



Technical Data Sheet

White Chip LED With Right Angle Lens

27-21/W1D-ANPHY/3C

Features

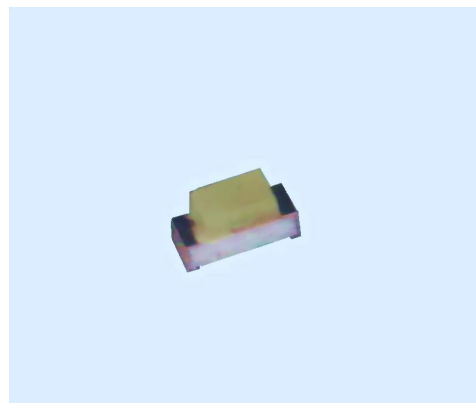
- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.

Descriptions

- The 27-21 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature applications. etc.

Applications

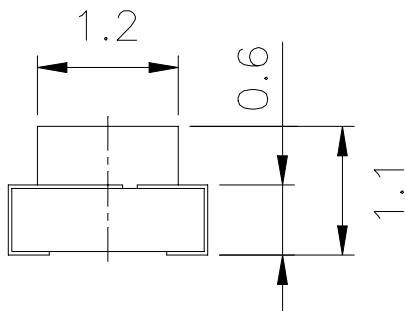
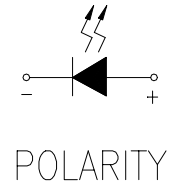
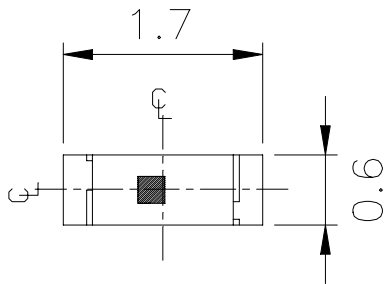
- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.



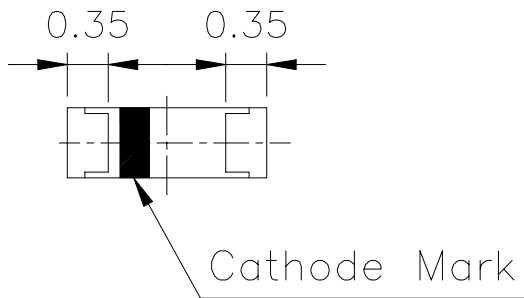
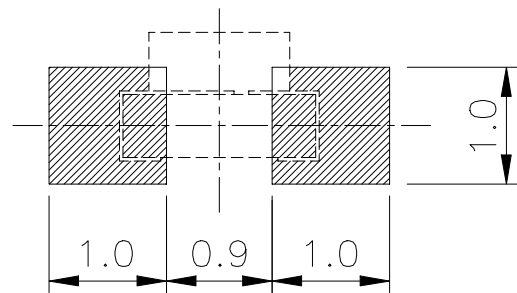
Device Selection Guide

Part No.	Chip		Lens Color
	Material	Emitted Color	
27-21/W1D-ANPHY/3C	InGaN	Pure White	Yellow Diffused

Package Outline Dimensions



For Reflow Soldering (propose)



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

27-21/W1D-ANPHY/3C
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	25	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	260 (for 5 seconds)	°C
Power Dissipation	P _d	110	mW
Electrostatic Discharge	ESD	150	V
Peak Forward Current (Duty 1/10 @1KHz)	I _F	100	mA

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	28.5	-----	72.0	mcd	I _F =5mA
		90.0	125	-----		I _F =20mA
Viewing Angle	2θ 1/2	-----	140	-----	deg	I _F =5mA
Forward Voltage	V _F	2.70	-----	3.15	V	I _F =5mA
Reverse Current	I _R	-----	-----	50	μA	V _R =5V

Bin Range Of Luminous Intensity & Forward Voltage

Symbol	Bin Code	Min.	Max.	Unit	Condition
I _v	N	28.5	45.0	mcd	I _F =5mA
	P	45.0	72.0		
V _F	15	2.70	2.85	V	I _F =5mA
	16	2.85	3.00		
	17	3.00	3.15		

Notes:
1.Tolerance of Luminous Intensity ± 10%
2.Tolerance of Forward Voltage ± 0.1V

