

**Technical Data Sheet****1.8mm round Subminiature Chip LEDs****42-21SDRC/S530-XX/TR8****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.
- Pb-free.
- The product itself will remain within RoHS compliant version.

**Descriptions**

- The 42-21 SMD LED 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, lightweight makes them ideal for miniature applications. etc.

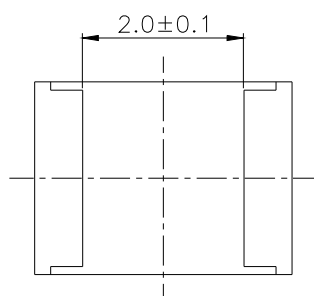
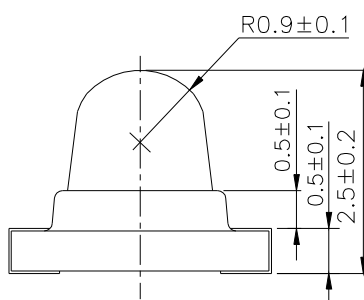
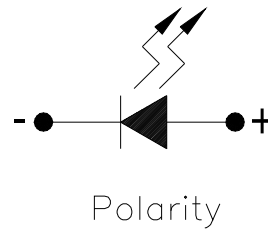
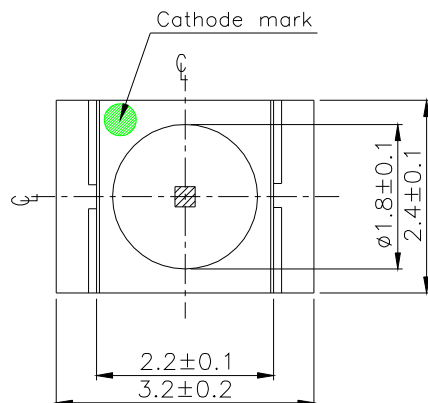
Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

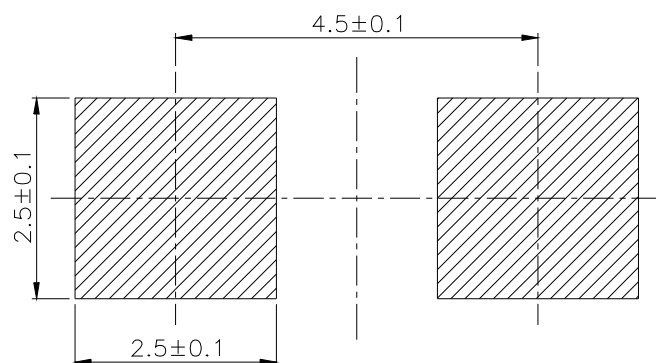
Device Selection Guide

Chip		Resin Color
Material	Emitted Color	
AlGaInP	Deep-Red	Water Clear

Package Outline Dimensions



For reflow soldering (propose)



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

**Absolute Maximum Ratings (Ta=25 °C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	25	mA
Peak Forward Current (Duty 1/10 @1KHz)	I _{FP}	60	mA
Power Dissipation	P _d	60	mW
Electrostatic Discharge (HBM)	ESD	2000	V
Operating Temperature	T _{opr}	-40 ~ +85	
Storage Temperature	T _{stg}	-40~ +90	
Soldering Temperature	T _{sol}	Reflow Soldering : 260 for 10 sec. Hand Soldering : 350 for 3 sec.	

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Electro-Optical Characteristics (Ta=25)

Parameter	Symbol	*Chip Rank	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	IV	A2	114	302	-----	mcd	If=20mA
		A3	286	459	-----		
		A4	343	573	-----		
		A5	457	742	-----		
		A6	571	913	-----		
Viewing Angle	2 θ 1/2	-----	-----	30	-----	deg	
Peak Wavelength	λ p	-----	-----	650	-----	nm	
Dominant Wavelength	λ d	-----	-----	639	-----	nm	
Spectrum Radiation Bandwidth	λ	-----	-----	20	-----	nm	
Forward Voltage	V _F	-----	1.7	2.0	2.4	V	
Reverse Current	I _R	-----	-----	-----	10	μ A	V _R =5V

