



## Technical Data Sheet (Preliminary)

### Luminosity Full Color LED

#### 61-23 RGBC/TR8

#### Features

- Super-luminosity chip LED.
- White SMT package.
- Built in Red, Green, and Blue chips.
- Lead frame package with individual 6 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.



#### Descriptions

- Due to the package design, 61-23 has wide viewing angle , low power consumption and adjusting each color is possible thanks to serial connection by 6 terminal connection (Individual driving by each terminal) in case of using several number of LED. And makes it ideal for light pipe application.

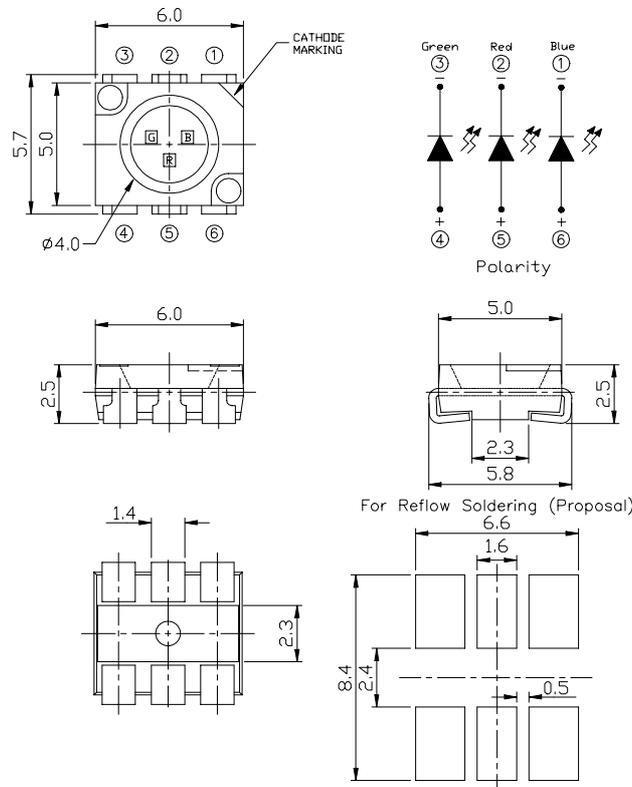
#### Applications

- Amusement equipment.
- Information boards.
- Flashlight for digital camera of cellular phone.

#### Device Selection Guide

Chip			Lens Color
Type	Material	Emitted Color	
R	AlGaInP	Super Sunset Orange	Water Clear
G	InGaN	Super Green	
B	InGaN	Super Blue	

