



MODEL NO: 67-22VRVGC/TR8

Device Number : DSE-672-001 REV. 2.0

TOP LED

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**Features :**

- P-LCC-2package.
- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Low (2mA) current operation.
- Wide viewing angle.
- Computable with automatic placement equipment.
- Suitable for vapor-phase reflow, Infrared reflow and wave solder processes.
- Available on tape and reel (8mm Tape).

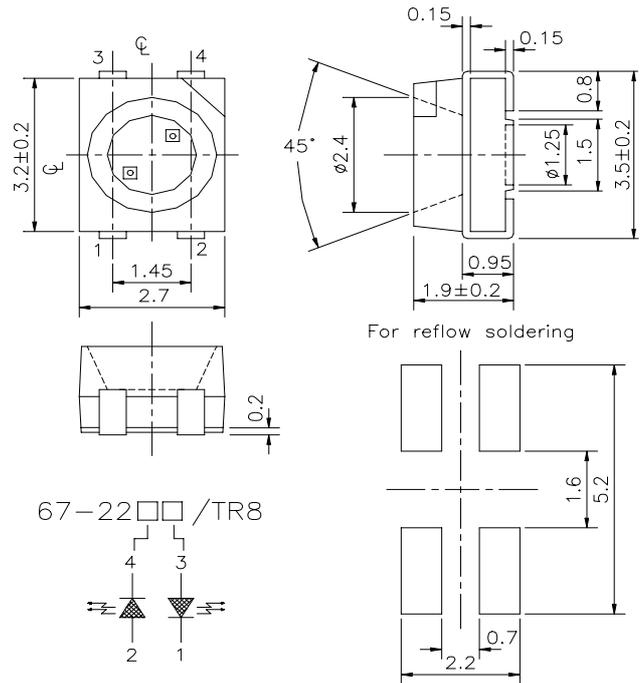
**Descriptions :**

- The 67-22 series is available in soft orange, green, blue and yellow.
- Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector, this feature makes the SMT TOP LED ideal for light pipe application.
- The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

**Applications :**

- Automotive: backlight in dashboards and switches.
- Telecommunication: indicator and backlight in telephone and fax.
- Indicator and backlight for audio and video equipment.
- Indicator and backlight in office and family equipment.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

**Package Dimensions :**



**Notes:**

Tolerances Unless Dimension  $\pm 0.1$ mm  
 Angle  $\pm 0.5^\circ$   
 Unit = mm

| Part NO.       | Chip      |               | Lens Color  |
|----------------|-----------|---------------|-------------|
|                | Material  | Emitted Color |             |
| 67-22VRVGC/TR8 | GaAsP/GaP | Hi-Eff Red    | Water Clear |
|                | GaP       | Green         |             |

