



MODEL NO: 12-22 SDRSYGC/S111/TR8 Device Number : DSE-122- 010 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.

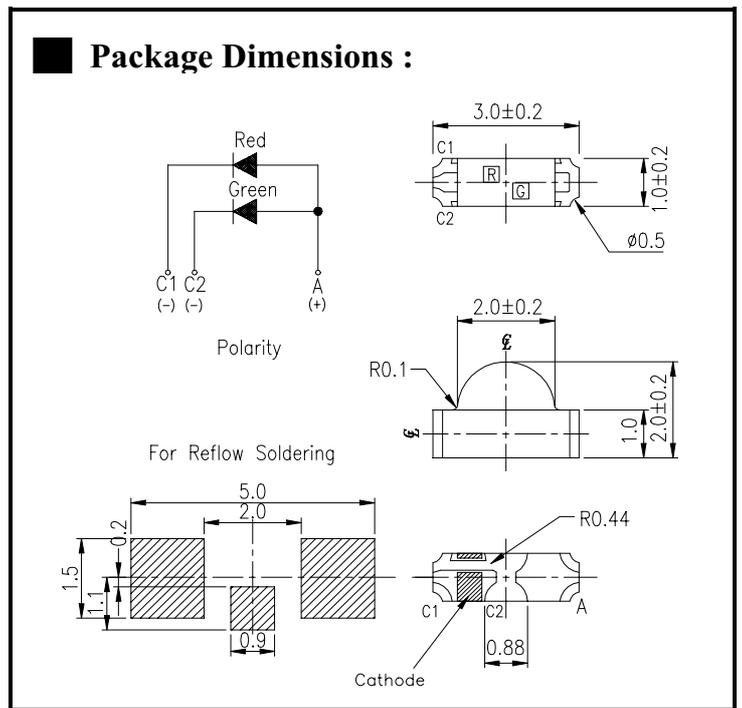
Descriptions :

- 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, light weight 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.

Package Dimensions :



Notes :

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

Part NO.	Chip		Lens Color
	Material	Emitted Color	
12-22 SDRSYGC/S111/TR8	SDR:	AlGaInP Super Deep-Red	Water Clear
	SYG:	AlGaInP Super Yellow Green	