Chromaticity Coordinates Specifications for Bin Grading

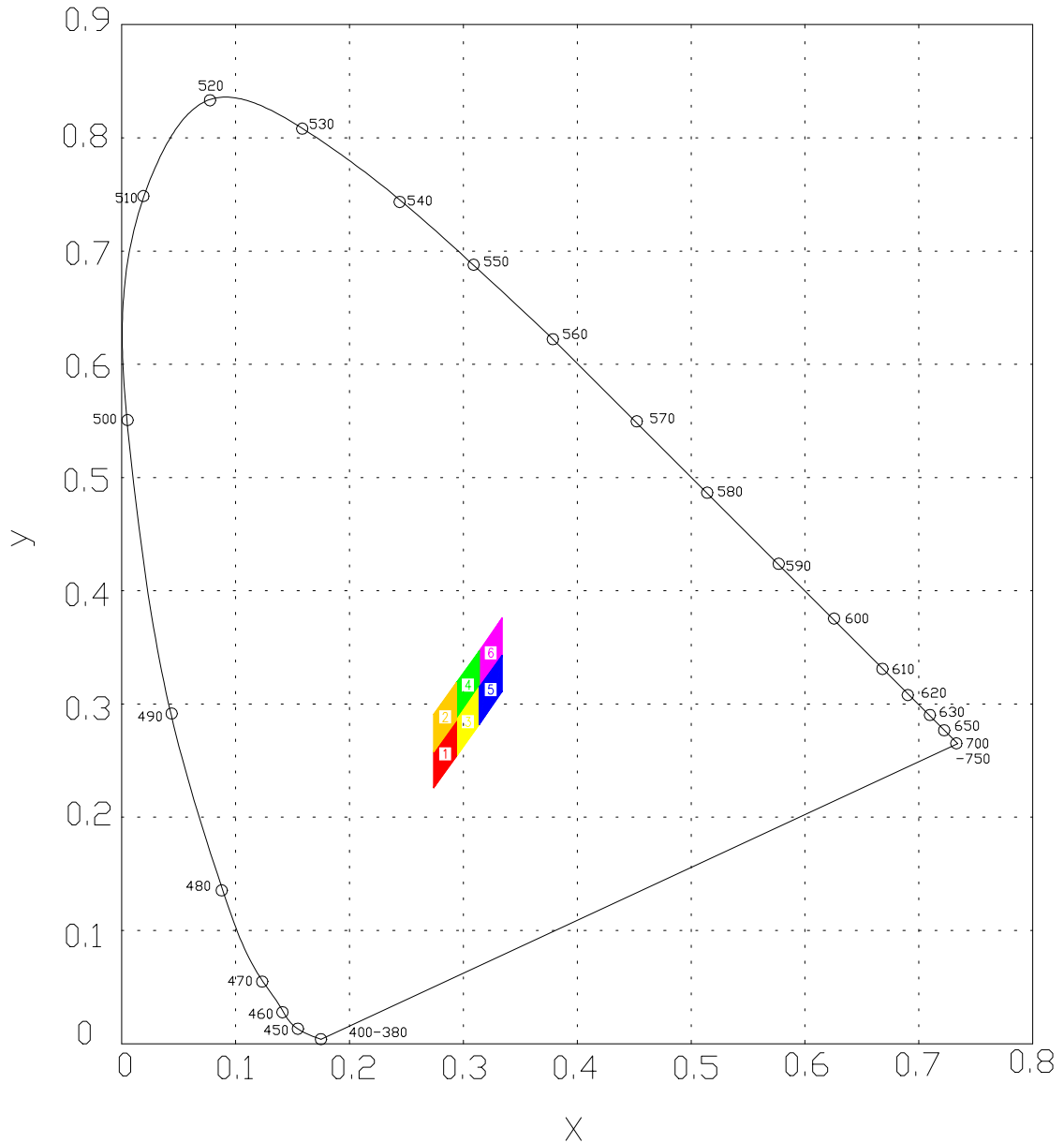
IF= 5mA

Groups	Bin Code	CIE_x	CIE_y
A	1	0.274	0.226
		0.274	0.258
		0.294	0.286
		0.294	0.254
	2	0.274	0.258
		0.274	0.291
		0.294	0.319
		0.294	0.286
	3	0.294	0.254
		0.294	0.286
		0.314	0.315
		0.314	0.282
	4	0.294	0.286
		0.294	0.319
		0.314	0.347
		0.314	0.315
	5	0.314	0.282
		0.314	0.315
		0.334	0.343
		0.334	0.311
	6	0.314	0.315
		0.314	0.347
		0.334	0.376
		0.334	0.343

