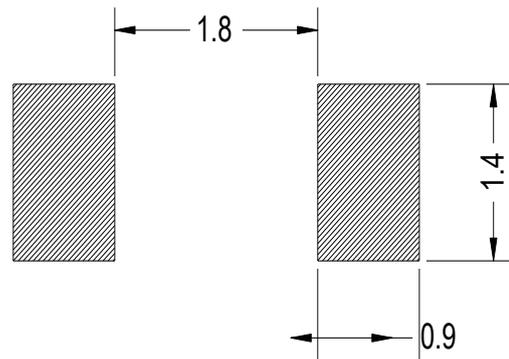
Fig.9-Permissible Pulse Handling Capability



Package Dimension



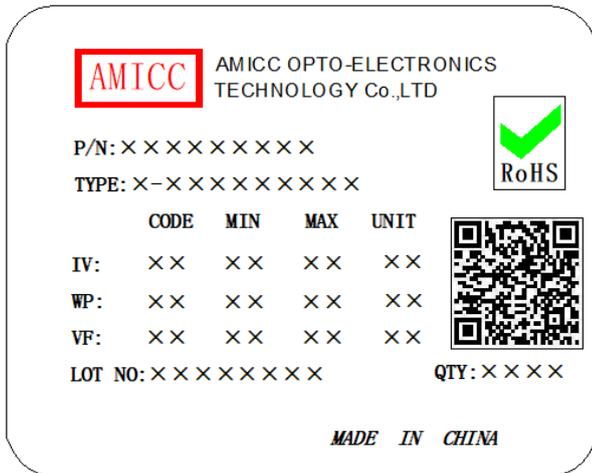
Recommended Solder Pad



Note:
Tolerance unless mentioned is ± 0.1 mm, Unit = mm.

