



EVERLIGHT ELECTRONICS CO.,LTD.

MODEL NO: 12-21SRC/TR8

Device Number : DSE-121-018 REV. 1.1

Chip LEDs with Right Angle Lens

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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.
- Mono-color type.

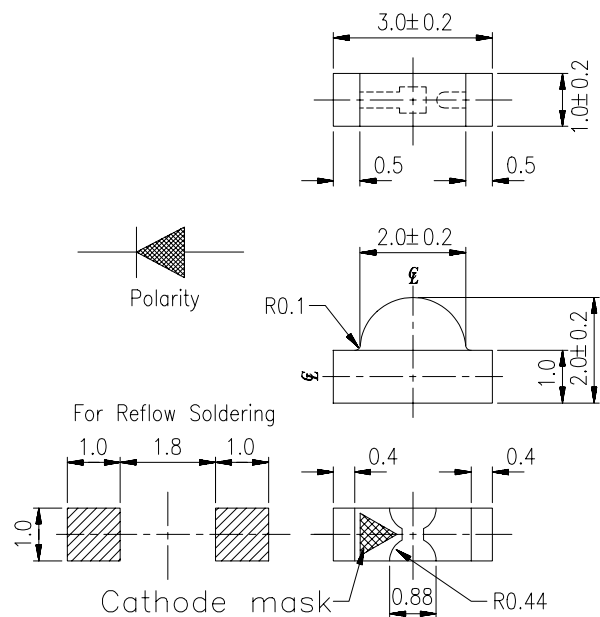
Description :

- The 12-21 SMD Taping is much smaller than leaded 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 application, 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 Dimension :



Notes :

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

PART NO	CHIP		Lens Color
	Material	Emitted Color	
12-21SRC/TR8	AlGaAs	Super Red	Water Clear

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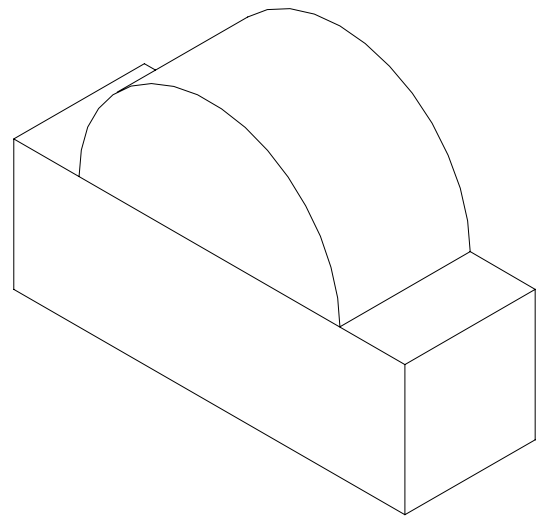
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Technical drawing of a wheel hub (Figure 1.10). The drawing shows a top view and a side view. The top view is a circle with a central hub and five spokes. The central hub has a diameter of $\phi 12.75^{+0.25}_{-0}$. The spokes are labeled with a width of 2.5 ± 0.5 . The side view shows the hub's profile with a total height of $\phi 180.0 \pm 1$ and a central hole with a diameter of $\phi 62.0 \pm 0.5$. The hub has a thickness of $8.4^{+1.5}_{-0}$ and a flange thickness of $11.0^{+0.5}_{-0}$.



Technical drawing of a 5-pin D-sub connector. The drawing includes a top view and a side view.

Top View Dimensions:

- Pin pitch: 2.0 ± 0.05
- Pin diameter: $\varnothing 1.55 \pm 0.05$
- Distance between pin centers: 4.0
- Distance from pin center to body edge: 4.0
- Distance from pin center to body edge: 2.06
- Body width: 12.7
- Body height: 3.5 ± 0.05
- Pin height: 0.23

Side View Dimensions:

- Pin height: 0.23
- Body height: 3.20
- Pin width: 1.32

Other Features:

- Polarity:** Indicated by a triangle symbol on the left.
- Progressive direction:** Indicated by an arrow pointing right at the top.