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

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

FAX: 886-2-2267-6244, 2267-6189, 2267-6306

<http://www.everlight.com>



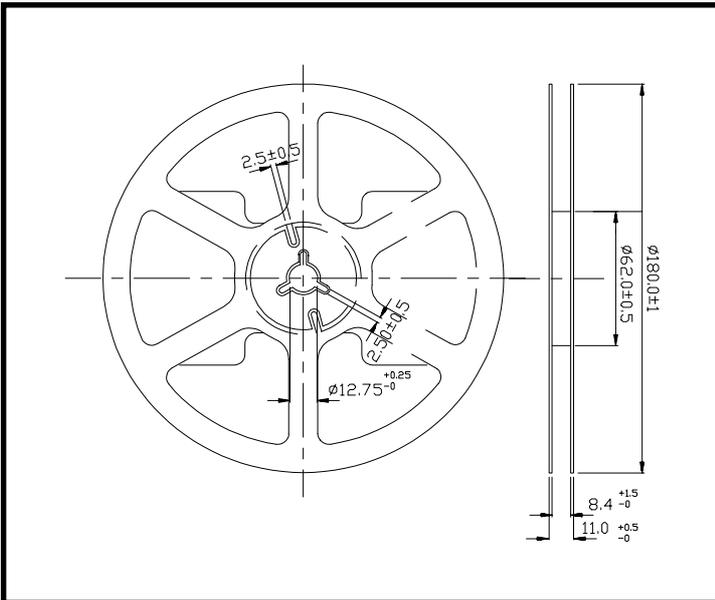
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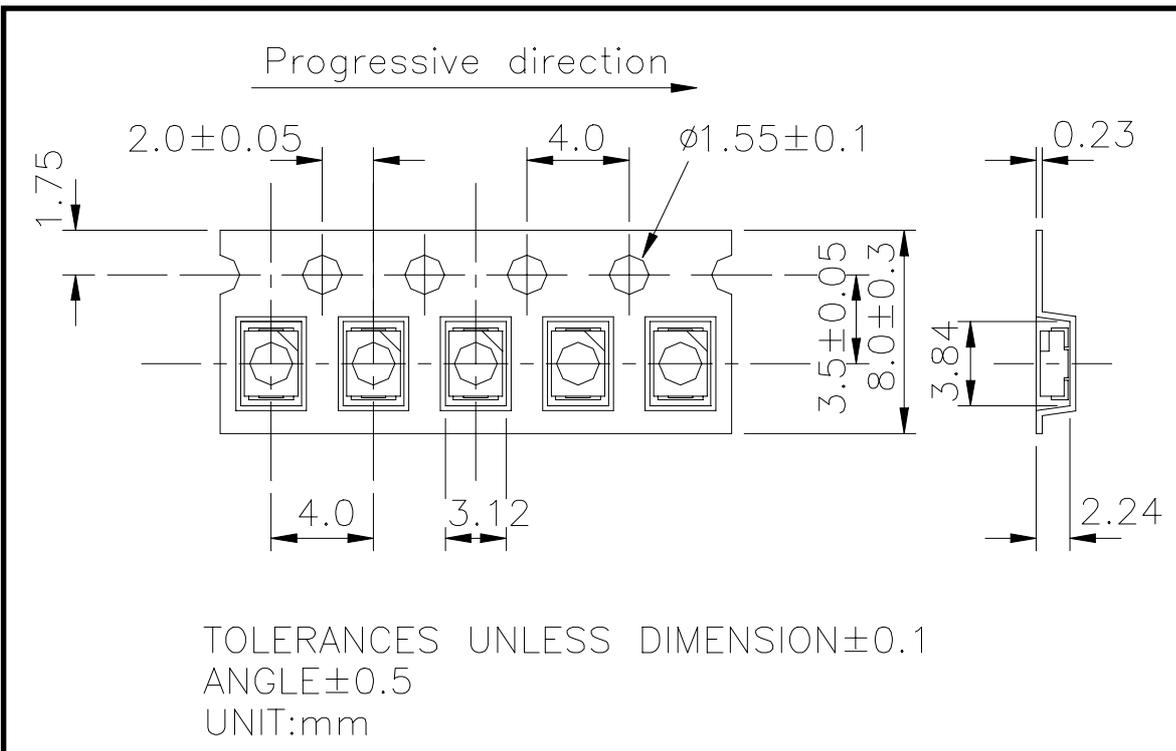
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■ **Package Dimensions :**



■ **Loaded quantity per reel 2000 PCS/reel :**





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■ **Absolute Maximum Ratings at Ta = 25°C (VR) :**

| Parameter                              | Symbol               | Rating             | Unit |
|--|----------------------|--------------------|------|
| Reverse Voltage                        | V <sub>R</sub>       | 5                  | V    |
| Forward Current                        | I <sub>F</sub>       | 30                 | mA   |
| Operating Temperature                  | T <sub>opr</sub>     | -40 ~ +85          | °C   |
| Storage Temperature                    | T <sub>stg</sub>     | -40 ~ +90          | °C   |
| Soldering Temperature                  | T <sub>sol</sub>     | 260 (for 5 second) | °C   |
| Power Dissipation                      | P <sub>d</sub>       | 100                | mW   |
| Peak Forward Current(Duty 1/10 @ 1KHZ) | I <sub>F(Peak)</sub> | 160                | mA   |

