

Technical Data Sheet (Preliminary)**Side View White LED (1.0mm)****99-21UWC/TR8****Features**

- Side view white LED.
- White SMT package.
- Lead frame package with individual 2 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.
- Feature of the device: more light due to higher optical efficiency; extremely wide viewing angle; ideal for backlighting and coupling in light guide.

Descriptions

- Due to the package design, 99-21 has wide viewing angle , low power consumption ideal for light guide application.

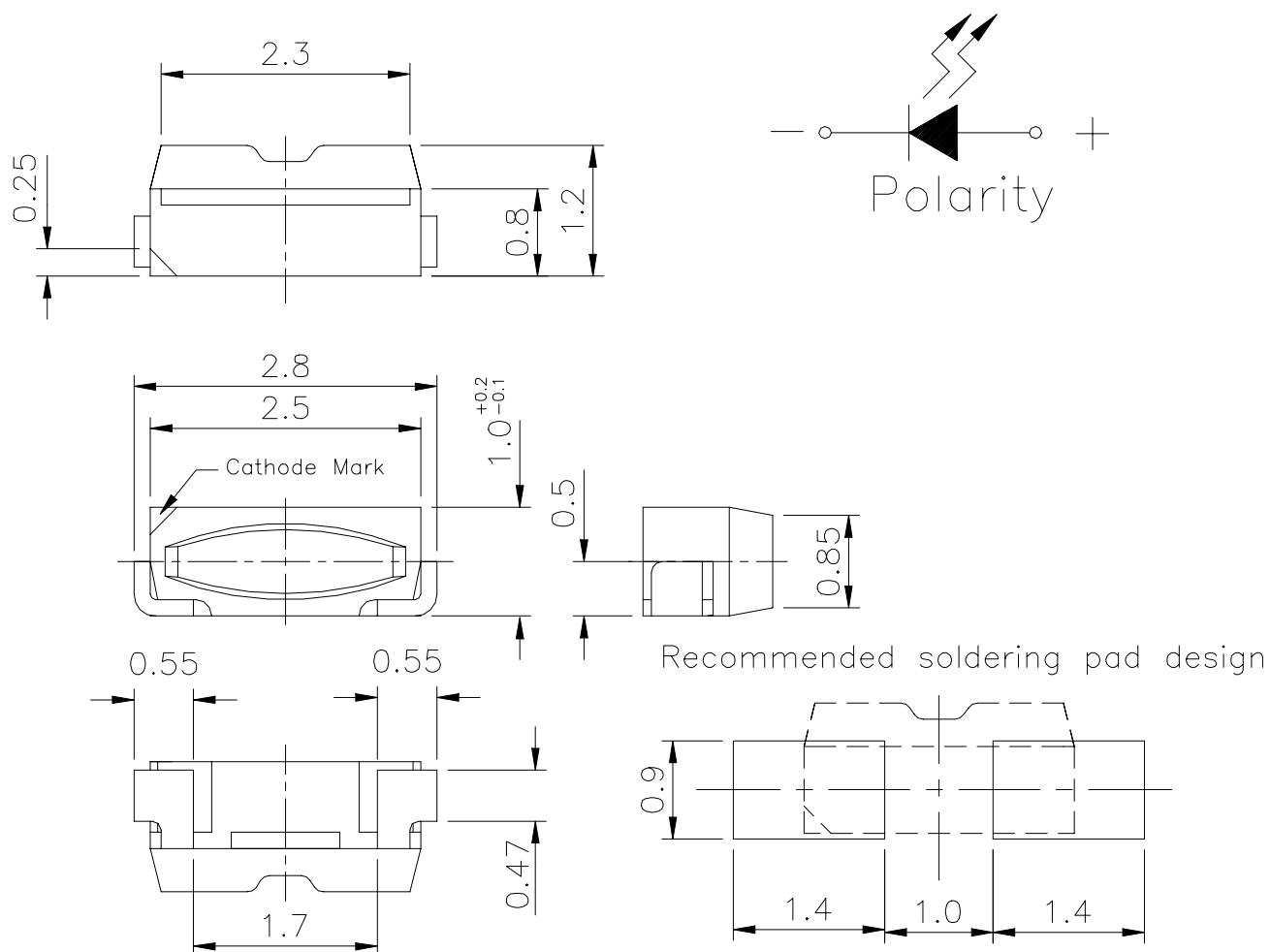
Applications

- Amusement equipment.
- PDA , Cell phone , Digital Camera backlight and light source.

