



EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: 42-21 URC/TR8
1.8mm Round Subminiature LEDs

Device Number : DSE-421-007 REV. 1.3

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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.

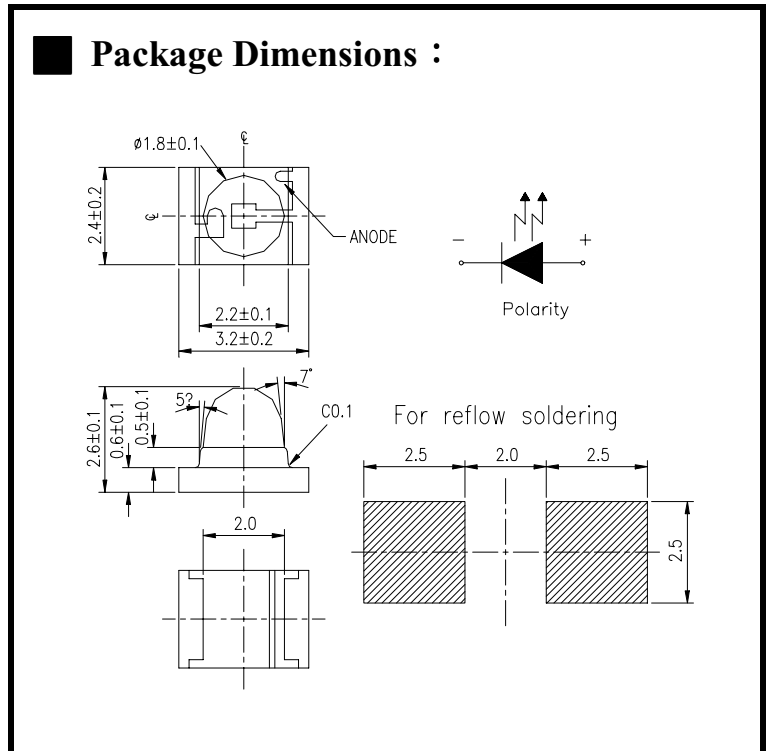
Descriptions :

- The 42-21 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 \pm
0.1mm
Angle $\pm 0.5^\circ$

PART NO	Chip		Lens Color
	Material	Emitted Color	
42-21 URC/TR8	GaAlAs	Super Red	Water Clear