■ **Electronic Optical Characteristics (VR) :**

| Parameter                    | Symbol         | Min.  | Typ.  | Max.  | Unit | Condition            |
|------------------------------|----------------|-------|-------|-------|------|----------------------|
| Luminous intensity           | I <sub>v</sub> | 3     | 5.5   | ----- | mcd  | I <sub>F</sub> =20mA |
| Viewing Angle                | 2θ 1/2         | ----- | 120   | ----- | deg  | I <sub>F</sub> =20mA |
| Peak Wavelength              | λ <sub>p</sub> | ----- | 640   | ----- | nm   | I <sub>F</sub> =20mA |
| Dominant Wavelength          | λ <sub>d</sub> | ----- | 625   | ----- | nm   | I <sub>F</sub> =20mA |
| Spectrum Radiation Bandwidth | △λ             | ----- | 45    | ----- | nm   | I <sub>F</sub> =20mA |
| Forward Voltage              | V <sub>F</sub> | 1.7   | 2.0   | 2.4   | V    | I <sub>F</sub> =20mA |
| Reverse Current              | I <sub>R</sub> | ----- | ----- | 10    | μA   | V <sub>R</sub> =5V   |



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■ **Absolute Maximum Ratings at Ta = 25°C (VG) :**

| Parameter                              | Symbol               | Rating            | Unit |
|--|----------------------|-------------------|------|
| Reverse Voltage                        | V <sub>R</sub>       | 5                 | V    |
| Forward Current                        | I <sub>F</sub>       | 30                | mA   |
| Operating Temperature                  | T <sub>opr</sub>     | -40 ~ +85         | °C   |
| Storage Temperature                    | T <sub>stg</sub>     | -40 ~ +90         | °C   |
| Soldering Temperature                  | T <sub>sol</sub>     | 260(for 5 second) | °C   |
| Power Dissipation                      | P <sub>d</sub>       | 100               | mW   |
| Peak Forward Current(Duty 1/10 @ 1KHZ) | I <sub>F(Peak)</sub> | 160               | mA   |

■ **Electronic Optical Characteristics (VG) :**

| Parameter                    | Symbol         | Min.  | Typ.  | Max.  | Unit | Condition            |
|------------------------------|----------------|-------|-------|-------|------|----------------------|
| Luminous intensity           | I <sub>v</sub> | 8     | 14.5  | ----- | mcd  | I <sub>F</sub> =20mA |
| Viewing Angle                | 2θ 1/2         | ----- | 120   | ----- | deg  | I <sub>F</sub> =20mA |
| Peak Wavelength              | λ <sub>p</sub> | ----- | 570   | ----- | nm   | I <sub>F</sub> =20mA |
| Dominant Wavelength          | λ <sub>d</sub> | ----- | 571   | ----- | nm   | I <sub>F</sub> =20mA |
| Spectrum Radiation Bandwidth | Δλ             | ----- | 30    | ----- | nm   | I <sub>F</sub> =20mA |
| Forward Voltage              | V <sub>F</sub> | 1.7   | 2.1   | 2.4   | V    | I <sub>F</sub> =20mA |
| Reverse Current              | I <sub>R</sub> | ----- | ----- | 10    | μA   | V <sub>R</sub> =5V   |