**Device Selection Guide**

Chip		Lens Color
Material	Emitted Color	
InGaN	White	Water Clear

Package Dimensions



Notes: Tolerances Unless Dimension $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$,Unit = mm

Absolute Maximum Ratings (Ta=25°C)

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

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Rank	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _V	T	720	860	1000	mcd	I _F =20mA
		S	500	600	720		I _F =20mA
		R	360	430	500		I _F =20mA
Viewing Angle	2 θ 1/2	-----	-----	110	-----	deg	I _F =20mA
Forward Voltage	V _F	-----	-----	3.5	4.0	V	I _F =20mA
Reverse Current	I _R	-----	-----	-----	50	μ A	V _R =5V

*The luminous intensity data did not including ± 15% testing tolerance.

*Tolerance of forward voltage ± 0.1V.

The products are sensitive to static electricity and care must be fully taken when handling products.

Color Ranks

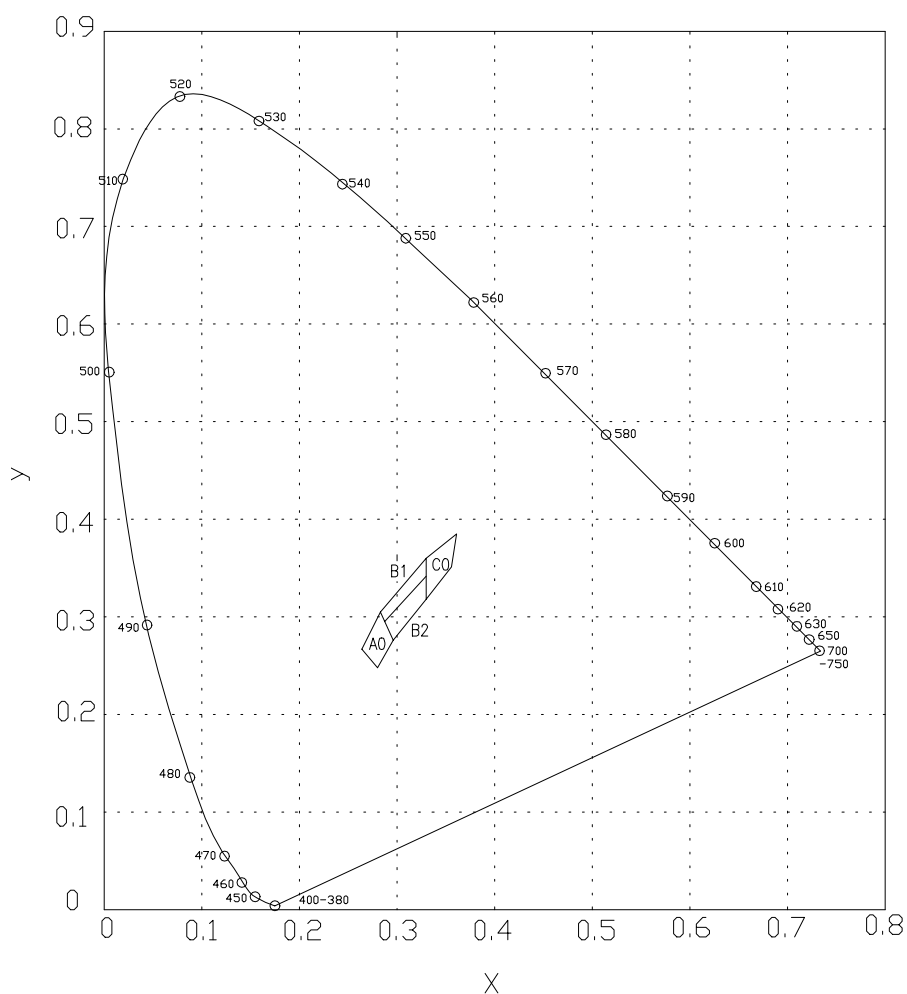
	Rank A0			
x	0.280	0.264	0.283	0.296
y	0.248	0.267	0.305	0.276