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

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<http://www.everlight.com>



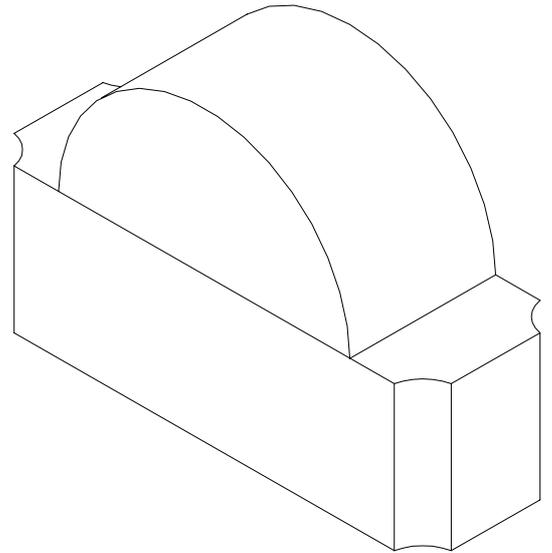
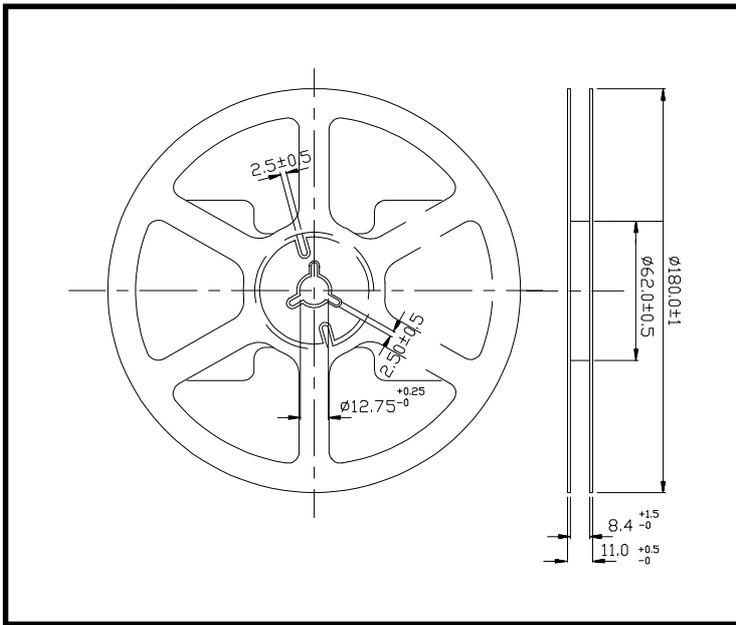
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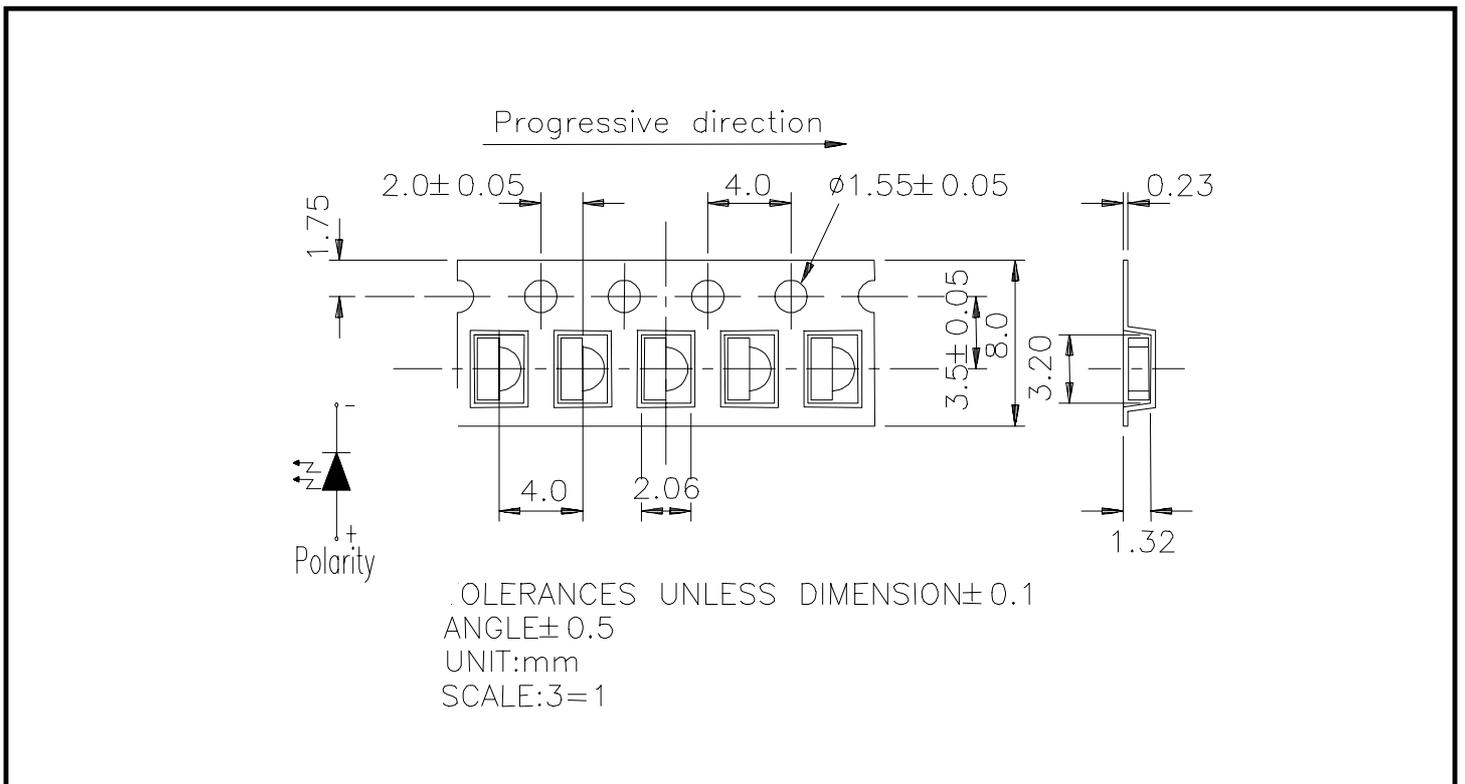
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Package Dimensions :



Loaded quantity per reel 2000 pcs/reel :





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■ **Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	SDR: 25 SYG: 25	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Electrostatic Discharge	ESD	2000	V
Soldering Temperature	T _{sol}	260 (for 5 second)	°C
Power Dissipation	P _d	SDR: 60 SYG: 60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _{F(Peak)}	SDR: 160 SYG: 160	mA