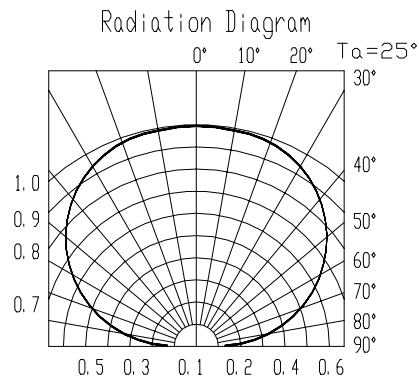
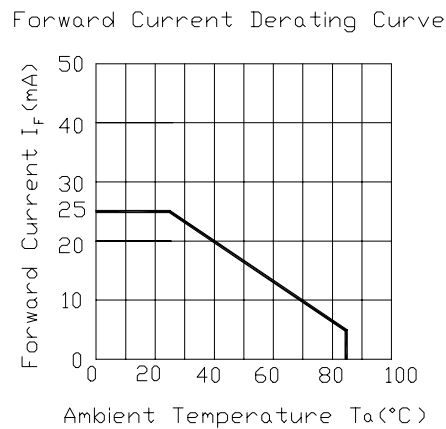
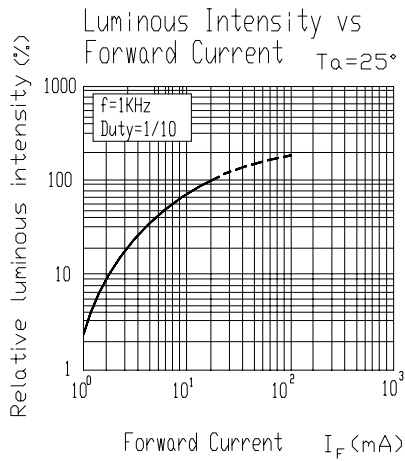
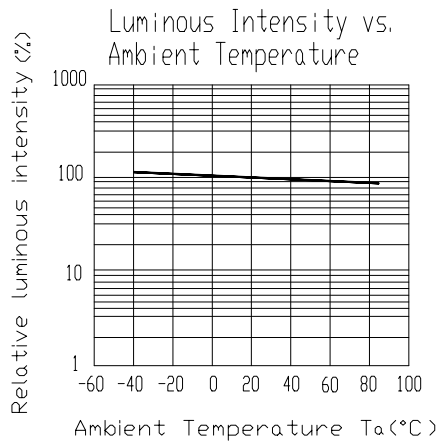
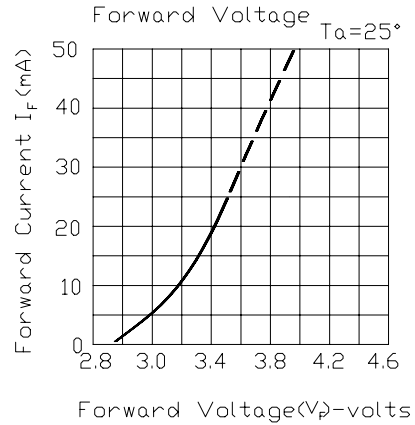
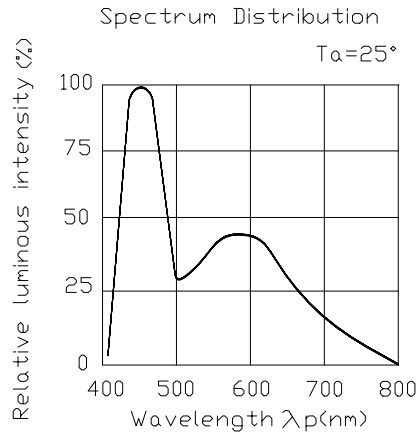
Notes:

- 1.The C.I.E. 1931 chromaticity diagram (Tolerance ± 0.01).
- 2.The products are sensitive to static electricity and care must be fully taken when handling products.

