PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO. 61L04002	REV. 1
		SHEET 1 OF 9	

Features

Package: 1.6x0.8x0.6mm(0603) standard package

Feature of the device: extremely wide viewing angle; ideal for backlighting and coupling in light guides

Wavelength: , 610nm(orange),570nm(Yellow green)

Viewing angle: Extremely Wide(130°)

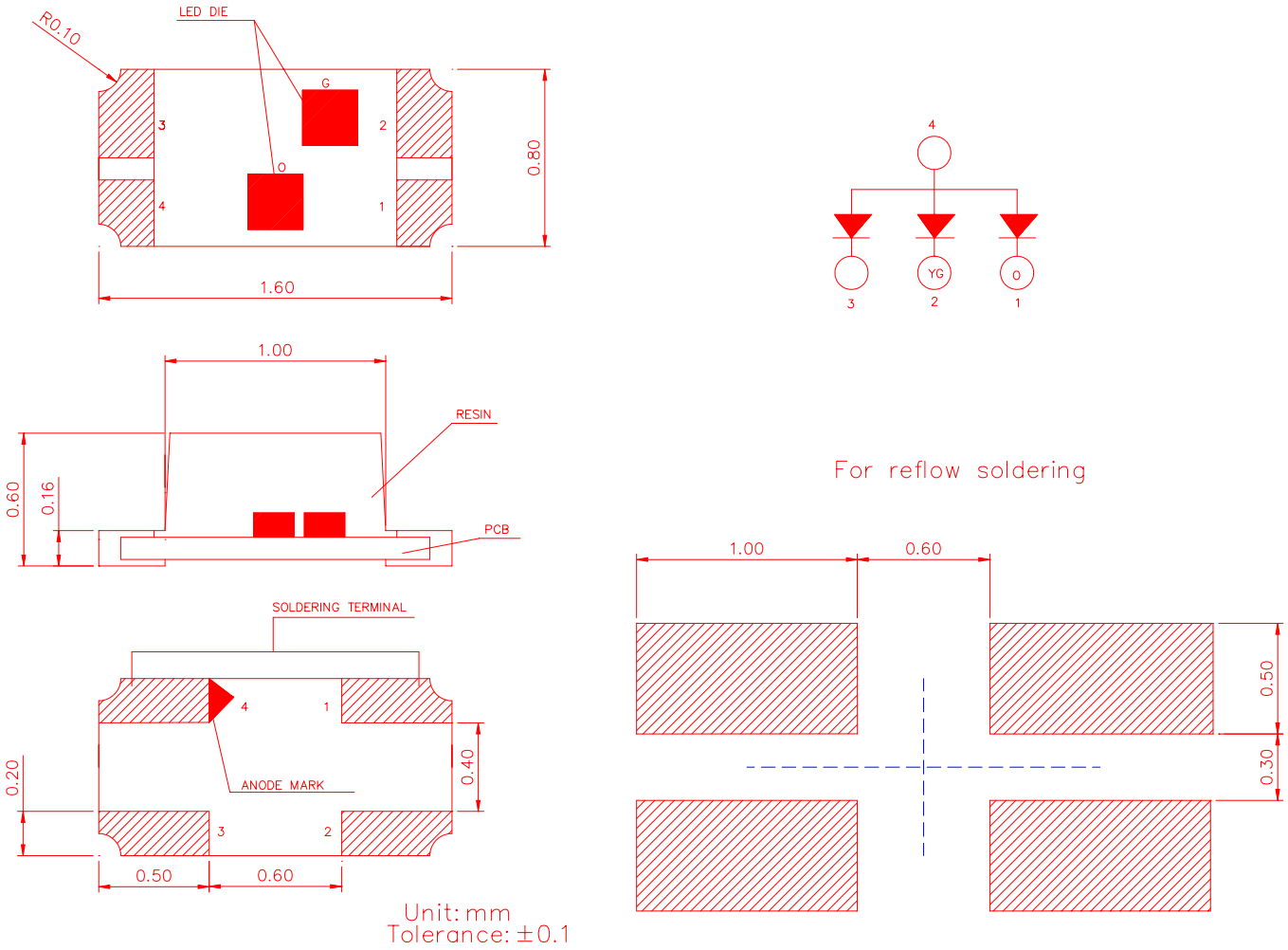
Grouping parameter: luminous intensity

Assembly methods: suitable for all SMT assembly methods

Soldering methods: IR reflow soldering

Taping: Package in 8mm tape on 7” diameter reel

Package Dimensions



PRODUCT SPECIFICATION

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		SHEET 2 OF 9	

Absolute Maximum Ratings

At Ta = 25˚C

Parameter	KL-195W02		Unit
Power Dissipation	O	YG	mW
	72	72	
Peak Forward Current	100		mA
(1/10 Duty Cycle, 0.1ms Pulse Width)			
Forward Current	30		mA
Reverse Voltage	5		V
Operating Temperature Range	-25˚C ~+ 80˚C		
Storage Temperature Range	-30˚C ~+ 85℃		
Wave Soldering Condition	240˚C For 10 Seconds		

PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO. 61L04002	REV. 1
		SHEET 3 OF 9	

Electrical & Optical Characteristics

At Ta = 25˚C

Parameter		Symbol	PART NO	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	Orange	Iv	KL-195W02	10	30	-	mcd	IF = 20mA Note 1
	Yellow Green			6	15	-		
Viewing Angle		2θ 1/2	Orange / Yellow Green	-	130	-	deg	Note 2
Dominant Wavelength		λd	Orange	-	610	-	nm	IF = 20mA Note 3
			Yellow Green	-	570	-		
Spectral Line Half-Width		Δλ	Orange	-	20	-	nm	-
