



EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: 42-21 SURC/S530-A2/TR8

Device Number : DSE-421-026 REV. 1.0

1.8mm Round Subminiature LEDs

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■ Features :

- Package in 12mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.

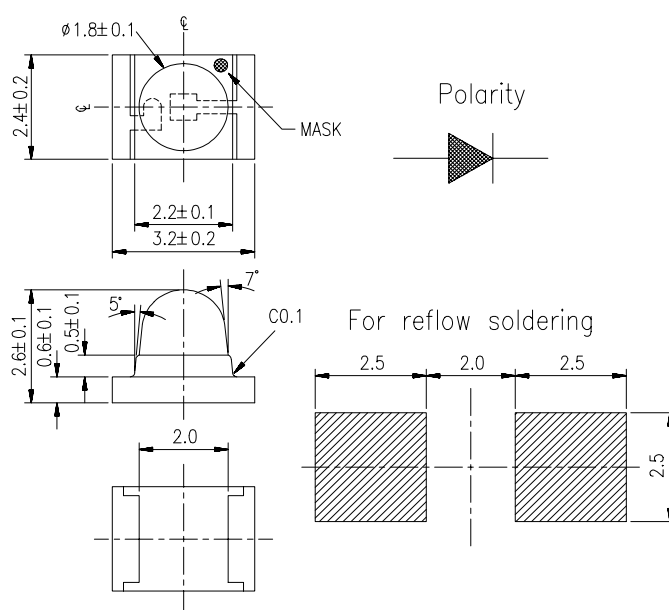
■ Description :

- The 42-21 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, lightweight 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 Dimensions :



■ Notes :

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

PART NO	CHIP		Lens Color
	Material	Emitted Color	
42-21 SURC/S530-A2/TR8	AlGaInP	Hyper Red	Water Clear

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<http://www.everlight.com>



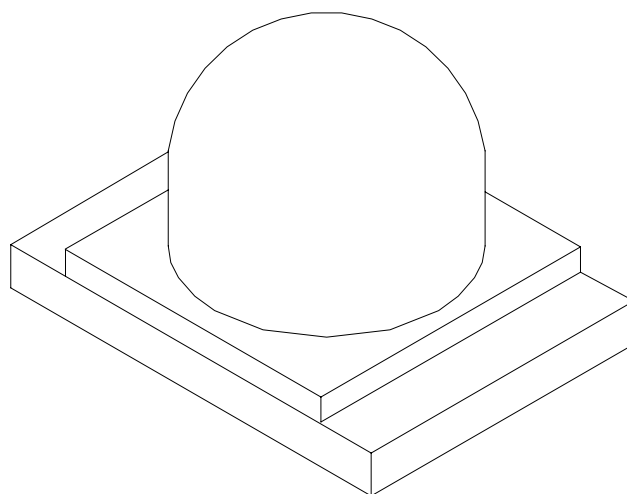
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Technical drawing of a circular mechanical part, likely a wheel or a flange, showing dimensions in millimeters.

The drawing includes the following dimensions:

- Central hole diameter: $\varnothing 13 \pm 0.5$
- Spoke thickness: 2.5 ± 0.5
- Spoke width: 5 ± 0.5
- Outer diameter: $\varnothing 178.0 \pm 1$
- Inner diameter (flange): $\varnothing 60.2 \pm 0.5$
- Flange thickness (top): 13.2 ± 1.5
- Flange thickness (bottom): 16.0 ± 0.2



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

Top View Dimensions:

- Overall width: 12.0
- Pin pitch (center-to-center): 2.0 ± 0.05
- Pin diameter: $\varnothing 1.55 \pm 0.05$
- Distance from left edge to first pin center: 4.0
- Distance from last pin center to right edge: 2.6
- Distance from top edge to pin center line: 5.5 ± 0.05
- Distance from bottom edge to pin center line: 12.0

Side View Dimensions:

- Overall height: 3.4 ± 0.1
- Pin height: 1.75
- Distance from bottom edge to pin base: 2.75 ± 0.1
- Distance from top edge to pin base: 0.23 ± 0.1

Other Features:

- Progressive direction:** Indicated by an arrow pointing to the right.
- Polarity:** Indicated by a symbol at the bottom left.