■ CIE Chromaticity Diagram

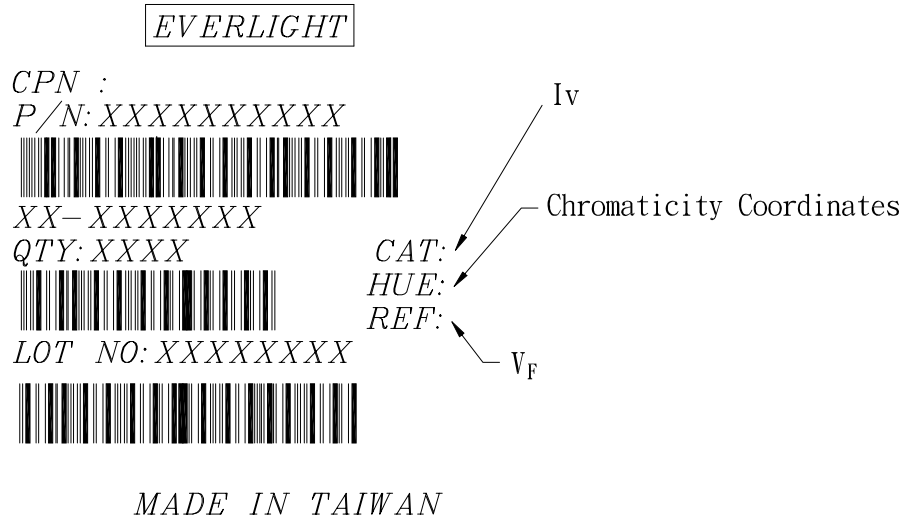


Typical Electro-Optical Characteristics Curves

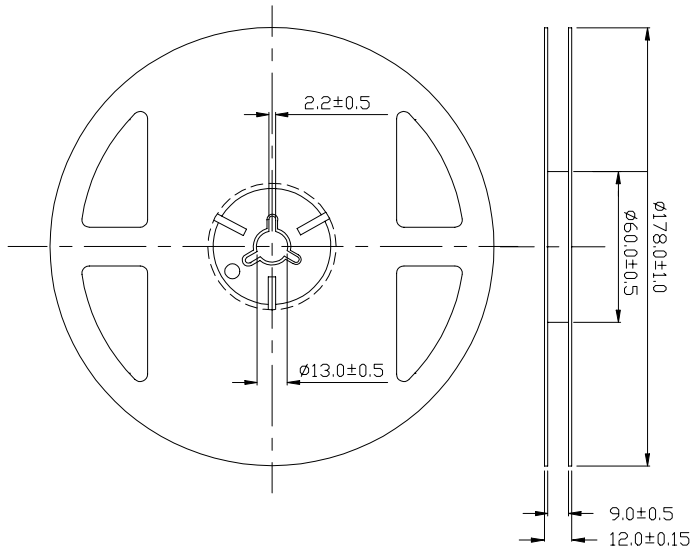


Label explanation

CAT: Luminous Intensity (mcd) **HUE:** Chromaticity Coordinates **REF:** Forward Voltage (V)