			Yellow Green	-	20	-		
Forward Voltage		VF	Orange	-	2.1	2.5	V	IF = 20mA
			Yellow Green	-	2.2	2.6		
Reverse Current		Ir	Orange / Yellow Green	-	-	100	μA	VR = 5V

Note :

1. Luminous intensity is measured with a photo detector and filter combination that follows the CIE ete - response curve. And the equipment measured luminous intensity torellance is ±5%.
2. θ1/2 is the off - axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength, λd is derived from the CIE chromaticity diagram and represents the color of the device.
4. Caution in ESD:Static Electricity maybe cause damages to the LED. It is recommend to use a wrist band oranti - electrostatic glove when handing the LED. All devices, equipment and machinery must be properly grounded.

PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO. 61L04002	REV. 1
		SHEET 4 OF 9	

The Reliability criteria of SMD LED

Item	Symbol	Test Condition	Limit	
			Min	Max
Forward Voltage	VF	IF=10mA	–	U.S.L*1.2
Reverse Current	IR	VR=5V	–	U.S.L*2.0
Power	PO	IF=10mA	L.S.L*0.7	–

*U.S.L: Upper Standard Level
*L.S.L: Lower Standard Level

Results of Reliability Test

NO	Item	Test Condition	Test Hours/Cycles	Sample NO	Ac / Re
1	Temperature Cycle	H:+100℃ 30min ∫ 5min L: -40℃ 30min	100CYCES	11 PCS	0 / 1
2	High Temperature Storage	Temp : 100℃	500HRS	11 PCS	0 / 1
3	Low Temperature Storage	Temp : -40℃	500HRS	11 PCS	0 / 1
4	DC Operating Life	IF: 20mA	500HRS	11 PCS	0 / 1
5	High Temperature / High Humidity	60℃ / 90% RH	500HRS	11 PCS	0 / 1

