



PART NO.: 12-22 SDRUGC/S530-A2/TR8 Device Number : DSE-122-026 REV. 1.0

Right Angle Lens Chip LEDs with Bi-Color(Multi-Color)

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Features :

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

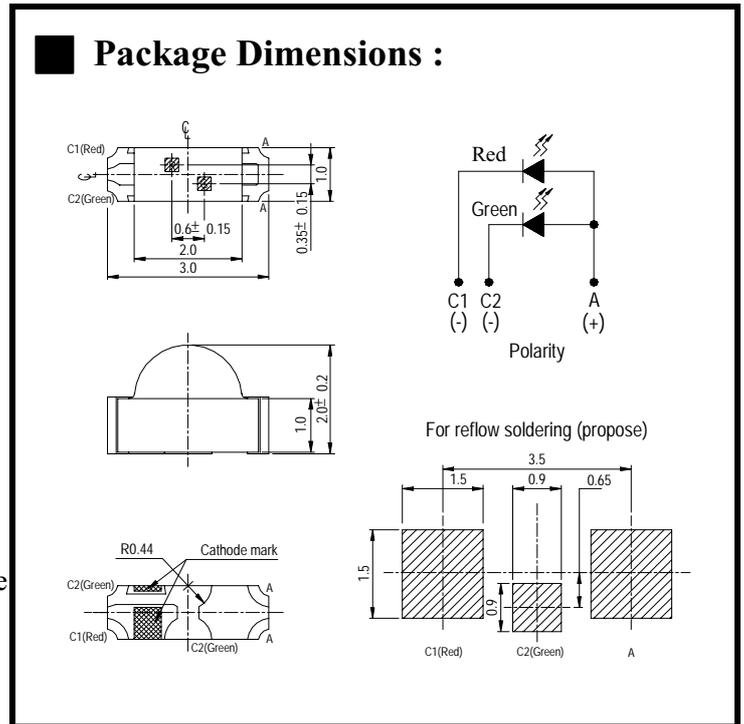
Descriptions:

- The 12-22 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.



Notes :

Tolerances Unless Dimension $\pm 0.1\text{mm}$

Angle ± 0.5

Unit = mm

PART NO.	Chip		Lens Color
	Material	Emitted Color	
12-22SDRUGC/S530-A2/TR8	SDR:	AlGaInP	Water Clear
	UG:	GaP	