TOLERANCES UNLESS DIMENSION±0.1
ANGLE±0.5
UNIT:mm



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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	25	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	260 (for 5 second)	°C
Electrostatic Discharge	ESD	2000	V
Power Dissipation	P _d	60	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _f (Peak)	160	mA

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I _v	-----	25	-----	mcd	I _f =2mA
		171	417	-----	mcd	I _f =20mA
Viewing Angle	2 θ 1/2	-----	30	-----	deg	I _f =20mA
Peak Wavelength	λ _p	-----	632	-----	nm	I _f =20mA
Dominant Wavelength	λ _d	-----	624	-----	nm	I _f =20mA
Spectrum Radiation Bandwidth	△ λ	-----	20	-----	nm	I _f =20mA
Forward Voltage	V _f	-----	2.0	2.4	V	I _f =20mA
Reverse Current	I _r	-----	-----	10	μ A	V _r =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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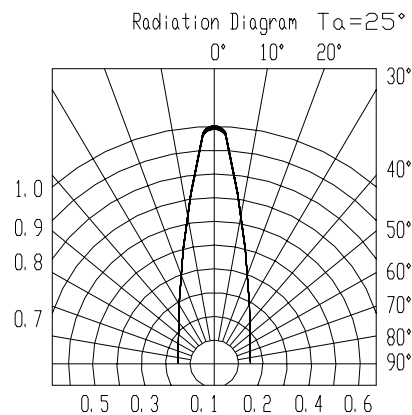
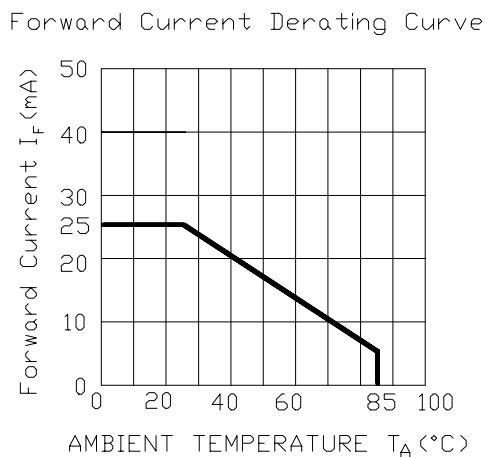
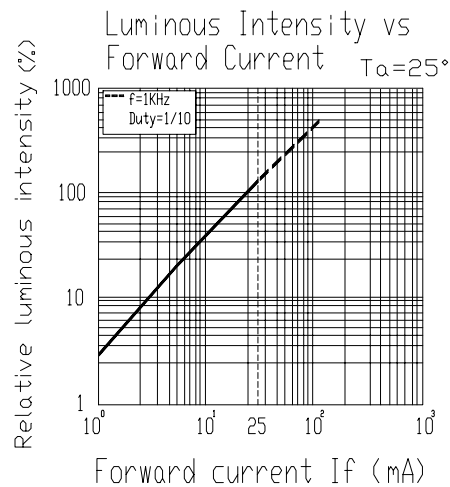
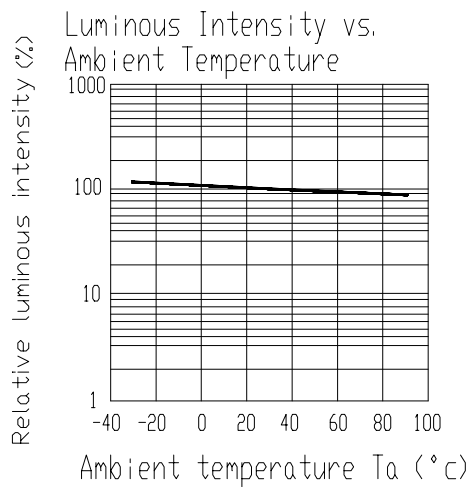
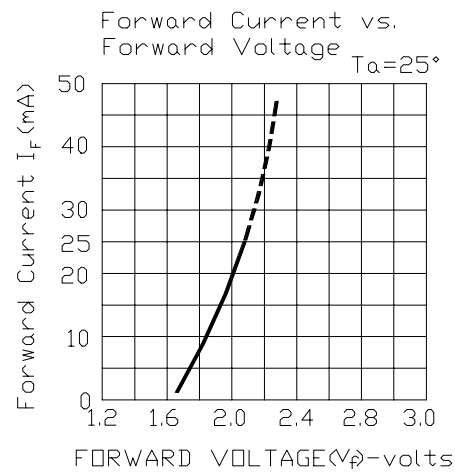
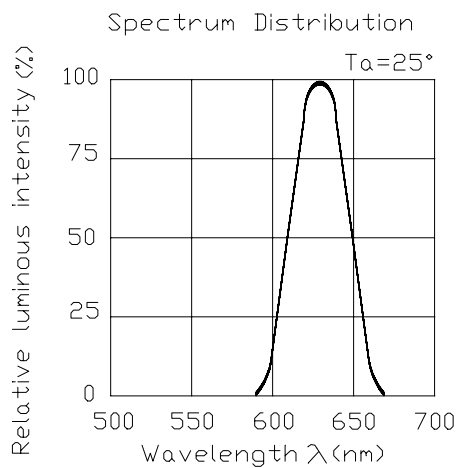
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Typical Electro-Optical Characteristic Curves :