PRODUCT SPECIFICATION

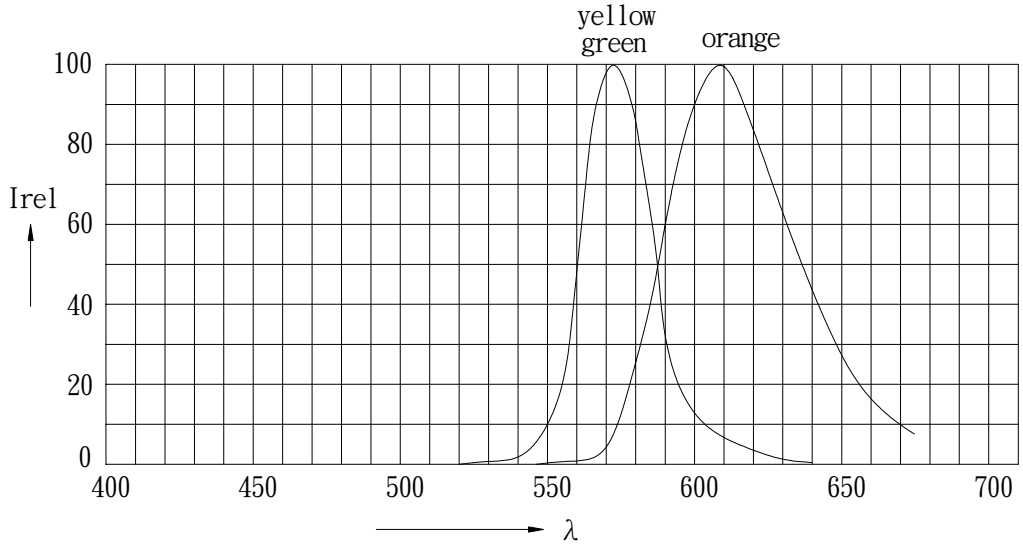
DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO.61L04002	REV. 1
		SHEET 5 OF 9	

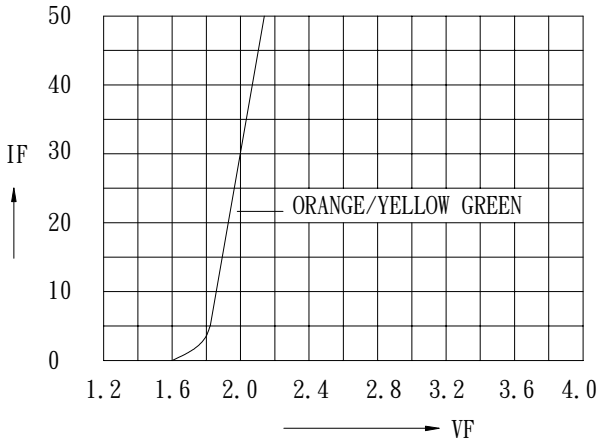
Typical Electro-Optical Characteristics Curves

Relative spektrale Emission Irel=f(λ),Ta=25℃,IF=10mA

V(λ)=Standard eye response curve

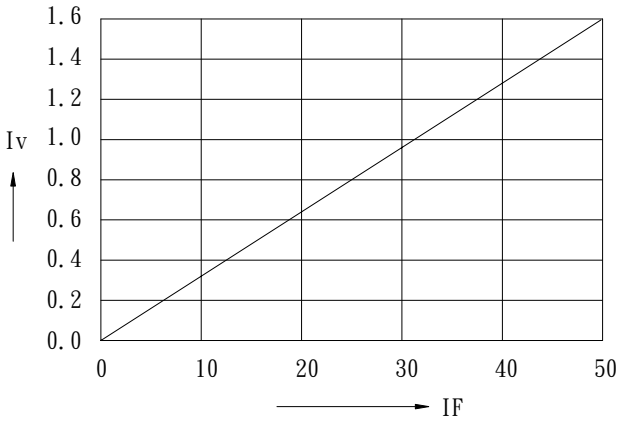


Forward Current I_F=f(V_F),TA=25℃



Relative Luminous Intensity Iv/Iv(10mA)=f(I_F)