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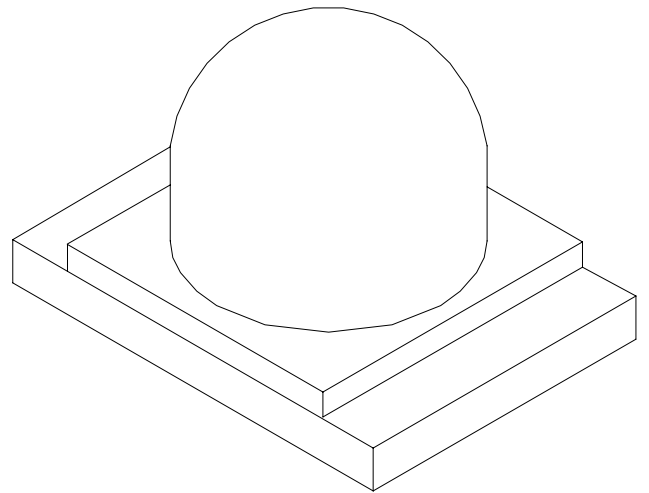
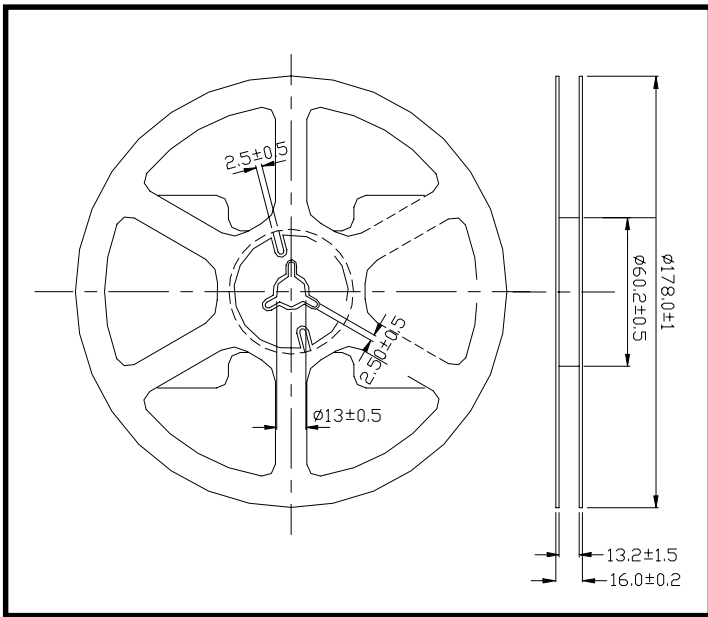
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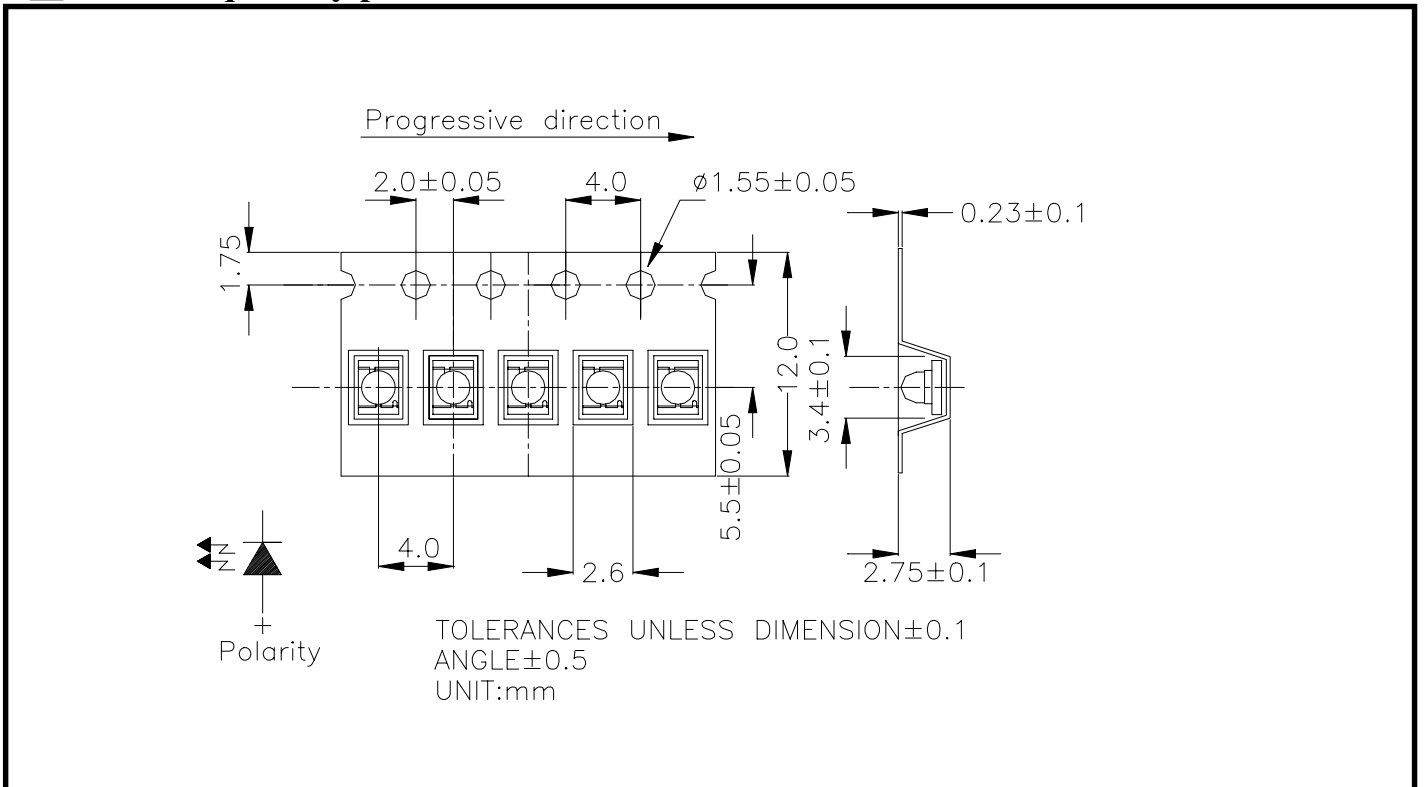
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■ **Package Dimensions :**



■ **Loaded quantity per reel 1000 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	40	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	260 (for 5 second)	°C
Power Dissipation	P _d	110	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	I _{F(Peak)}	180	mA

■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	290.5	484.5	-----	mcd	I _F =20mA
Viewing Angle	2θ 1/2	-----	30	-----	deg	I _F =20mA
Peak Wavelength	λ _p	-----	660	-----	nm	I _F =20mA
Dominant Wavelength	λ _d	-----	643	-----	nm	I _F =20mA
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	I _F =20mA
Forward Voltage	V _F	1.5	1.7	2.4	V	I _F =20mA
Reverse Current	I _R	-----	-----	10	μA	V _R =5V