	Rank B1			
x	0.287	0.283	0.330	0.330
y	0.295	0.305	0.360	0.339

	Rank B2			
x	0.296	0.287	0.330	0.330
y	0.276	0.295	0.339	0.318

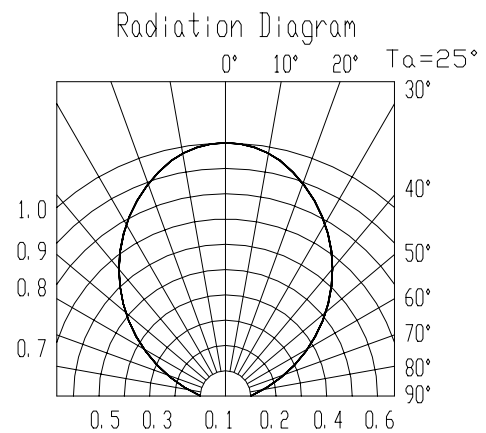
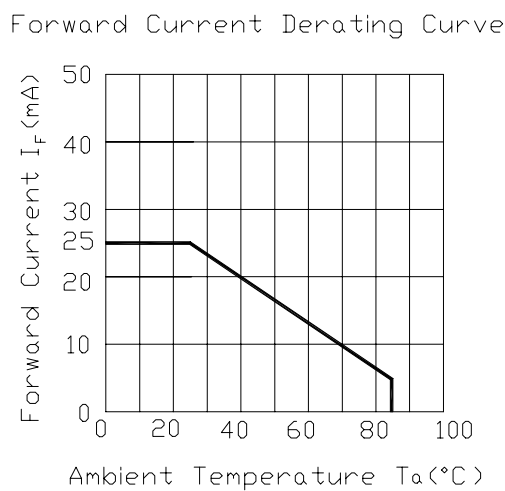
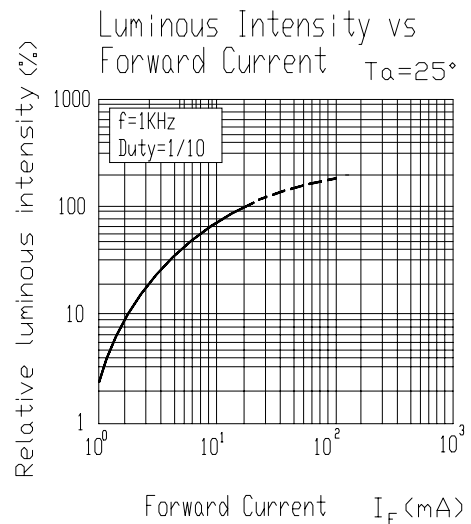
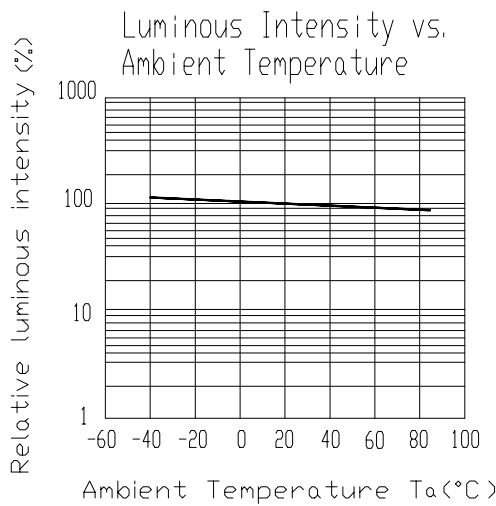
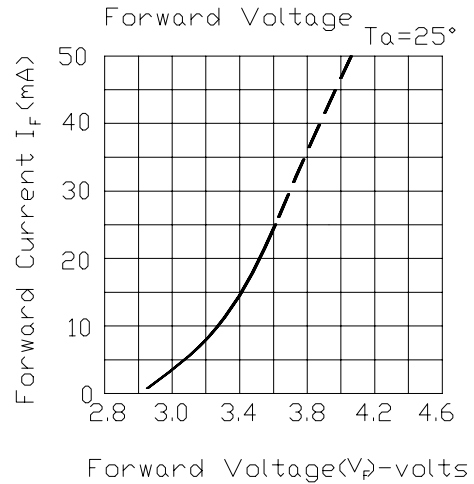
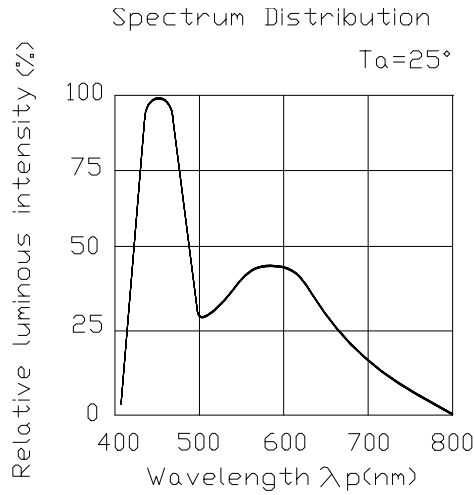
	Rank C0			
x	0.330	0.330	0.361	0.356
y	0.318	0.360	0.385	0.351

CIE Chromaticity Diagram



*The C.I.E. 1931 chromaticity diagram (Tolerance ± 0.01).