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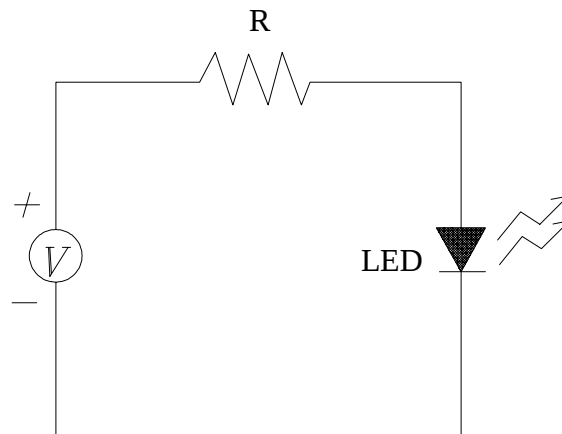
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■ **Test Circuit :**



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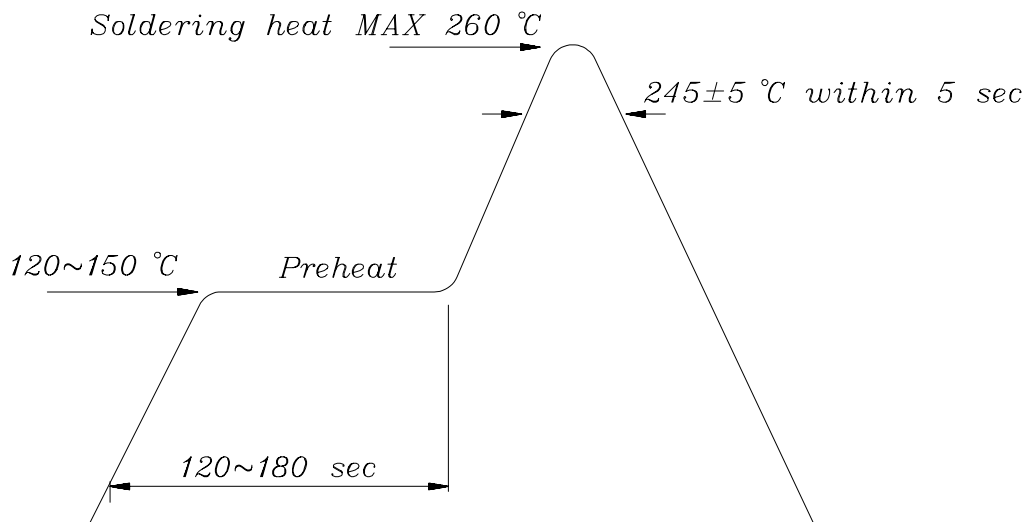
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■ Soldering heat reliability (DIP) :

Please refer to the following figure :

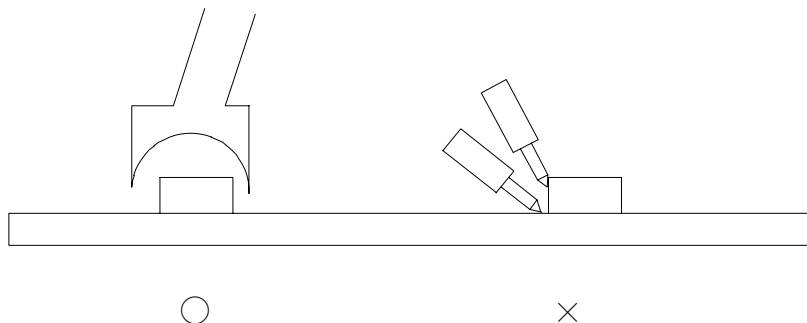


■ Soldering Iron :

Basic spec is ≤ 5 sec when 260°C .If temperature is higher, time should be shorter (+10°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 :