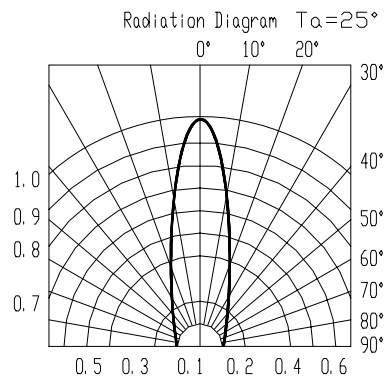
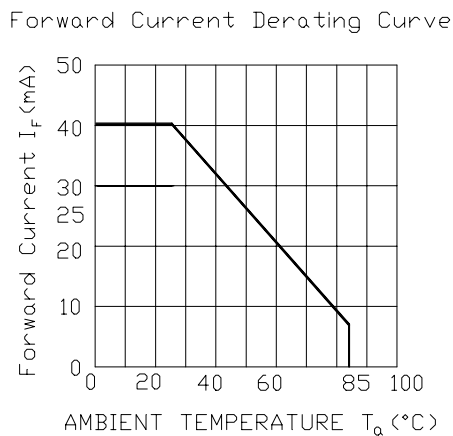
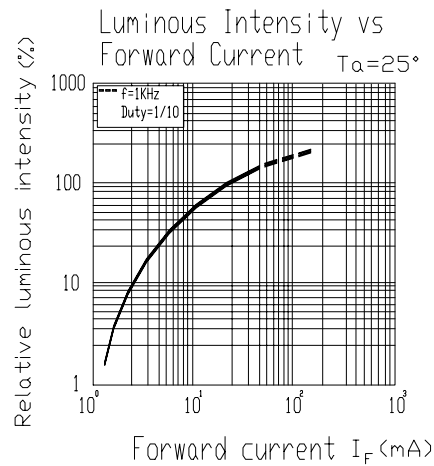
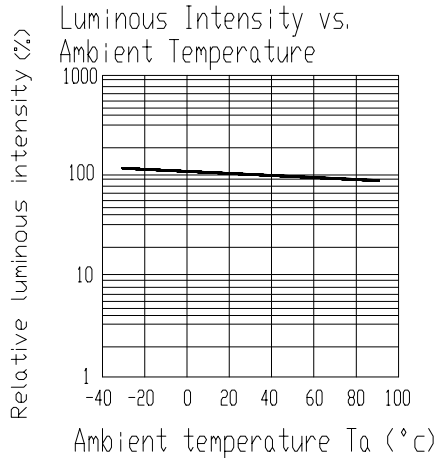
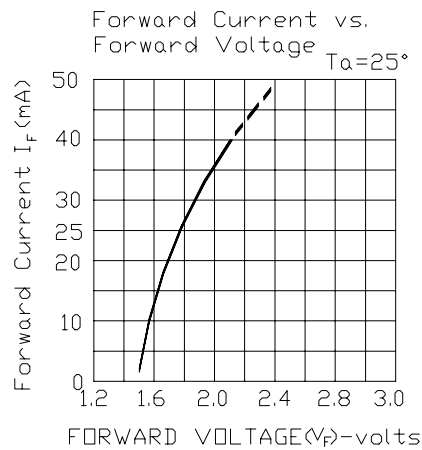
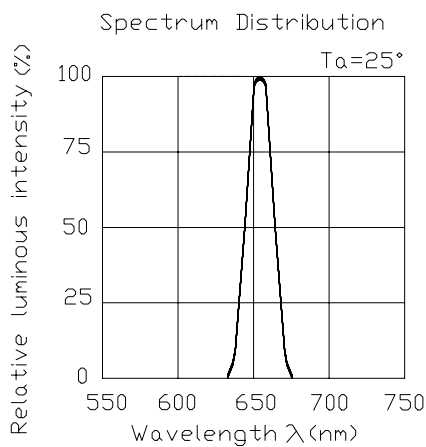
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Typical Electro-Optical Characteristic Curves :





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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 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	I _F = 20 mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C /85% RH	1000 HRS	76 PCS	0/1



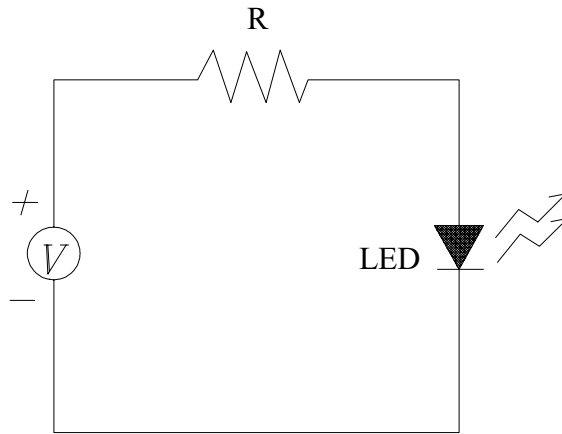
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■ **Test Circuit :**