Typical Electro-Optical Characteristics Curves



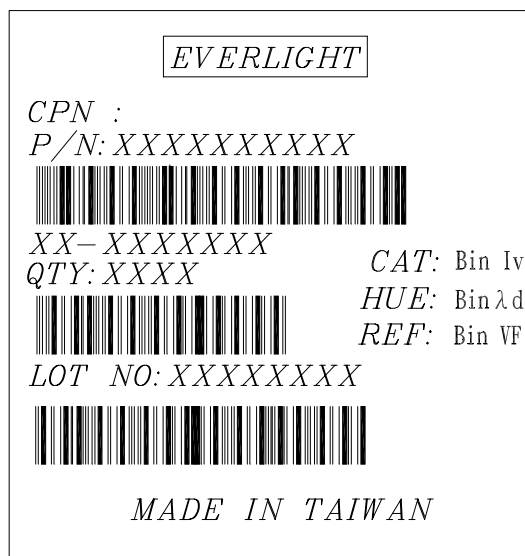
99-21UWCTR8

Label explanation

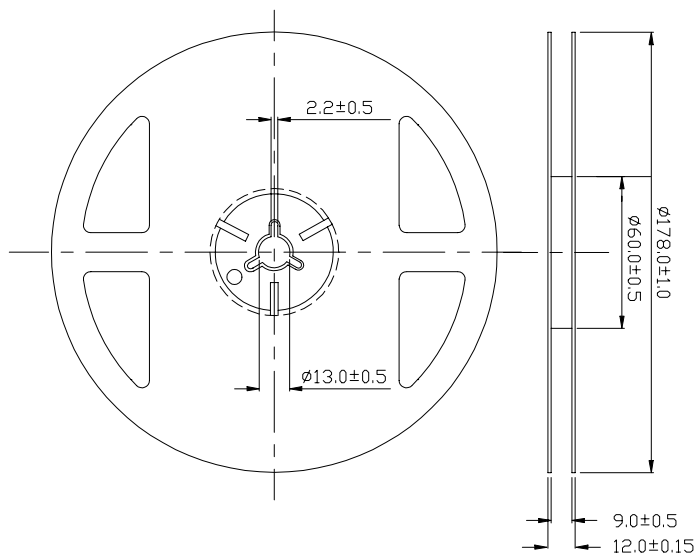
CAT: Luminous Intensity (mcd)

HUE: Dom. Wavelength (nm)

REF: Forward Voltage (V)