**Package Outline Dimensions**



**Notes:** 1.All dimensions are in millimeters. 2.Tolerances unspecified are  $\pm 0.1$ mm.

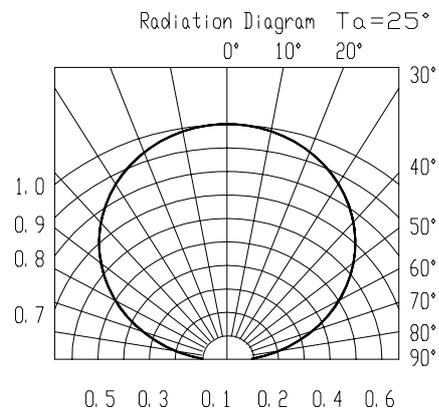
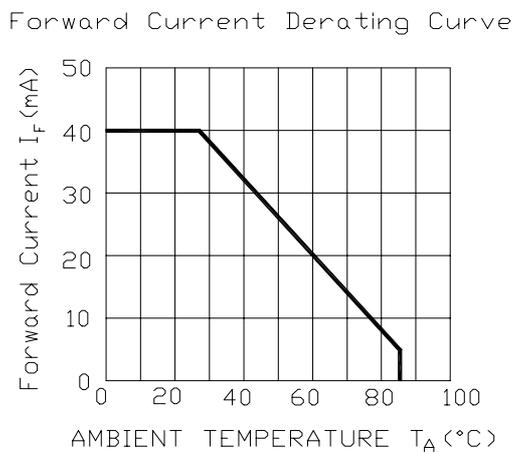
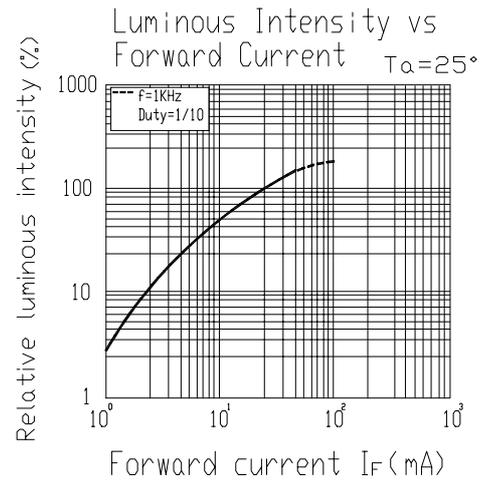
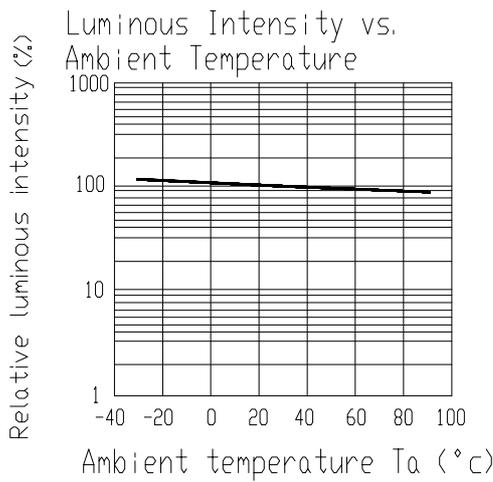
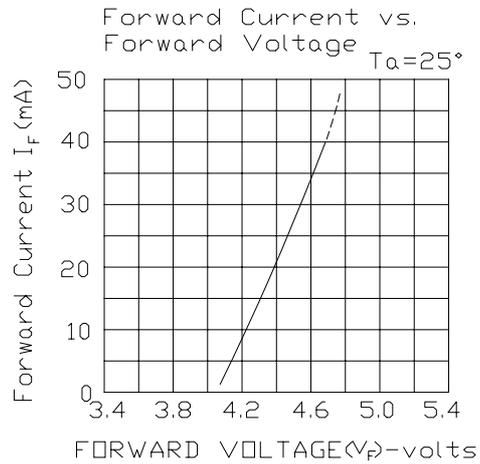
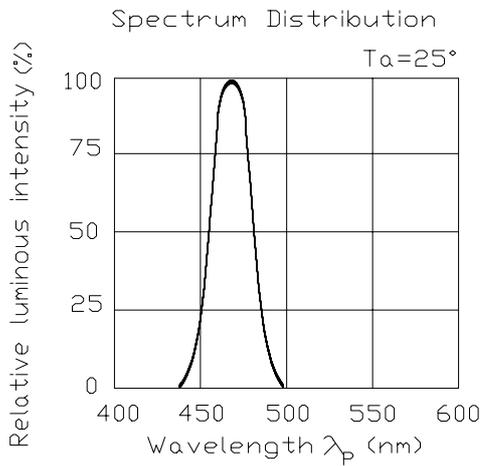
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40~ +100	°C
Soldering Temperature	T <sub>sol</sub>	260 (for 5 second)	°C
Electrostatic Discharge	ESD	R	2000
		G	150
		B	150
Power Dissipation	P <sub>d</sub>	110	mW
Forward Current	I <sub>F</sub>	R	40
		G	40
		B	40
Peak Forward Current(Duty 1/10 @ 1KHz)	I <sub>F</sub> (Peak)	R	100
		G	100
		B	100