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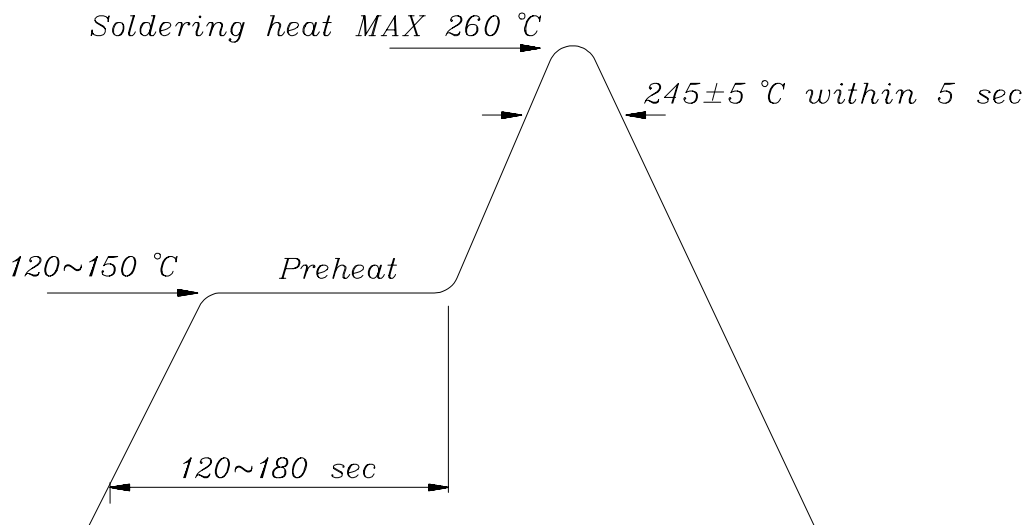
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■ **Soldering heat reliability (DIP) :**

Please refer to the following figure :

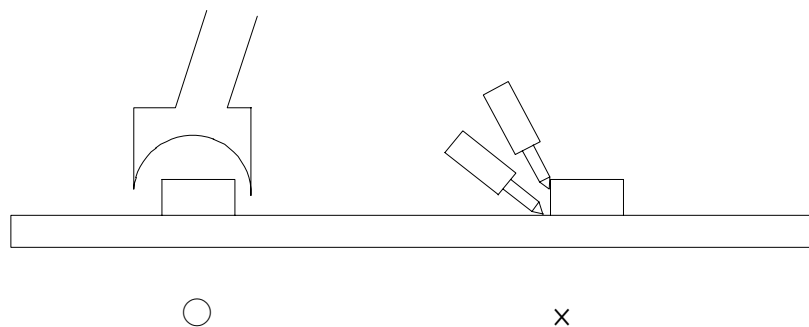


■ **Soldering Iron :**

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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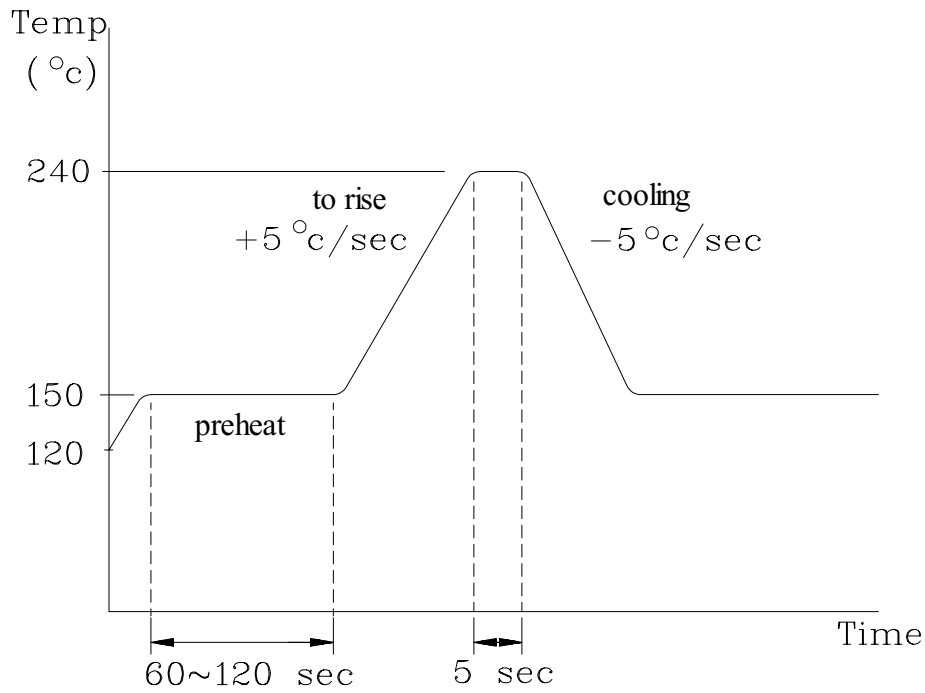
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■ Reflow Temp / Time :



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