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■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v SDR:	10.0	-----	32.0	mcd	I _F =10mA
	SYG:	10.0	-----	32.0		
Viewing Angle	2θ 1/2	-----	120	-----	deg	I _F =20mA
Peak Wavelength	λ _p SDR:	-----	650	-----	nm	I _F =20mA
	SYG:	-----	575			
Dominant Wavelength	λ _d SDR:	-----	639	-----	nm	I _F =20mA
	SYG:	-----	573			
Spectrum Radiation Bandwidth	Δλ SDR:	-----	20	-----	nm	I _F =20mA
	SYG:	-----	20			
Forward Voltage	V _F SDR:	-----	2.0	2.4	V	I _F =20mA
	SYG:	-----	2.0	2.4		
Reverse Current	I _R	-----	-----	10	μA	V _R =5V



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■ **Specifications For BinGrading**

IF= 10mA

Bin Grading	Min	Typ	Max	Unit
L	10	----	20	mcd
M	16	----	32	mcd

■ **Reliability Test Items And Conditions:**

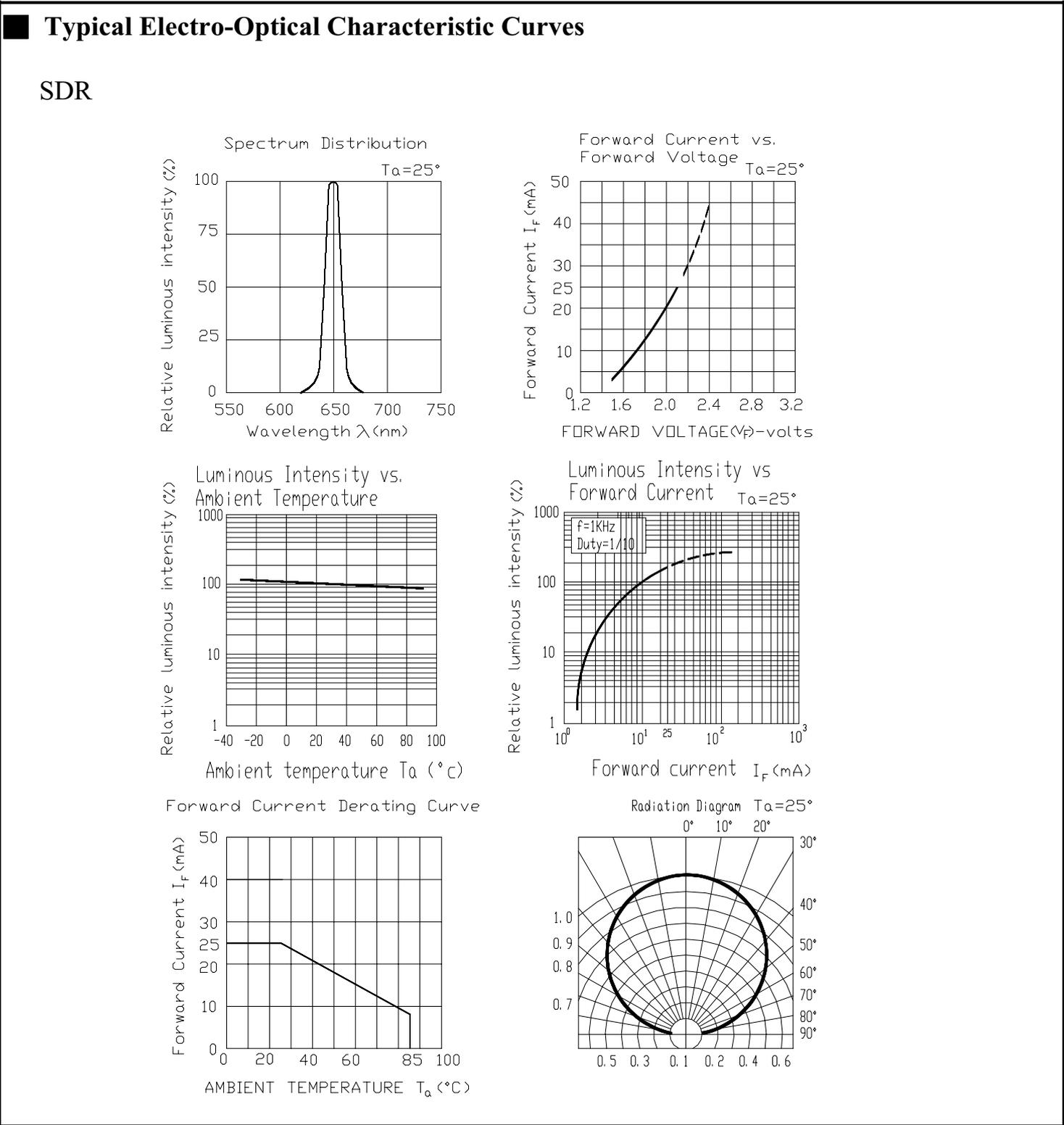
NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 SEC	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min ∩ 5 min L : -55°C 30min	50 CYCLE	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min ∩ 10 sec L : -10°C 5min	50 CYCLE	76 PCS	0/1
4	High Temperature Storage	TEMP : 100°C	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 m A	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 PCS	0/1