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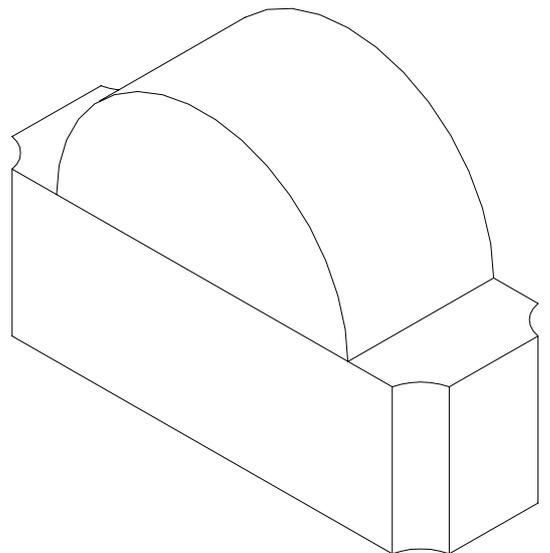
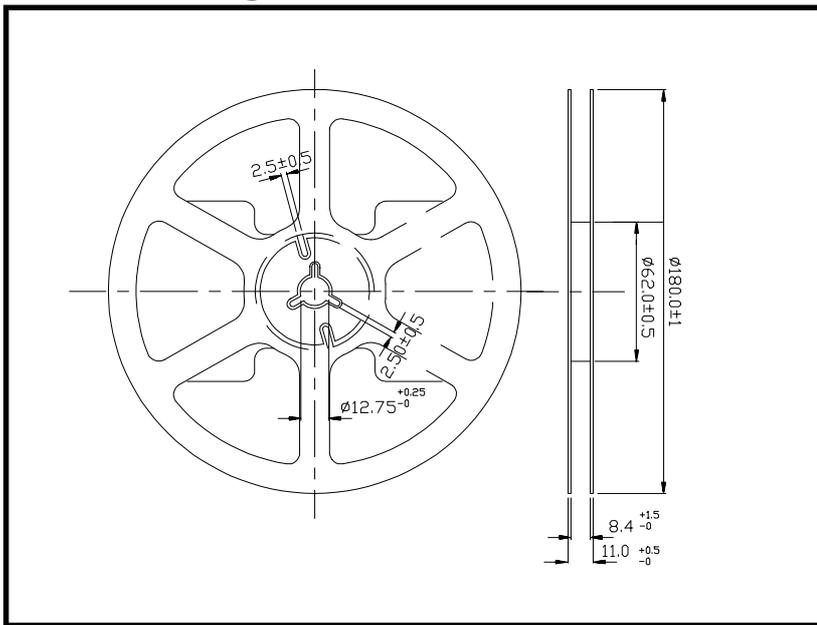
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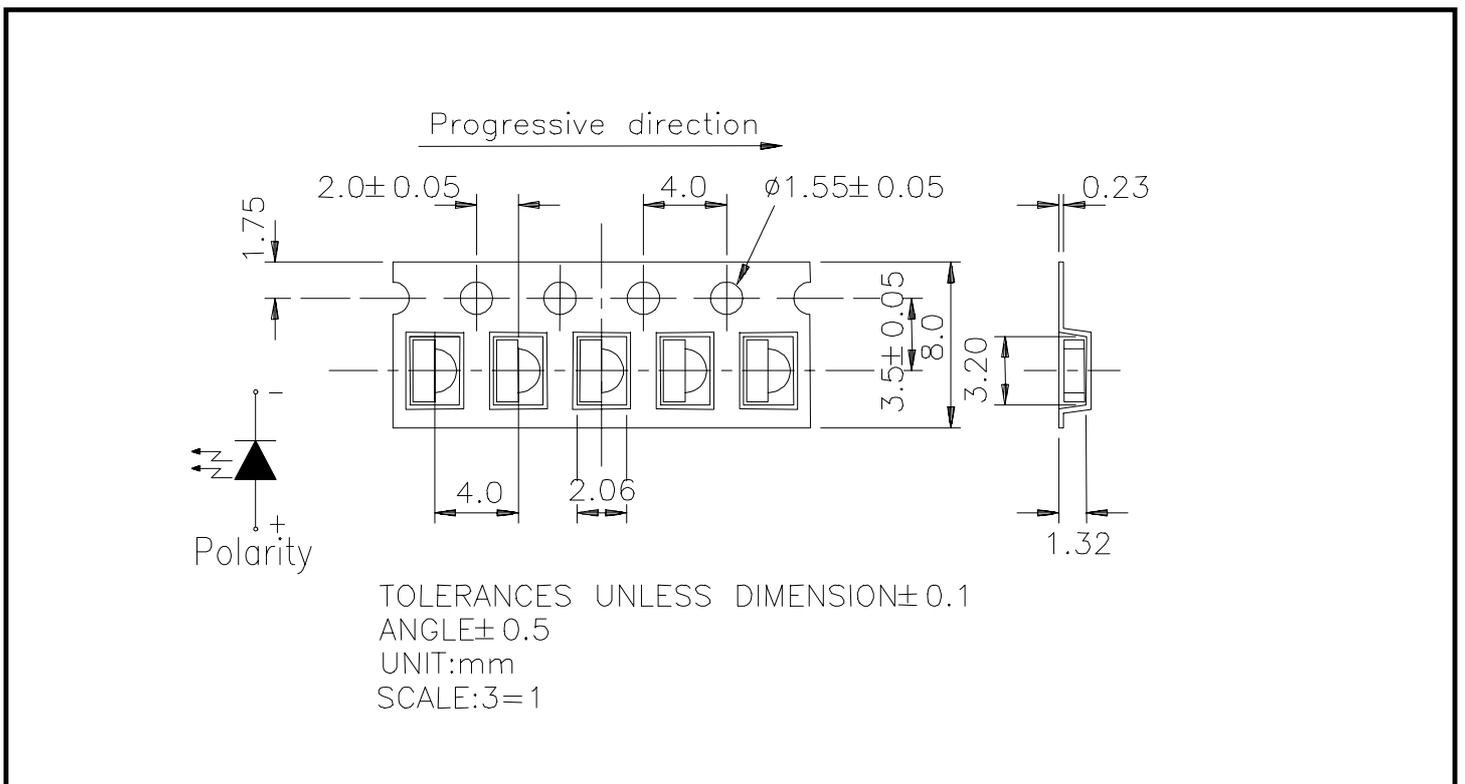
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■ Package Dimensions :