TOLERANCES UNLESS DIMENSION± 0.1
ANGLE± 0.5
UNIT:mm
SCALE:3=1



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■ Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit
Reverse Voltage	Vr	5	V
Forward Current	If	40	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	260 (for 5 second)	°C
Power Dissipation	Pd	110	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	If(Peak)	180	mA

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	Iv	14.5	24.5	-----	mcd	If=20mA
Viewing Angle	2 θ 1/2	-----	120	-----	deg	If=20mA
Peak Wavelength	λ p	-----	660	-----	nm	If=20mA
Dominant Wavelength	λ d	-----	643	-----	nm	If=20mA
Spectrum Radiation Bandwidth	△ λ	-----	20	-----	nm	If=20mA
Forward Voltage	Vf	1.5	1.7	2.4	V	If=20mA
Reverse Current	Ir	-----	-----	10	μ A	Vr=5V



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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 ∫ 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 Ma	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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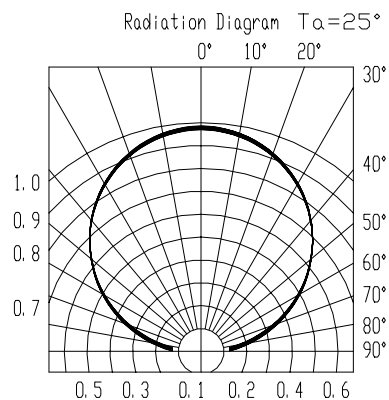
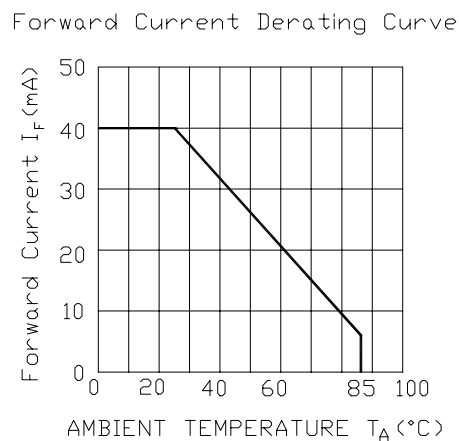
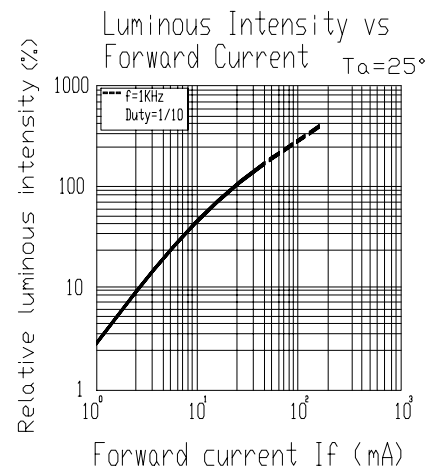
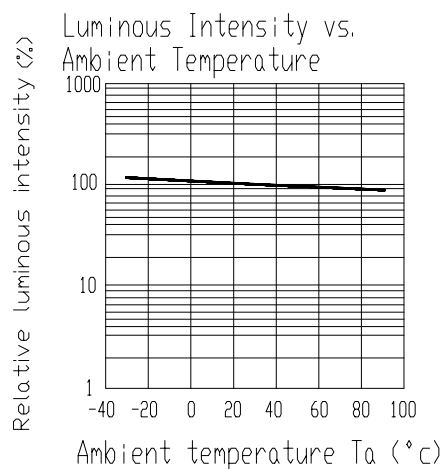
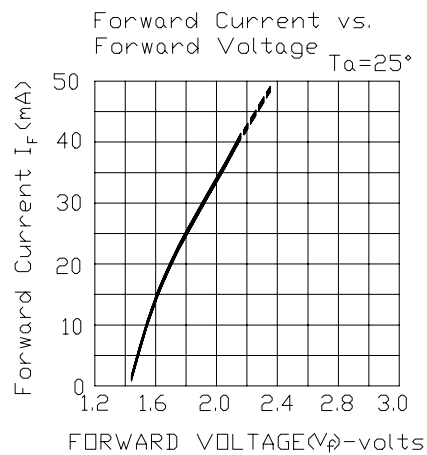
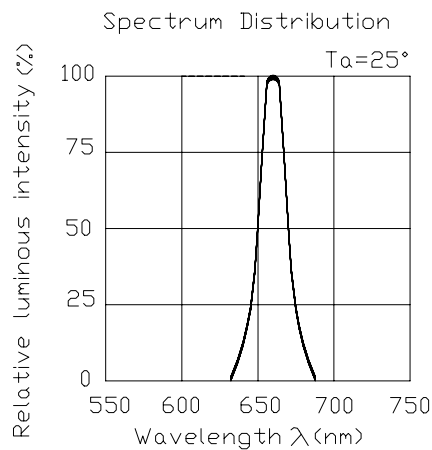
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Typical Electro-Optical Characteristic Curves