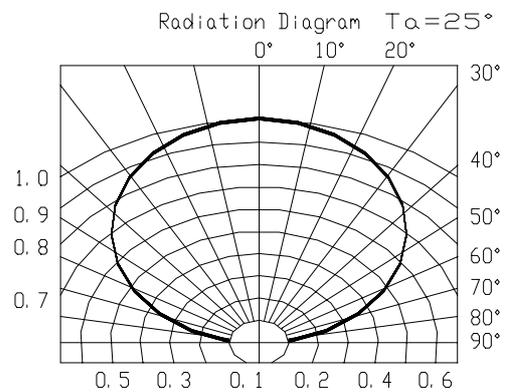
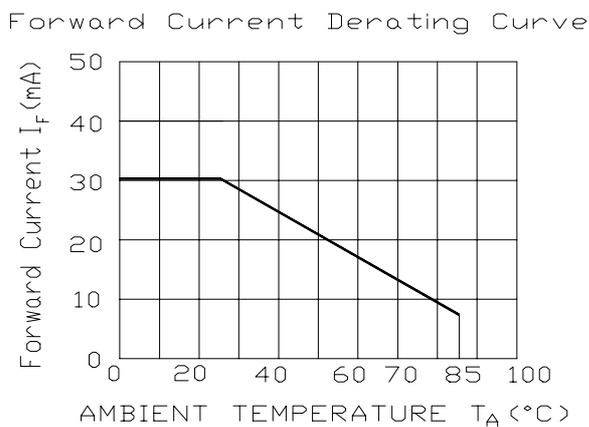
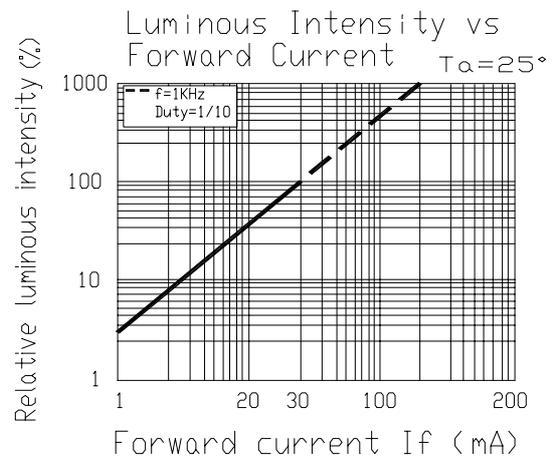
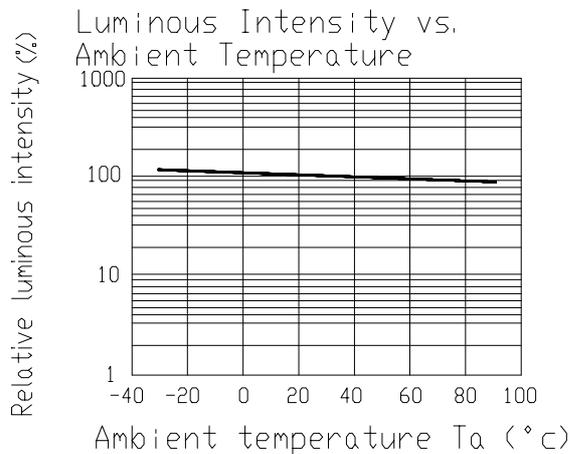
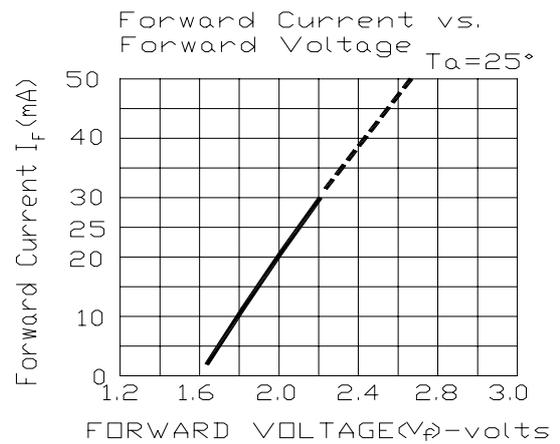
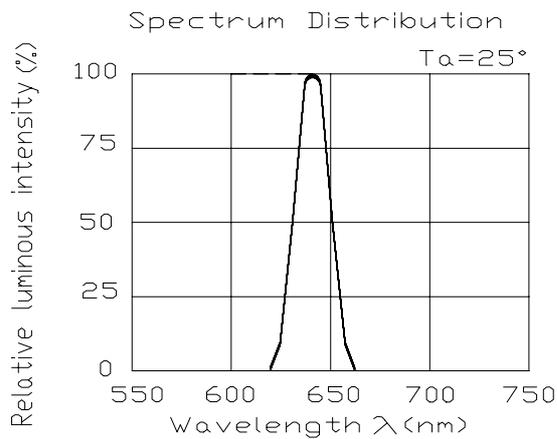
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■ **Typical Electro-Optical Characteristic Curves(VR) :**