■ Loaded quantity per reel 2000 PCS/reel :





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■ Absolute Maximum Ratings at Ta = 25°C:

Parameter	Symbol	Rating	Unit
Reverse Voltage	VR	5	V
Forward Current	IF	SDR: 25 UG: 30	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	260 (for 5 second)	°C
Power Dissipation	Pd	SDR: 60 UG: 100	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	IF(Peak)	SDR: 160 UG: 160	mA



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■ **Electronic Optical Characteristics :**

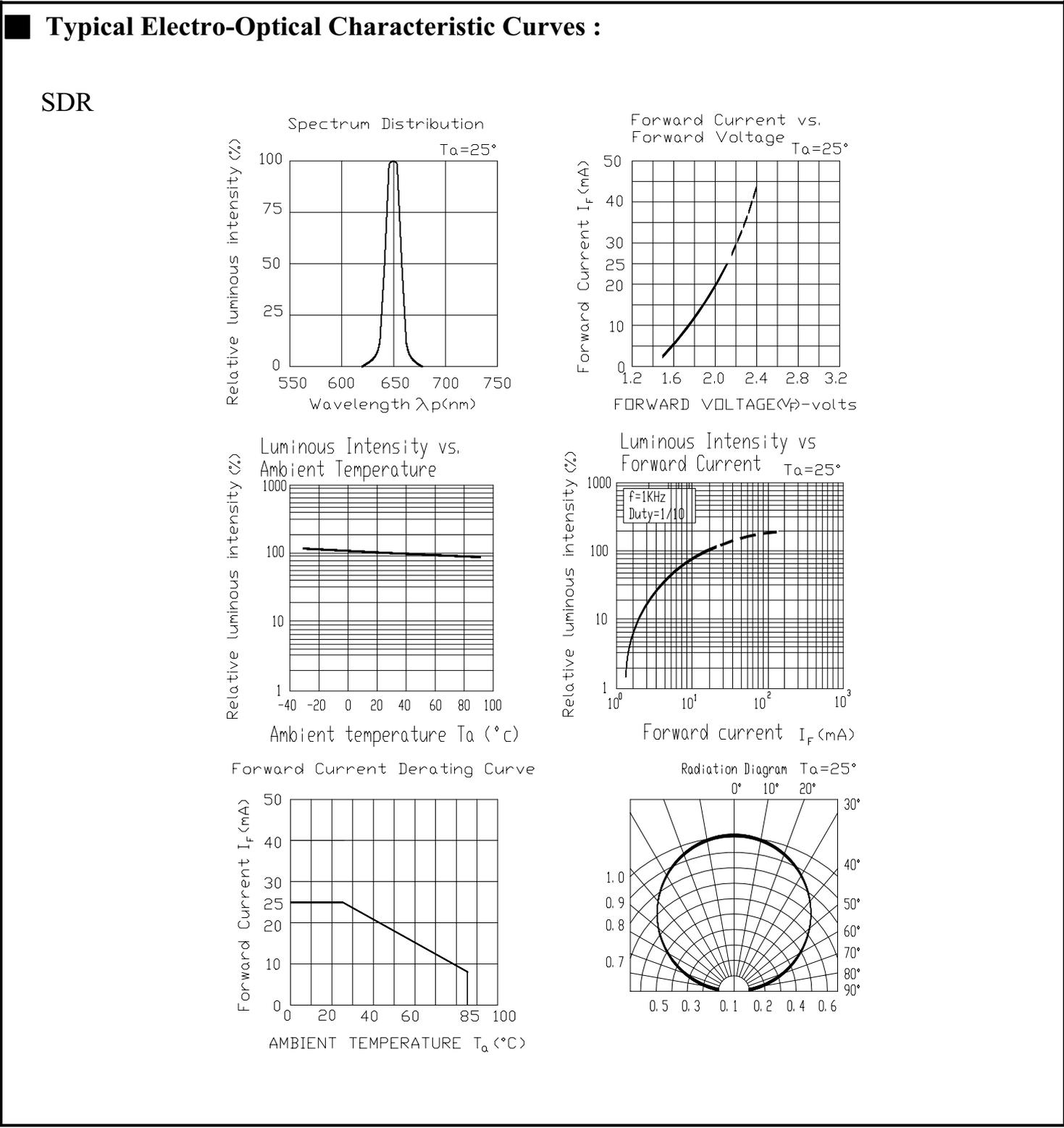
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v SDR:	-----	2	-----	mcd	I _F =2mA
		UG:	1	-----		
	SDR:	17	30	-----		I _F =20mA
		UG:	9	16		
Viewing Angle	2θ 1/2	-----	120	-----	deg	I _F =20mA
Peak Wavelength	λ _p SDR:	-----	650	-----	nm	I _F =20mA
		UG:	570	-----		
Dominant Wavelength	λ _d SDR:	-----	639	-----	nm	I _F =20mA
		UG:	571	-----		
Spectrum Radiation Bandwidth	Δλ SDR:	-----	20	-----	nm	I _F =20mA
		UG:	30	-----		
Forward Voltage	V _F SDR:	-----	2.0	2.4	V	I _F =20mA
		UG:	1.7	2.1		
Reverse Current	I _R	-----	-----	10	μA	V _R =5V