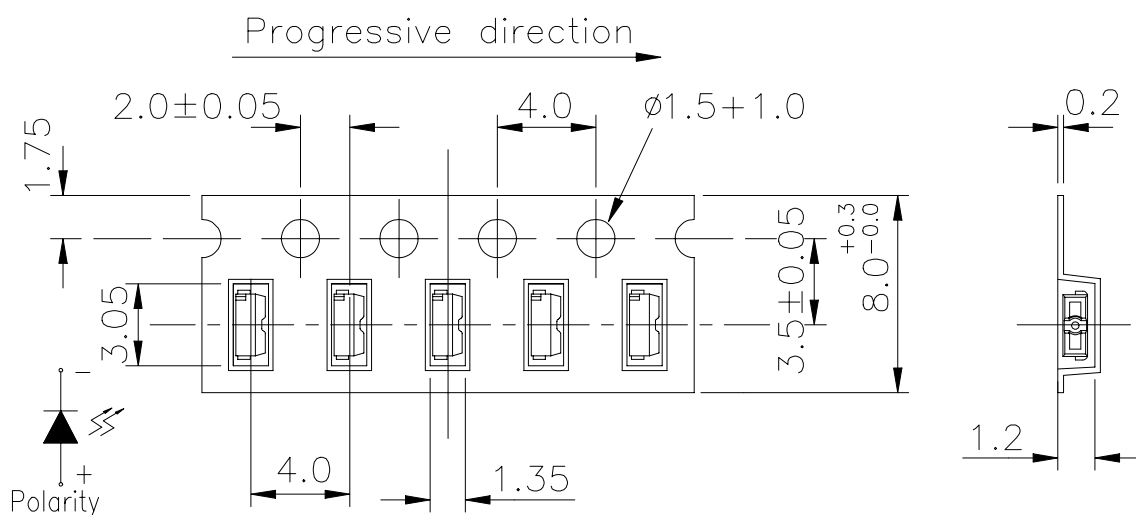


Reel Dimensions

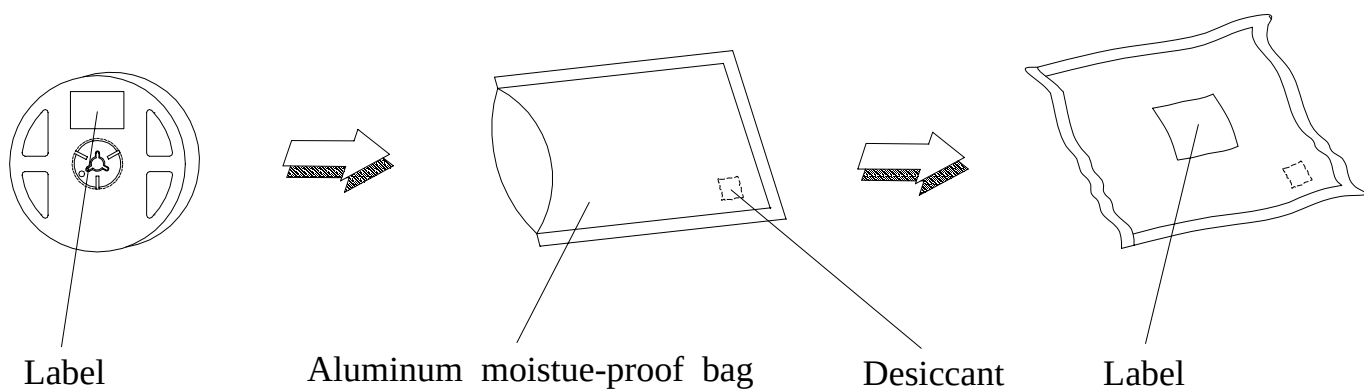


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$, Unit = mm

Carrier Tape Dimensions; Loaded quantity per reel 3500 PCS/reel



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	I _F = 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 : $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH60%.

2.2 Once the package is opened, the products should be used within a week.

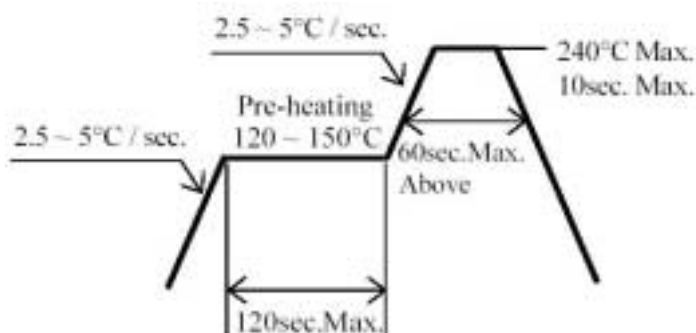
Otherwise, they should be kept in a damp proof box with descanting agent.

Considering the tape life , we suggest our customers to use our products within a year(from production date).

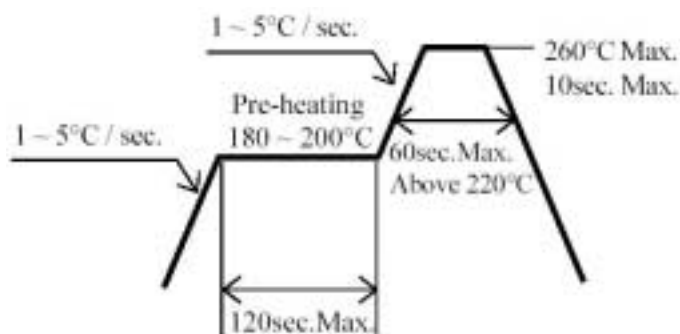
2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH 60%, they should be treated at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 12hrs.

Reflow Temperature Profile

1.Lead solder



2.Lead free solder

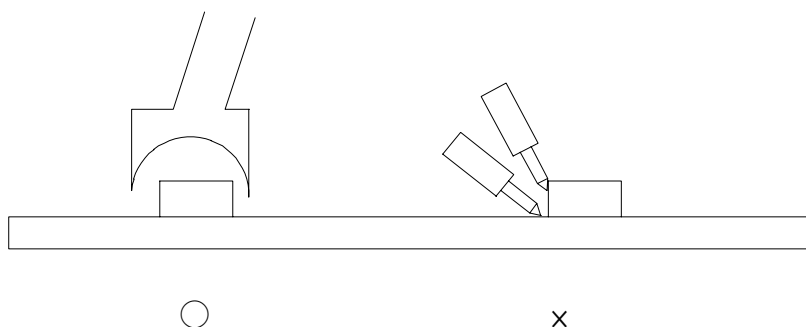


Soldering Iron

Basic spec is ≤ 5 sec when 260°C and only one time. If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). 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 and only one time.
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.



EVERLIGHT ELECTRONICS CO., LTD.

Office: No 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936

Fax: 886-2267-6244, 2267-6189, 2267-6306

<http://www.everlight.com>