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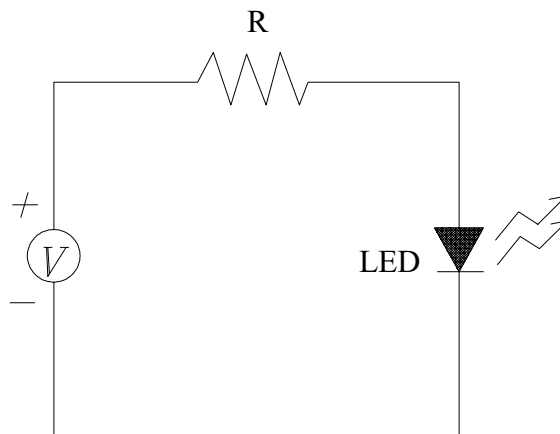
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■ Test Circuit



■ 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 keep in a dampproof box with desiccants.

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.



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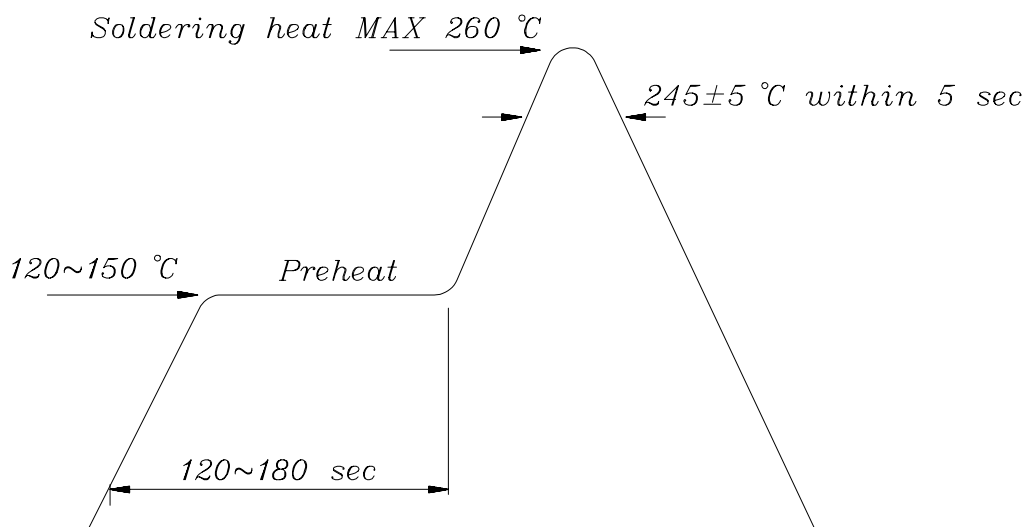
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■ Soldering heat reliability (DIP)

Please refer to the following figure :

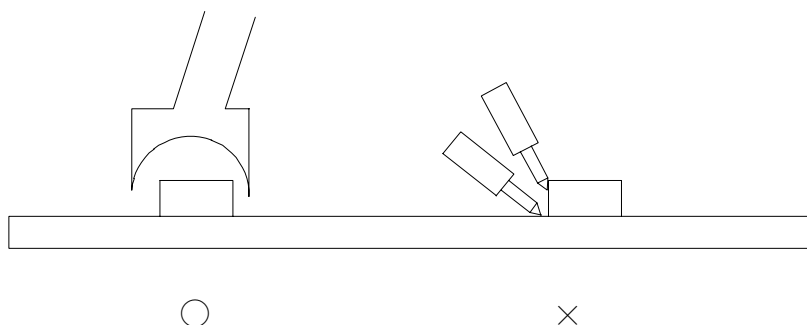


■ Soldering Iron

Basic spec is ≤ 5 sec when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). 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 :