**Electro-Optical Characteristics (Ta=25°C)**

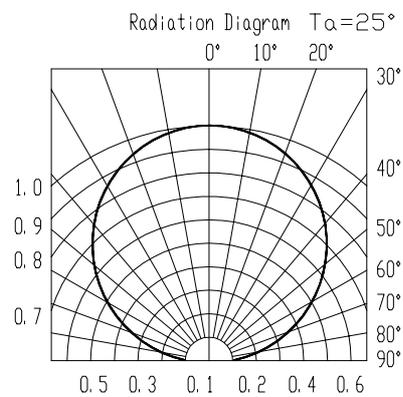
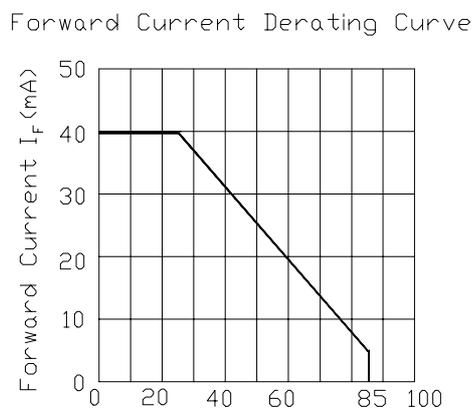
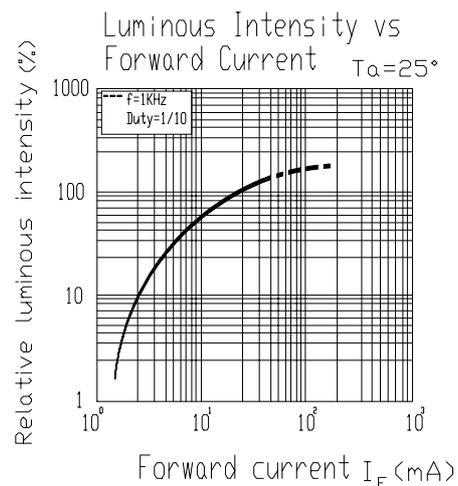
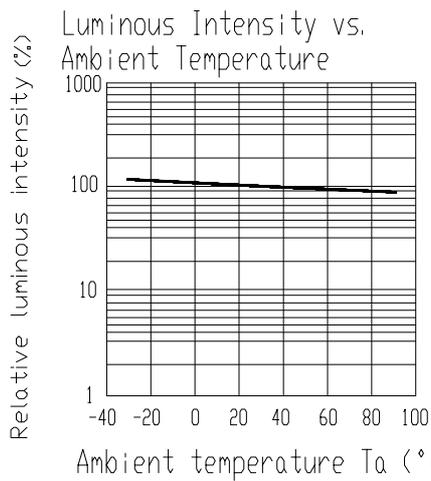
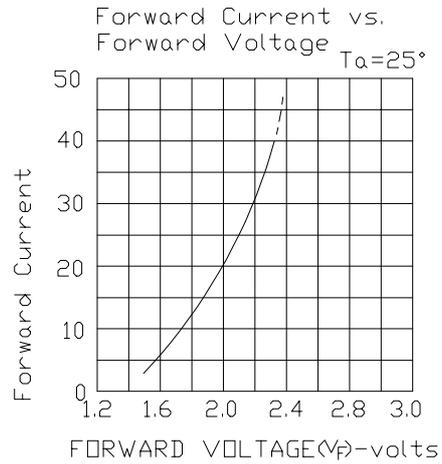
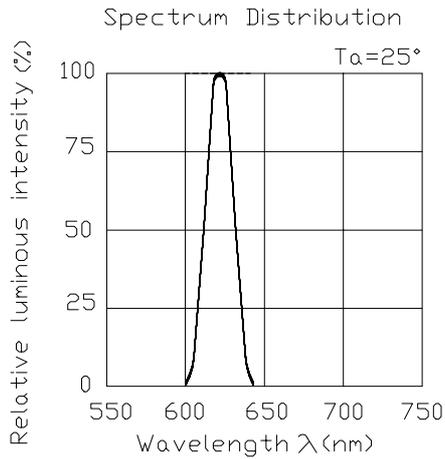
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	R	1450	-----	mcd	I <sub>F</sub> =40mA
		G				I <sub>F</sub> =40mA
		B				I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	-----	120	-----	deg	I <sub>F</sub> =40mA
Peak Wavelength	λ <sub>p</sub>	R	621	-----	nm	I <sub>F</sub> =40mA
		G	518	-----		
		B	468	-----		
Dominant Wavelength	λ <sub>d</sub>	R	615	-----	nm	I <sub>F</sub> =40mA
		G	525	-----		
		B	470	-----		
Spectrum Radiation Bandwidth	Δλ	R	18	-----	nm	I <sub>F</sub> =40mA
		G	35	-----		
		B	35	-----		
Forward Voltage	V <sub>F</sub>	R	2.3	2.9	V	I <sub>F</sub> =35mA
		G	4.6	5.2		
		B	4.6	5.2		
Reverse Current	I <sub>R</sub>	R	-----	10	μA	V <sub>R</sub> =5V
		G	-----	50		
		B	-----	50		