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Typical Electro-Optical Characteristic Curves :

UG

Spectrum Distribution $T_a=25^\circ$

Relative luminous intensity (%)

Wavelength λ_p (nm)

Forward Current vs. Forward Voltage $T_a=25^\circ$

Forward Current I_f (mA)

FORWARD VOLTAGE(V)-volts

Luminous Intensity vs. Ambient Temperature

Relative luminous intensity (%)

Ambient temperature T_a ($^\circ\text{C}$)

Luminous Intensity vs Forward Current $T_a=25^\circ$

Relative luminous intensity (%)

Forward current I_f (mA)

F=1KHz
Duty=1/10

Forward Current Derating Curve

Forward Current I_f (mA)

AMBIENT TEMPERATURE T_a ($^\circ\text{C}$)

Radiation Diagram $T_a=25^\circ$

0° 10° 20°

30° 40° 50° 60° 70° 80° 90°



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Reliability Test Items And Conditions:

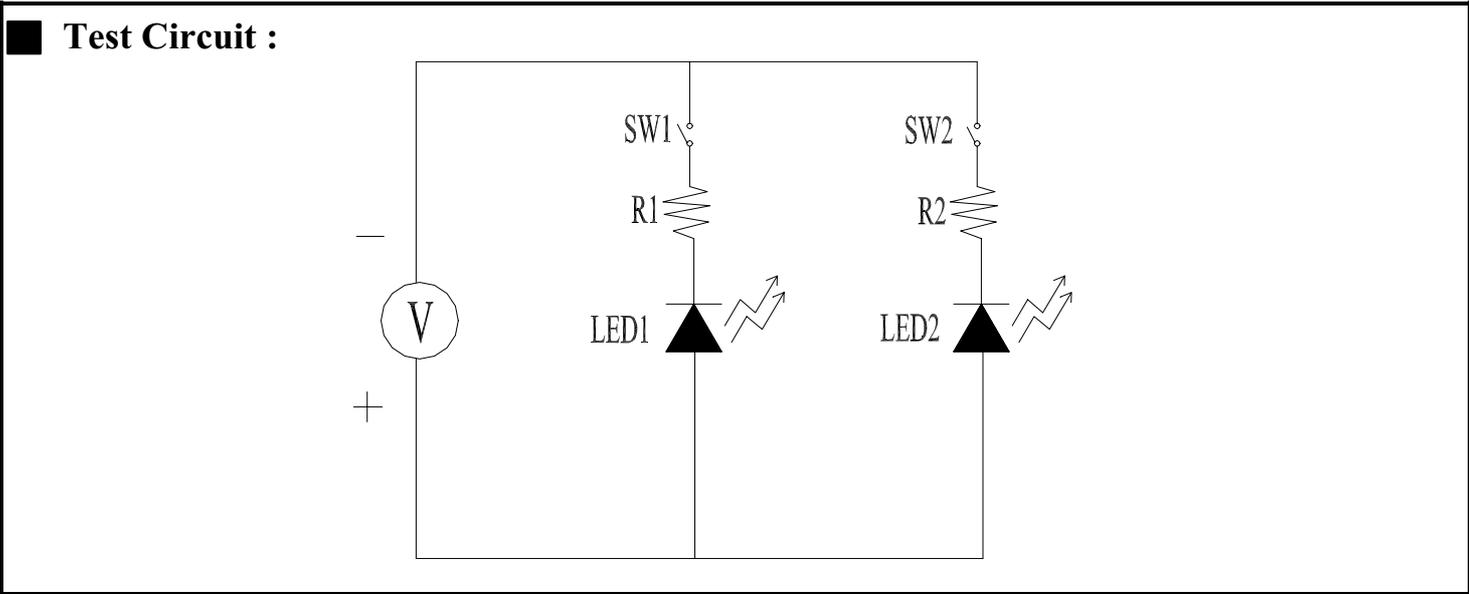
NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP. : 260°C ± 5 °C	5 SEC.	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min. ∫ 5 min. L : -55°C 30min.	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min. ∫ 10 sec. L : -10°C 5min.	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP. : 100°C	1000 HR.	76 PCS	0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 HR.	76 PCS	0/1
6	DC Operating Life	If = 20 m A	1000 HR.	76 PCS	0/1
7	High Temperature / High Humidity	85°C/RH85%	1000 HR.	76 PCS	0/1