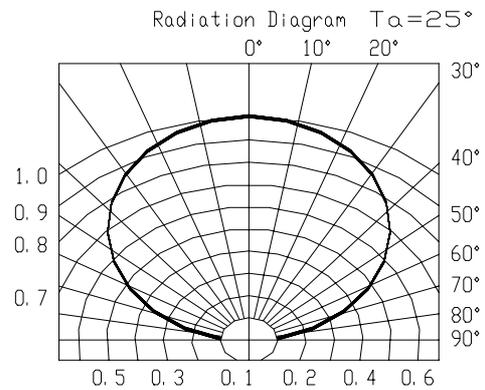
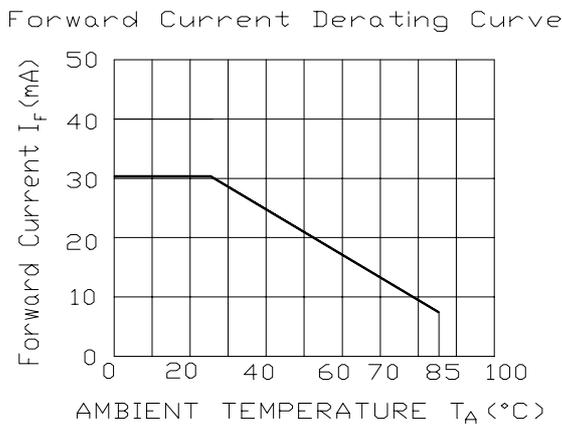
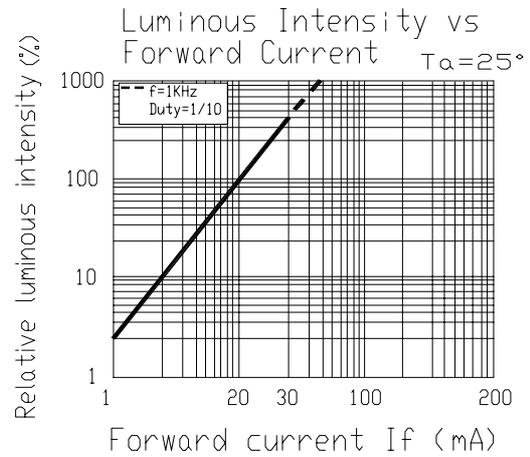
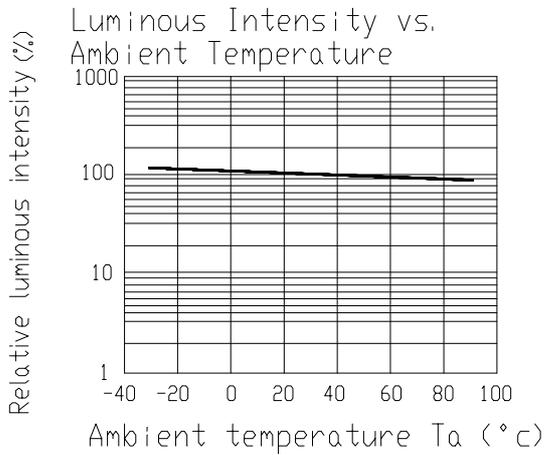
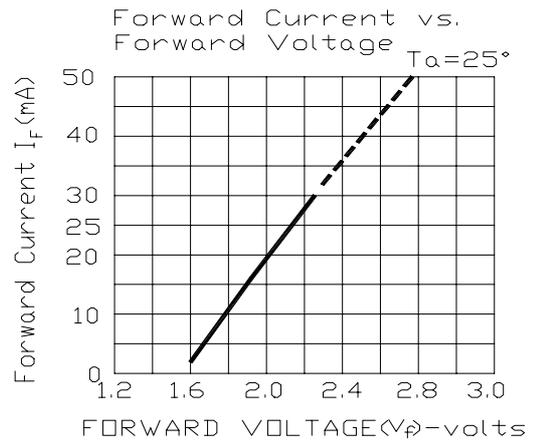
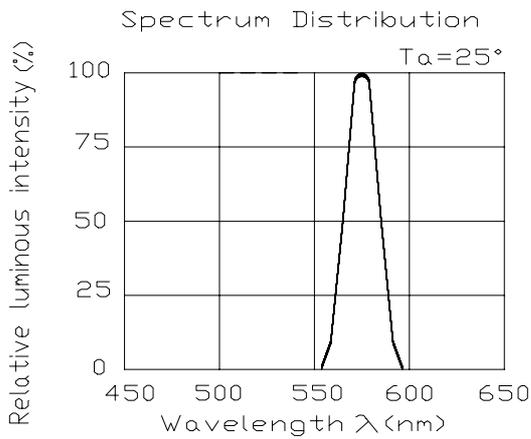
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■ **Typical Electro-Optical Characteristic Curves(VG) :**