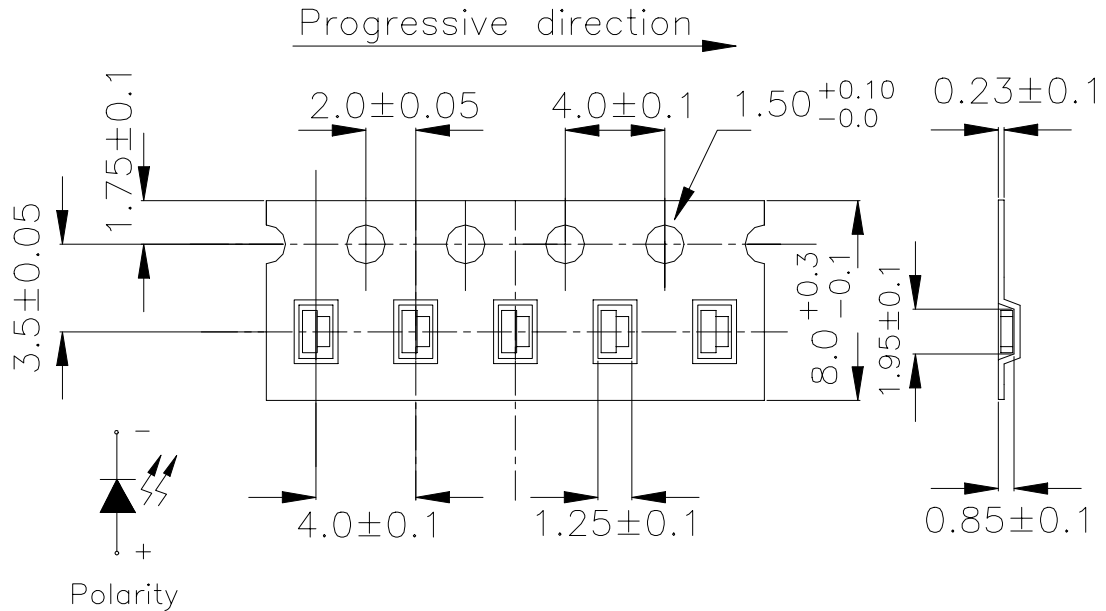
Reel Dimensions



Taping Quantity: 3000pcs

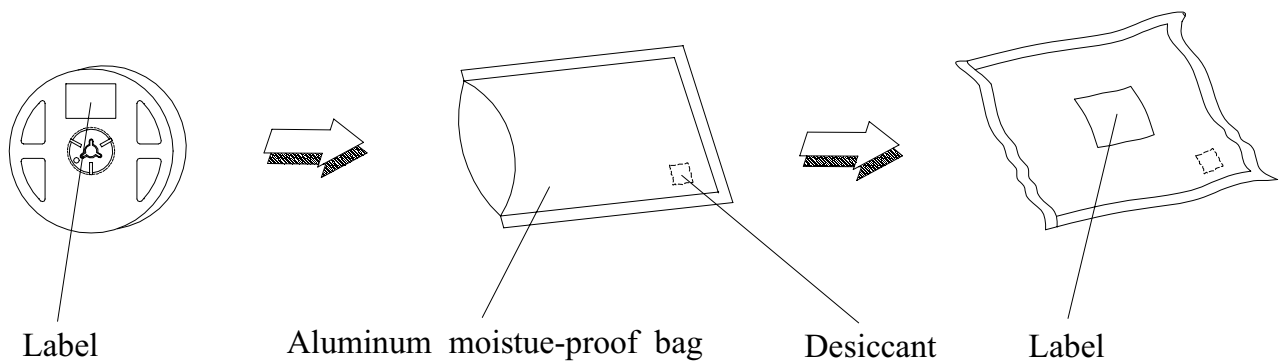
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$,Unit = mm

Carrier Tape Dimensions



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

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/Rc
1	Reflow	Temp. : 240°C ± 5°C Min. 5 sec.	5 sec.	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	I _F = 20 mA	1000 Hrs.	22 Pcs.	0/1
7	High Temperature / High Humidity	85°C/R.H85%	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

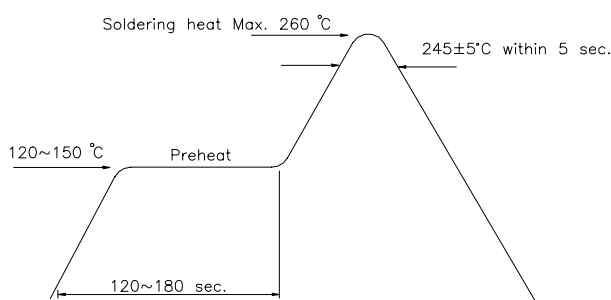
2.1 The operation of Temperature and RH are : 5°C~35°C, RH60%.

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).

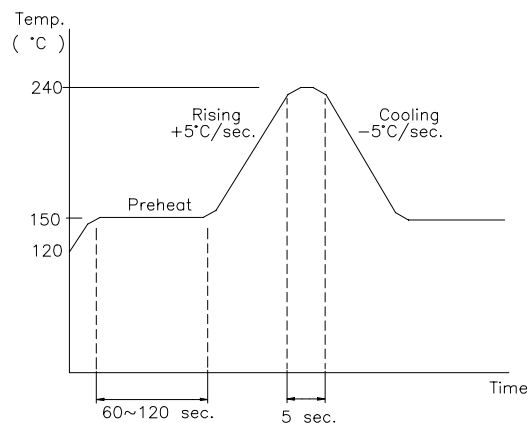
2.3 If opened more than one week in an atmosphere 5°C~35°C, RH 60%, they should be treated at 60°C± 5°C for 15hrs.

2.4 When you discover that the desiccant in the package has a pink color (Normal = blue) , you should treat them in the same conditions as 2.3.

Soldering heat



Reflow Temp / Time

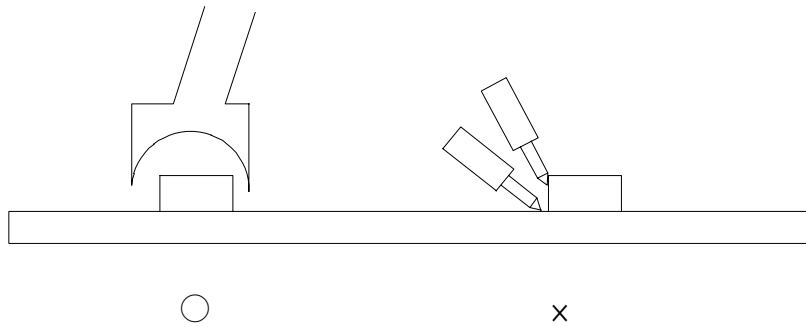


Soldering Iron

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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