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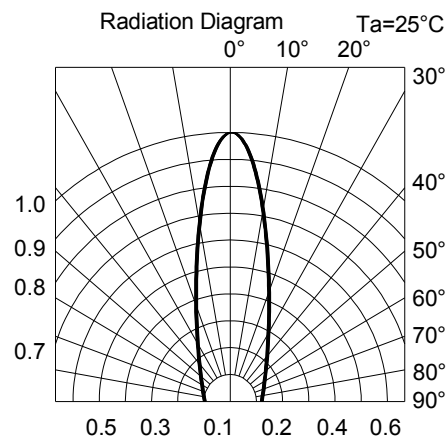
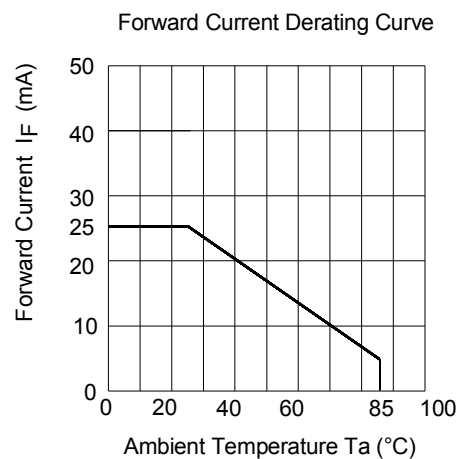
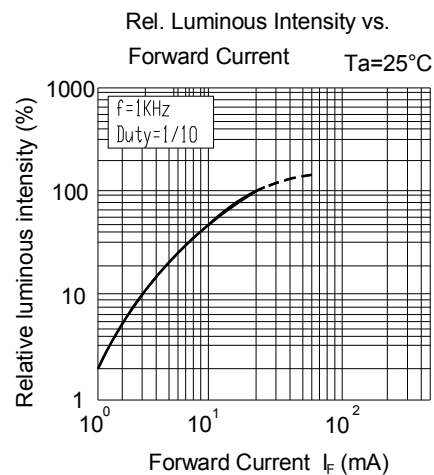
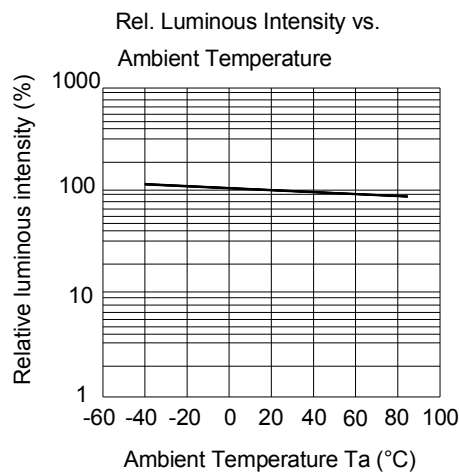
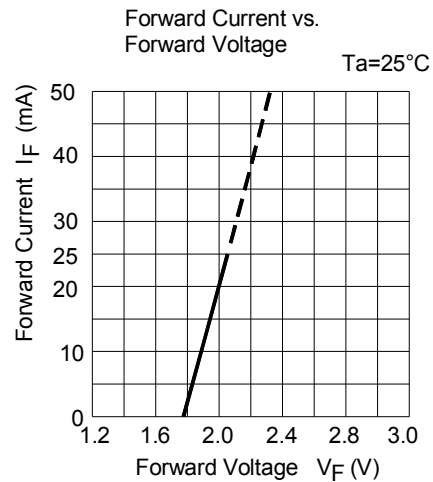
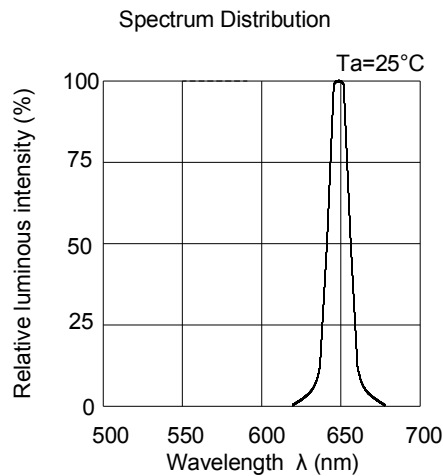
Chip Rank



Typical Electro-Optical Characteristics Curves

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Label explanation

Everlight Electronics Co., Ltd.