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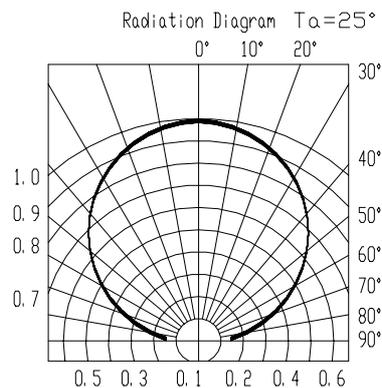
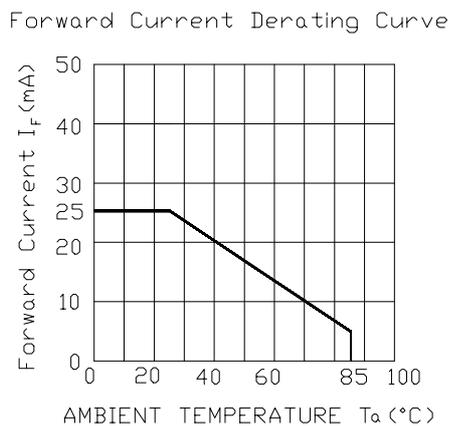
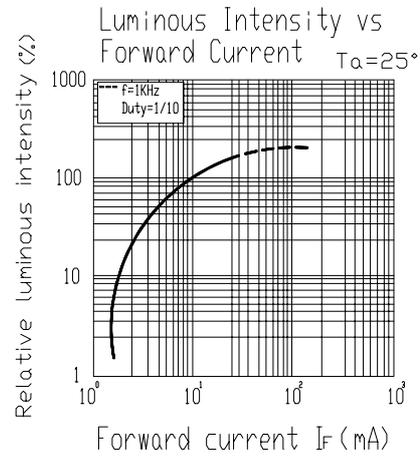
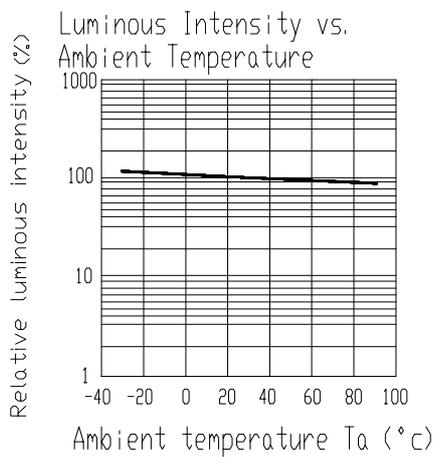
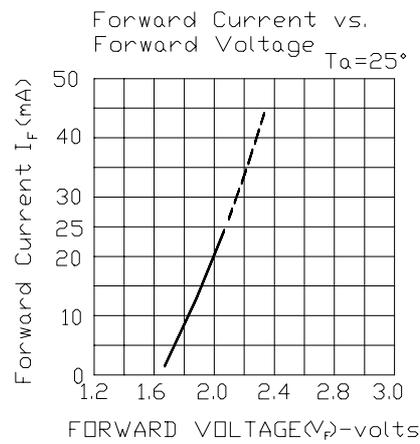
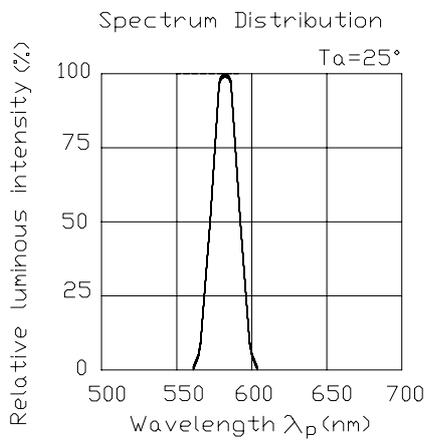
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Typical Electro-Optical Characteristic Curves