TA=25℃

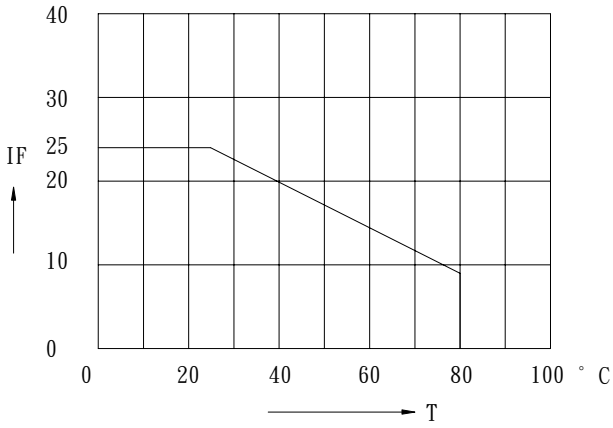


PRODUCT SPECIFICATION

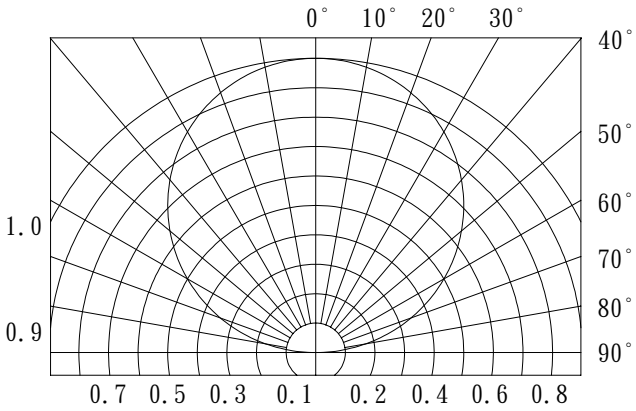
DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO. 61L04002	REV. 1
		SHEET 6 OF 9	

Max. Permissible Forward Current I_F=f(Ta)

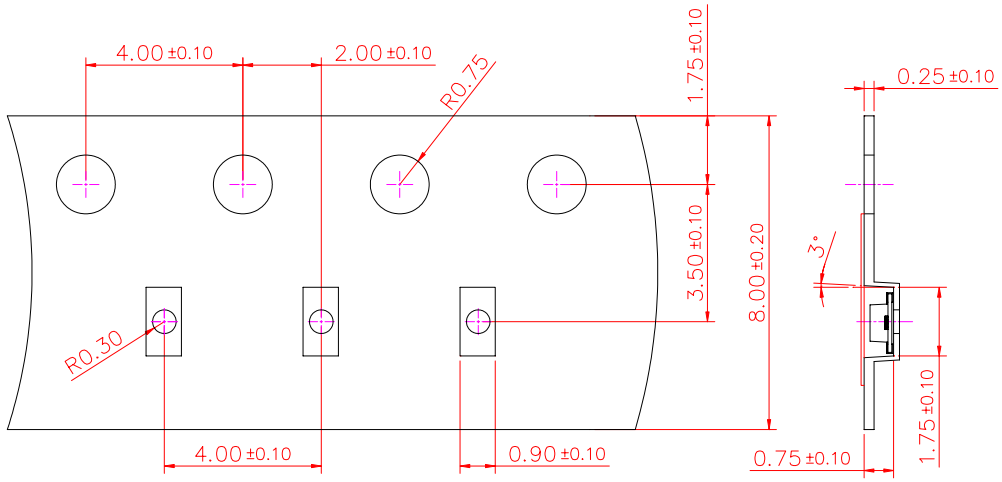


Radiation Characteristic I_{rel}=f(ϕ)



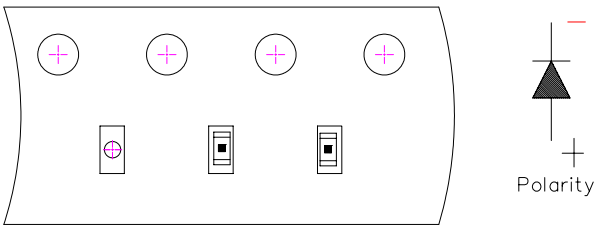
Method of Taping / Polarity and Orientation