<http://www.everlight.com>

Revision : 3

Device No:DSE-421-039

Prepared date: 0

LifecyclePhase: 正式發行

EVERLIGHT



CPN: XXXXXX

P/N: XXXXXX



RoHS

f 11

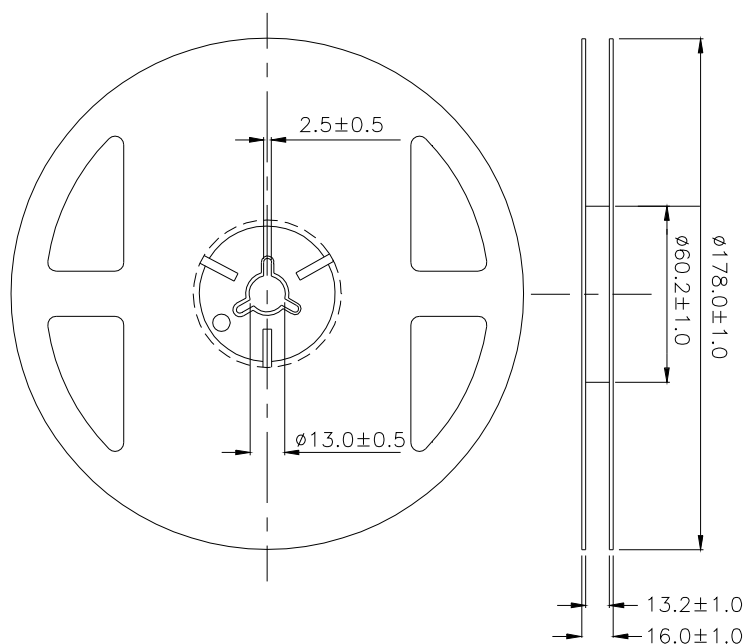
3.0

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

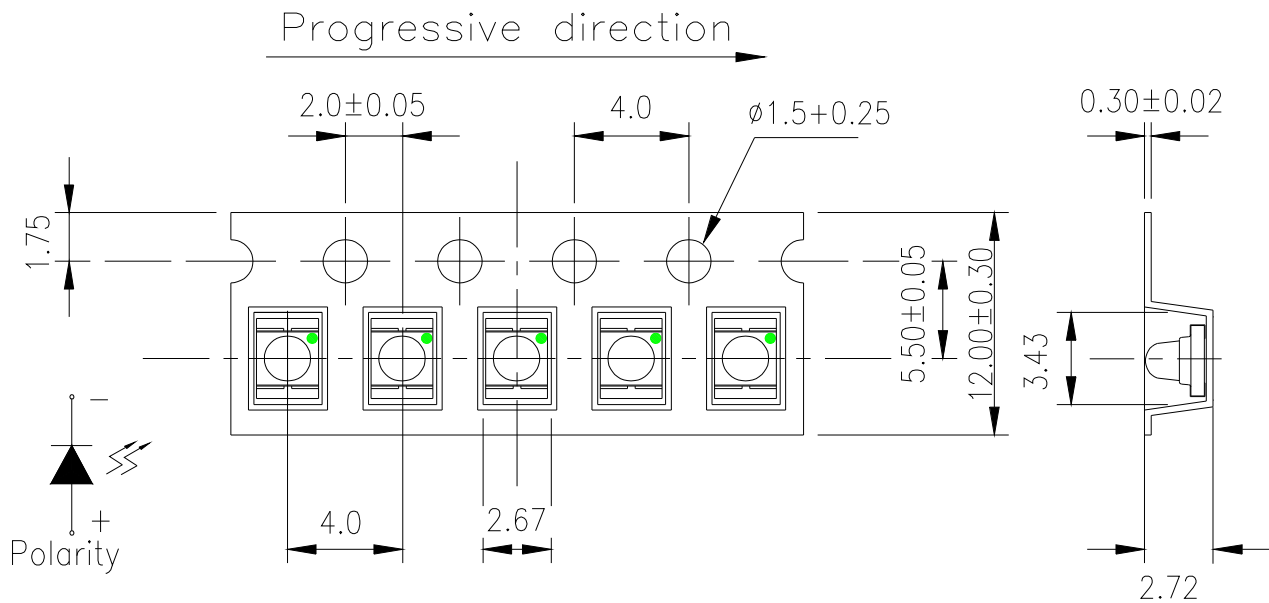
REF: Forward Voltage Rank

Reel Dimensions



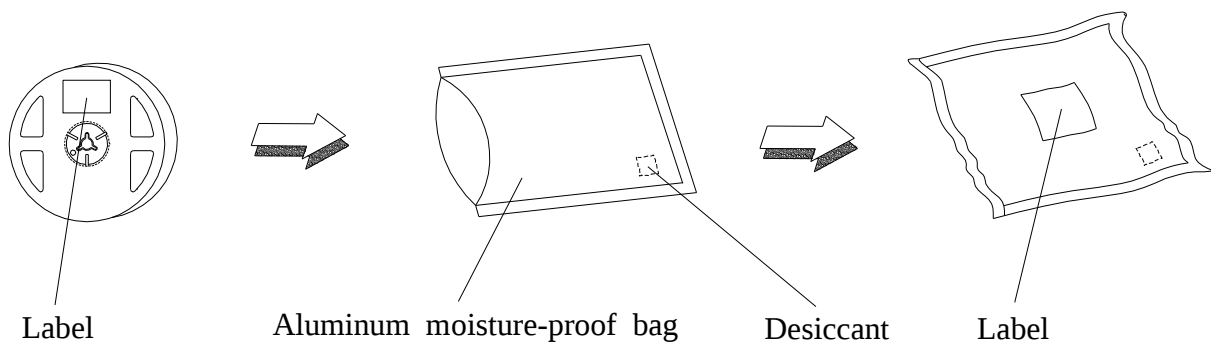
Note: Tolerances Unless Dimension $\pm 0.1\text{mm}$, Unit = mm

Carrier Tape Dimensions: Loaded quantity 1000 PCS per reel



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$,Unit = mm

Moisture Resistant Packaging



Reliability Test Items And Conditions

The reliability of products shall be satisfied with items listed below.

42-21SDRC/S530-XX/TR8

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260 ±5 Min. 