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- **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 keeping in a damp proof box with desiccating 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 $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH60%, they should be treated at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 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.



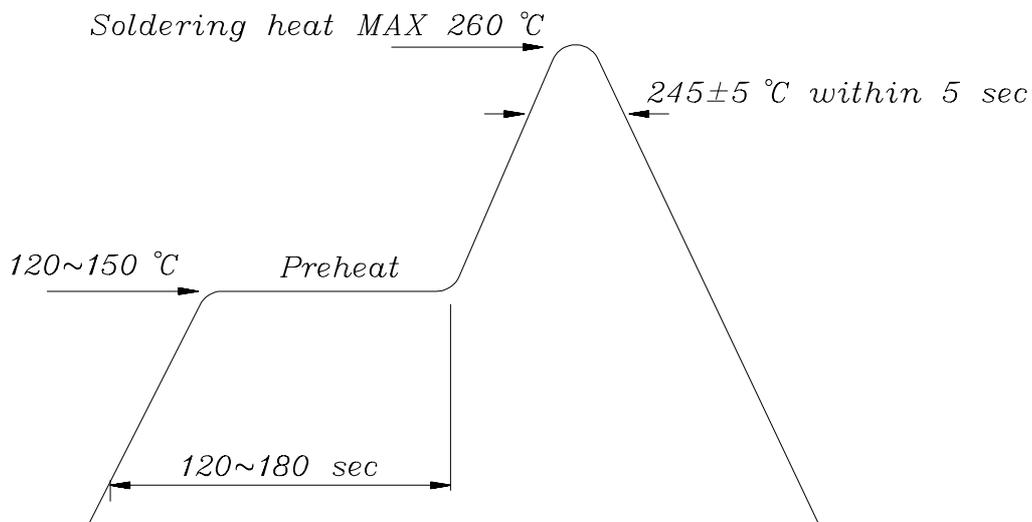
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■ **Soldering heat reliability (DIP) :**

Please refer to the following figure :

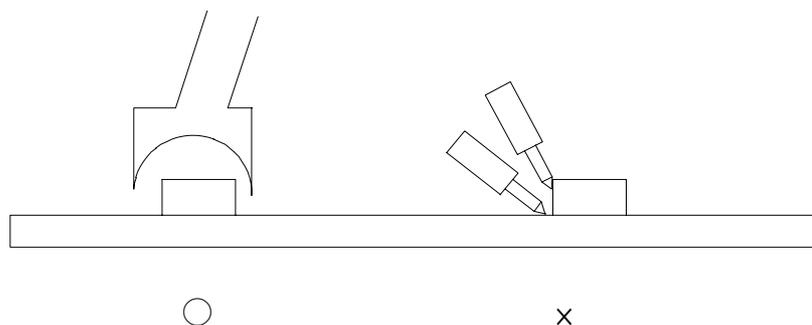


■ **Soldering Iron :**

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 260°C .
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.





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■ Reflow Temp./Time :