**Typical Electro-Optical Characteristics Curves (Blue)**



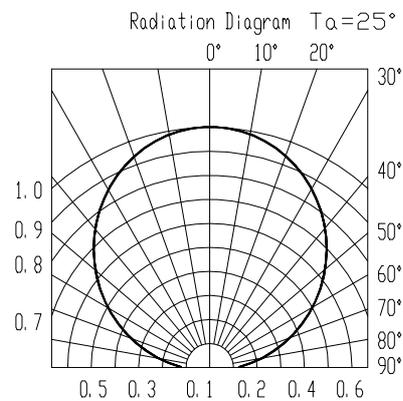
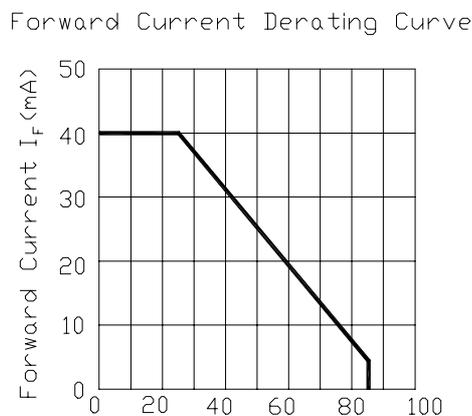
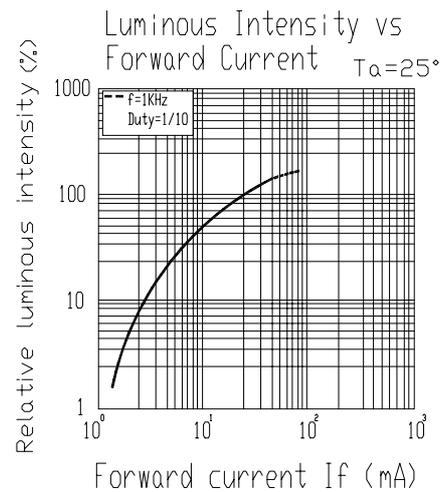
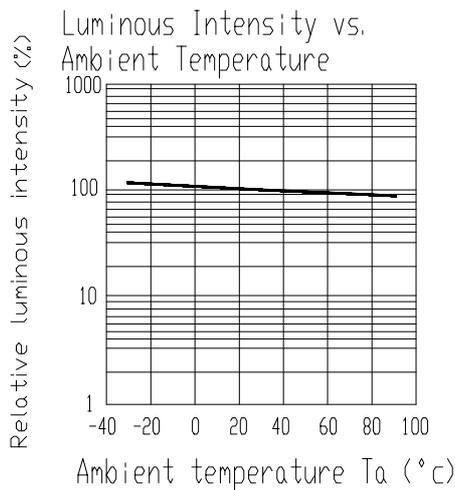
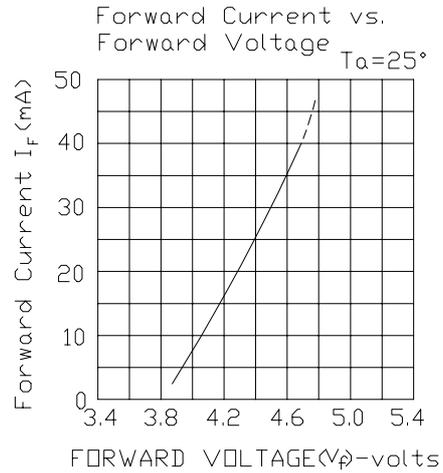
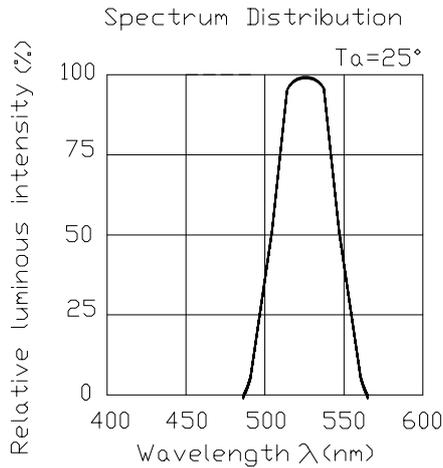
**61-23 RGBC/TR8**