SYG



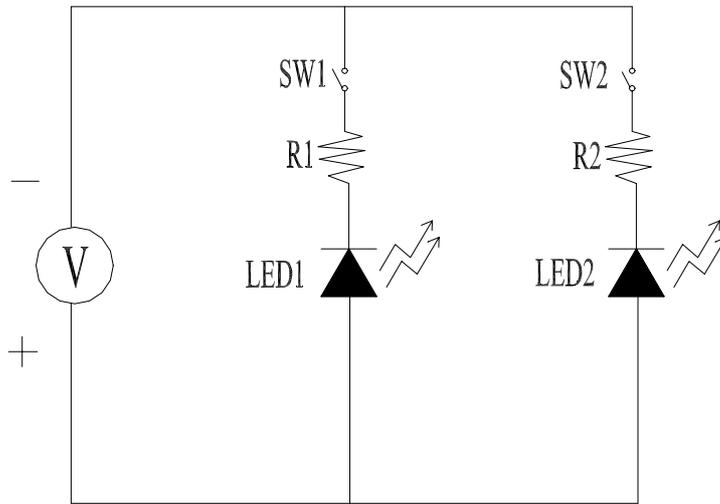


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■ **Test Circuit**



■ **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 R.H. are : $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, R.H.60%.

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 desiccating agent.

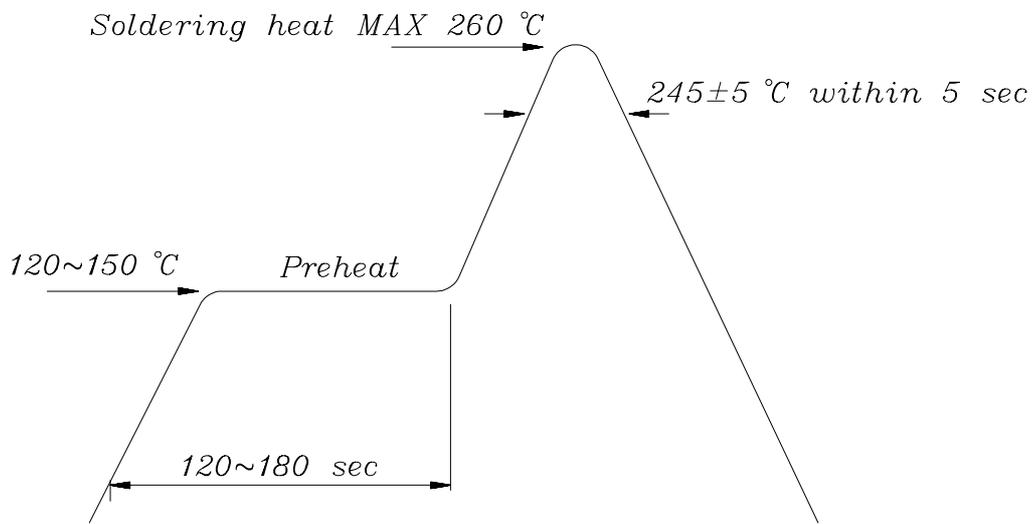
Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, R.H.60% , 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.

■ **Soldering heat reliability (DIP)**

Please refer to the following figure :

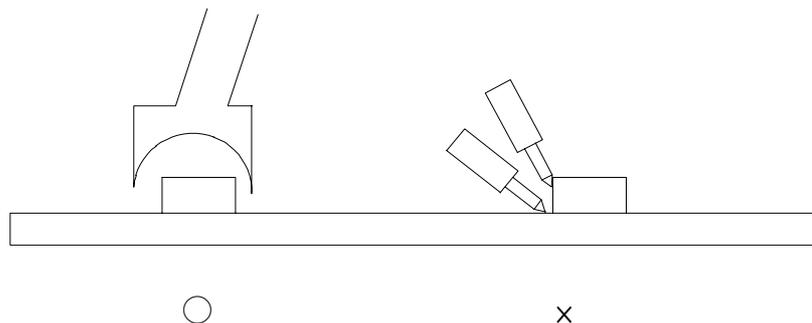


■ **Soldering Iron**

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





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■ Reflow Temp / Time :