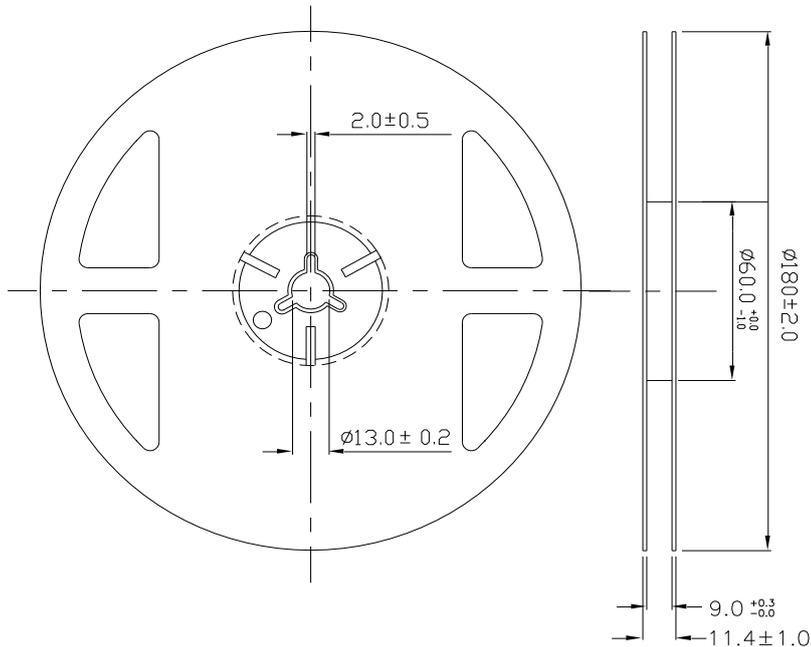
Moisture Resistant Packing Materials

Label Explanation



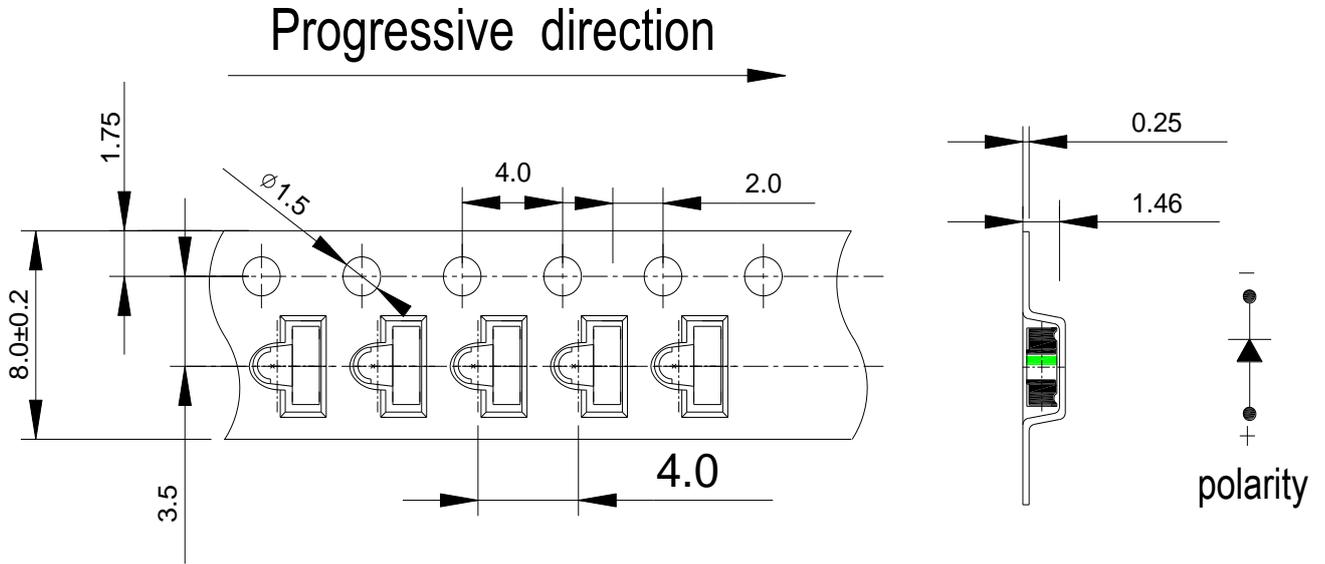
- CPN: Customer's Product Number
- P/N: Product Number
- TYPE :Part NO.
- IV: Radiant Intensity Rank
- WP: Peak. Wavelength Rank
- VF: Forward Voltage Rank
- LOT NO.: Lot Number
- QTY: Packing Quantity

Reel Dimensions



Note:
 Tolerances unless mentioned ±0.1mm,Unit = mm.