**Typical Electro-Optical Characteristics Curves (Red)**



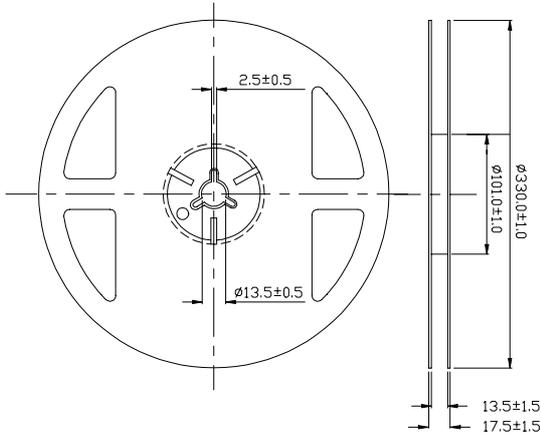
**61-23 RGBC/TR8**

**Typical Electro-Optical Characteristics Curves (Green)**

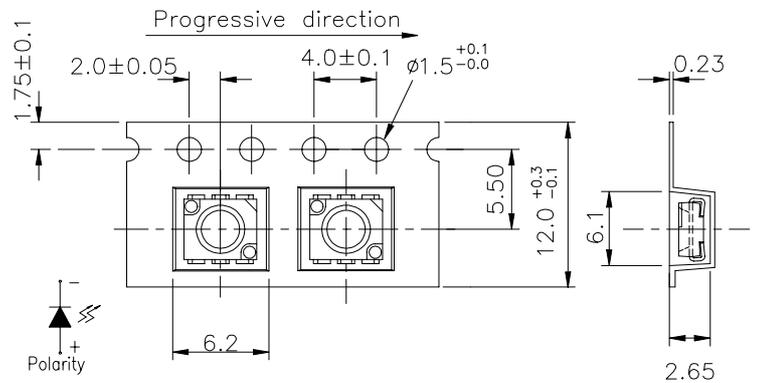


**61-23 RGBC/TR8**

**Reel & Carrier Tape Dimensions**



**Loaded quantity per reel 800 PCS/reel**



**Note:** The tolerances unless mentioned is  $\pm 0.1\text{mm}$  , Angle $\pm 0.5^\circ$  ,Unit = mm

**Label Form Specification**



CPN:

P/N:



QTY:



LOT NO: EL

CAT:

HUE:

REF:

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

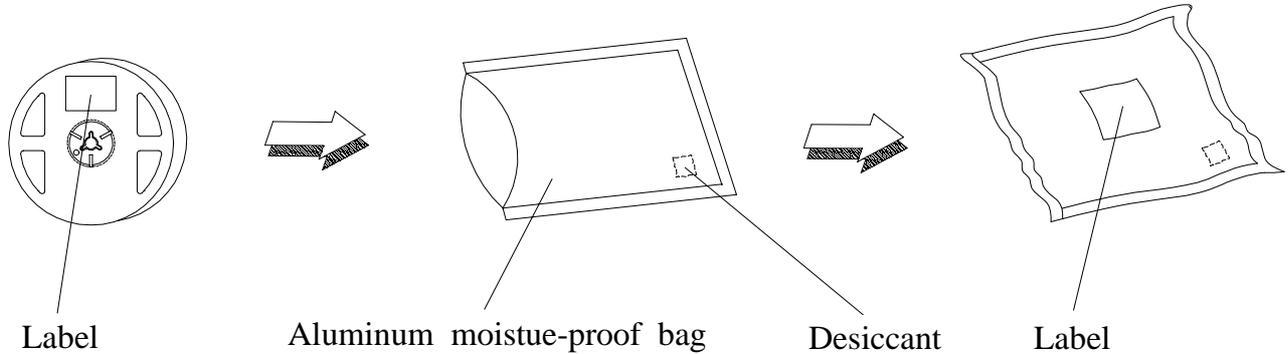
MADE IN TAIWAN: Production Place

MADE IN TAIWAN

**Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT 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 corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.

**Moisture Resistant Packaging**



**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	Temp. : 240°C ± 5°C Min. 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min § 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min § 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -55°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C /RH85%	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 ).

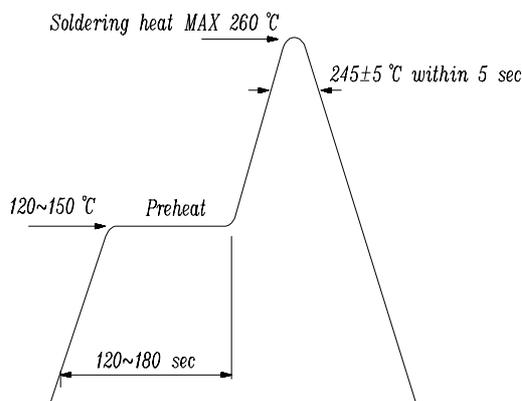
2. Storage time

2.1 The operation of Temperature and RH are : 5°C~35°C, RH60%.

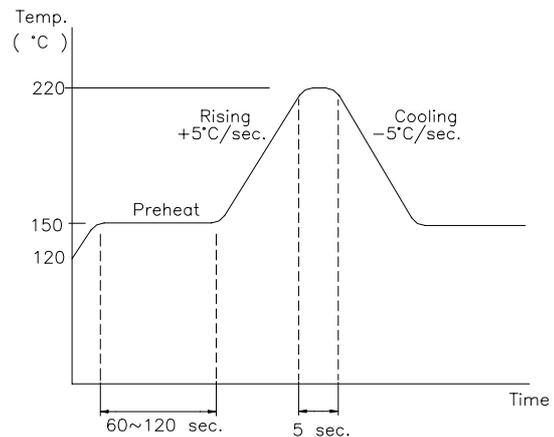
2.2 Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with descanting agent. Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere 5°C~35°C, RH 60%, they should be treated at 60°C± 5°C for 12hrs.

**Soldering Heat**



**Reflow Solder Test**

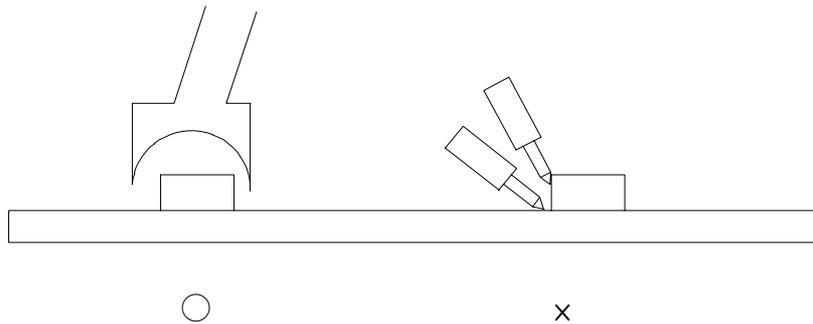


**Soldering Iron**

Basic spec is ≤5 sec when 260°C. If temperature is higher, time should be shorter (+10°C→-1sec). Power dissipation of Iron should be smaller than 15 W , and temperature should be controllable. Surface temperature of the device should be under 230 °C.

**Rework**

1. Customer must finish rework within 5 sec under 245°C.
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.



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