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100 15min ∫ 5 min L : -40 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100 5min ∫ 10 sec L : -10 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I _F = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85 / 85%RH	1000 Hrs.	22 PCS.	0/1

Precautions For Use

1. Over-current-proof

42-21SDRC/S530-XX/TR8

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30 °C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 °C or less and 60% RH or less.

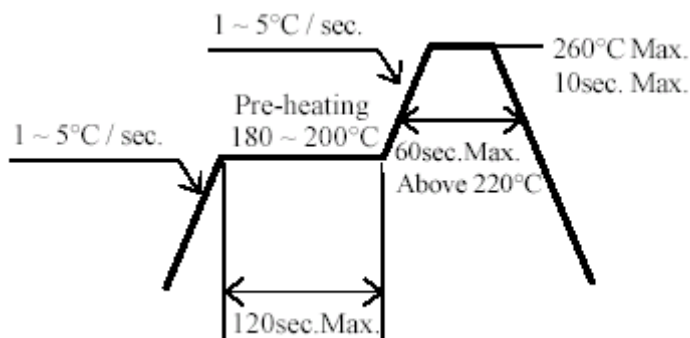
If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5 °C for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

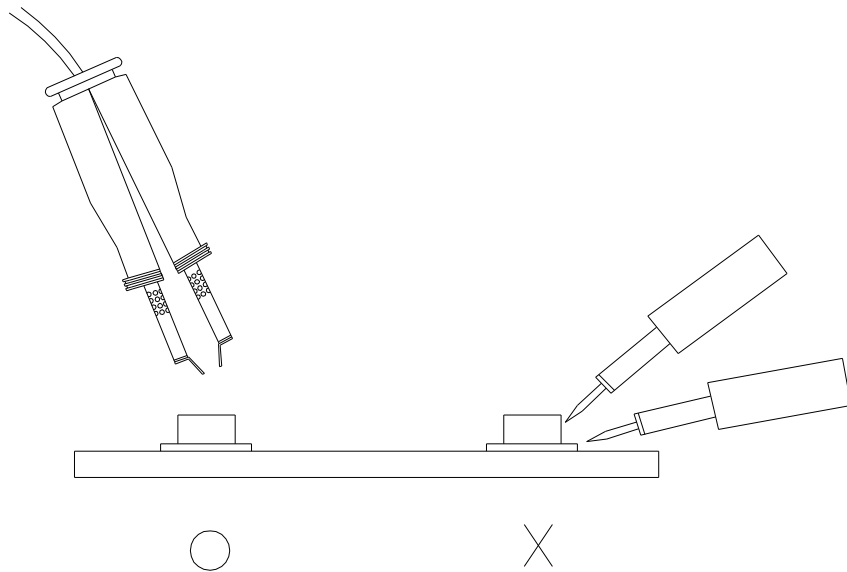
Each terminal is to go to the tip of soldering iron temperature less than 350 °C for 3 seconds

42-21SDRC/S530-XX/TR8

within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5.Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



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