Packing unit 3000/reel

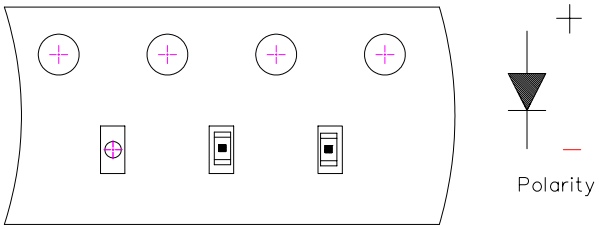


Unit : mm

Direction



U: Taping upward



D: Taping downward

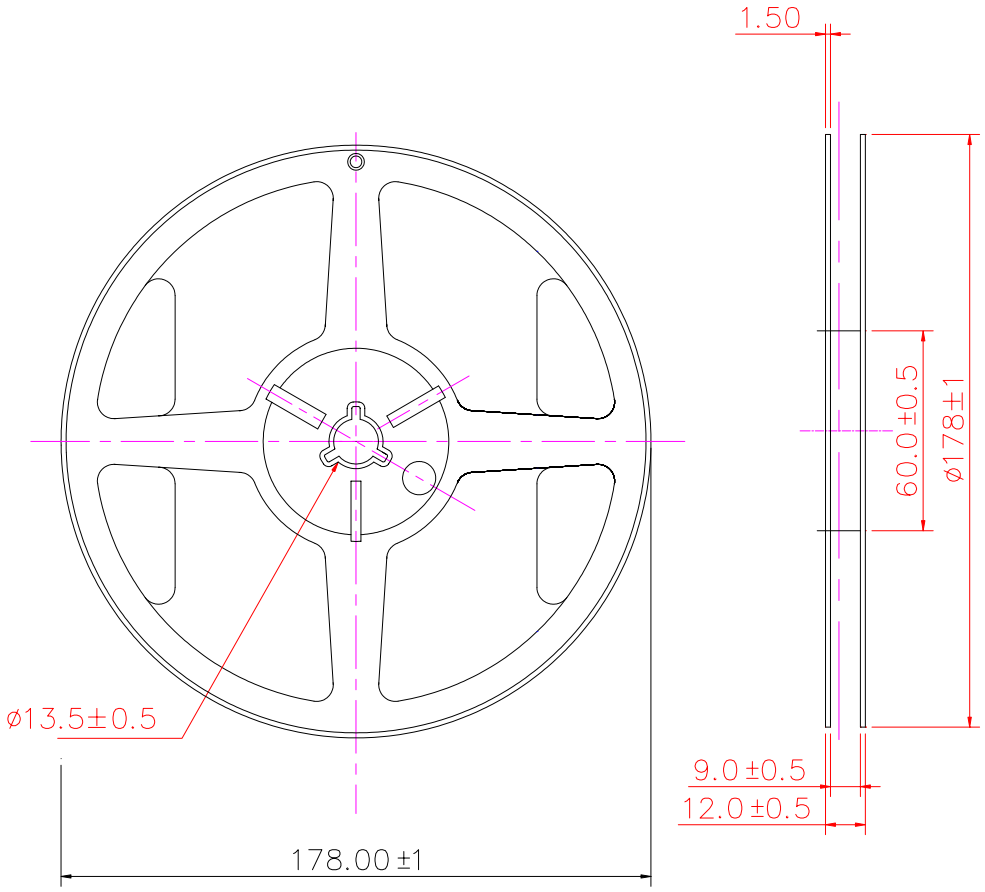
Notes: All dimensions are in millimeters (inches)

PRODUCT SPECIFICATION

DATE: 05/20/2004

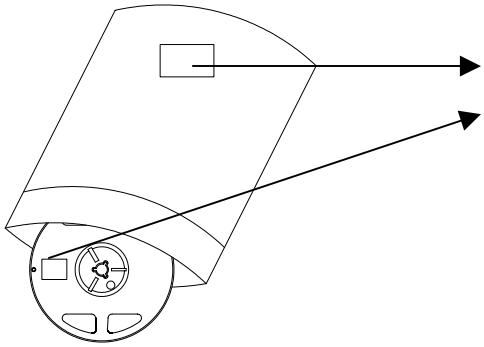
cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO. 61L04002	REV. 1
		SHEET 7 OF 9	