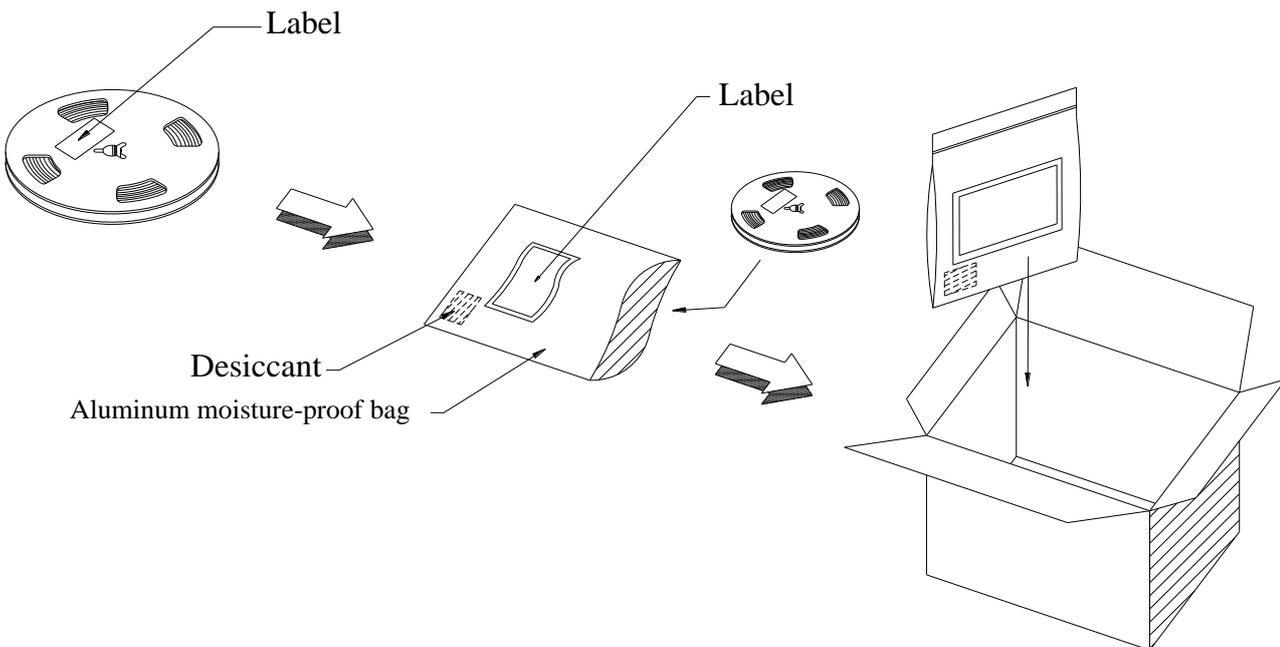
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Notes:

1. Tolerance unless mentioned is ± 0.1 mm, Unit = mm.
2. Minimum packing amount is 1000 pcs per reel.

Moisture Resistant Packing Process



Reliability Test Items and Conditions

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

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260°C/10sec.	6 Min.	22 PCS.	0/1
2	Thermal Shock	H : +100°C 5min ↓ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
3	Temperature Cycle	H : +100°C 15min ↓ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
4	High Temperature/Humidity	Ta=85°C,85%RH	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Ta=-40°C	1000 Hrs.	22 PCS.	0/1
6	High Temperature Storage	Ta=100°C	1000 Hrs.	22 PCS.	0/1
7	DC Operation Life	Ta=25°C, I _F = 70 mA	1000 Hrs.	22 PCS.	0/1

Precautions for Use

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

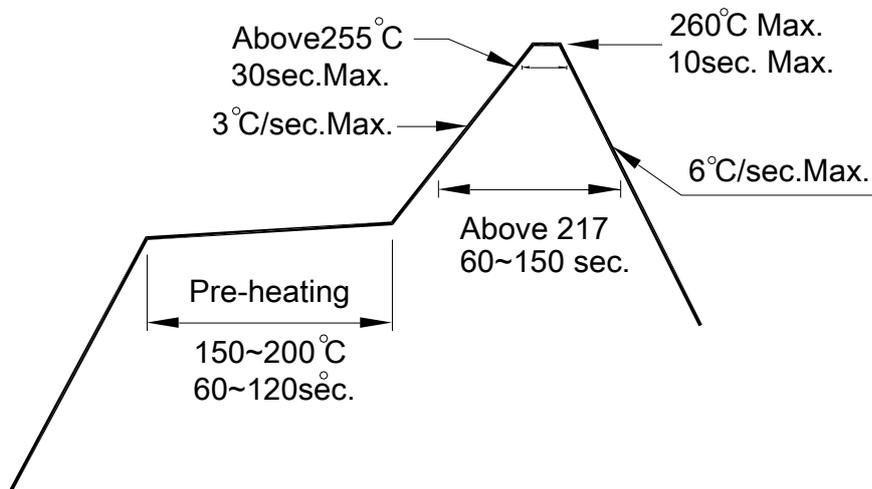
2.3 After opening the package: The LED's floor life is 1 week under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment: 60±5°C for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