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■ Reliability Test Item And Condition :

| 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<br>∫ 5 min<br>L : -55°C 30min | 50 CYCLE         | 76 Pcs      | 0/1   |
| 3  | Thermal Shock                       | H : +100°C 5min<br>∫ 10 sec<br>L : -10°C 5min | 50 CYCLE         | 76 Pcs      | 0/1   |
| 4  | High Temperature Storage            | TEMP : 100°C                                  | 1000 HRS         | 76 Pcs      | 0/1   |
| 5  | Low Temperature Storage             | TEMP : -55°C                                  | 1000 HRS         | 76 Pcs      | 0/1   |
| 6  | DC Operating Life                   | If = 20 mA                                    | 1000 HRS         | 76 Pcs      | 0/1   |
| 7  | High Temperature /<br>High Humidity | 85°C /85% RH                                  | 1000 HRS         | 76 Pcs      | 0/1   |

Products are evaluated according to the above standard reliability criteria.



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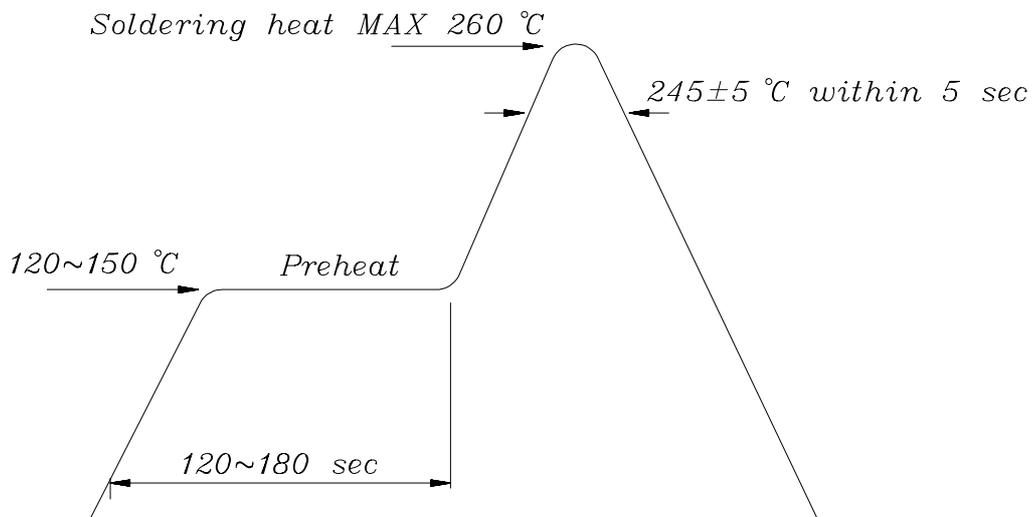
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■ **Soldering heat reliability ( DIP ) :**

Please refer to the following figure :

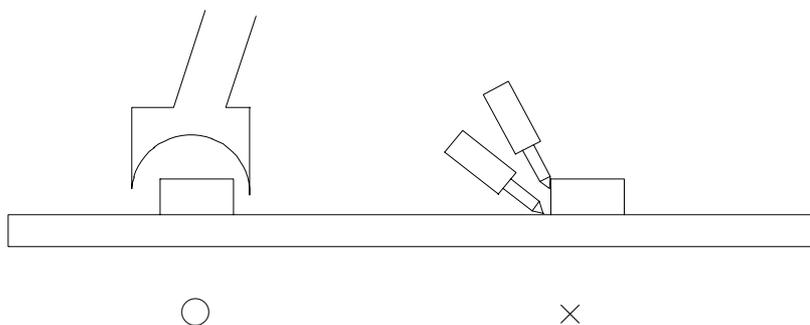


■ **Soldering Iron :**

Basic spec is  $\leq 5$  sec when 245°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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■ Reflow Temp. / Time :