Package Dimensions of Reel



Unit: mm

Packaging



Product lable

CUSTOMER:
CUSTOMER P/N:
DEVICE TYPE:
BIN:
COLOR RANK:
LOT NO:
QTY:

CAUTION: After open the aluminum laminate bag the lamps should be storage in the Follow condition

Temperautre:5 to 30 ℃,Humidity:70%,Storage time:72hrs max

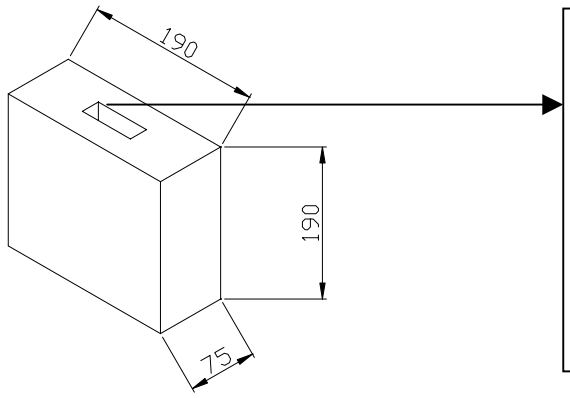
Backing condition :If backing is necessary , we recommended the backing condition is 60 +/- 5℃ 10hours

PRODUCT SPECIFICATION

DATE: 05/20/2004

cosmo ELECTRONICS CORPORATION	SMD LED : KL195W02	NO. 61L04002	REV. 1
		SHEET 8 OF 9	

Packing



CUSTOMER:
CUSTOMER P/N:
DEVICE TYPE:
BIN:
COLOR RANK:
LOT NO:
QTY:

Cautions for use

Over-current-proof

Customer must apply resistors for protection ,others slight voltage shit will cause big current change (Burn out will happen).

Storage time

The operation of temperature and RH are : 5℃~35℃,RH60%.

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)

If opened more than one week in an atmosphere 5℃~35℃ , RH60% , they should be treated at 60℃ ±5℃ for 15 hrs.

COSMO-Innotek will not be held responsible for any damage to the user that may result from accidents or any other reasons during operation of the user's unit if use to exceed the absolute maximum ratings, or not keep the matters that demand special attention.

PRODUCT SPECIFICATION

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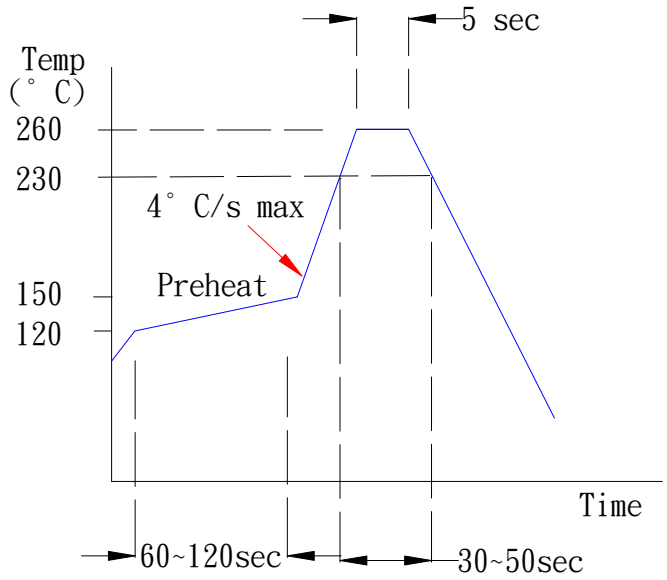
		SHEET 9 OF 9	

Others

Soldering Heat Reliability

Available for Pb free soldering process

Please refer to the following figure :



Soldering Iron

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

Rework

Customer must finish rework within 5sec under 245℃.

The head of Iron can not touch copper foil.

Twin-head type is preferred.