EVERLIGHT ELECTRONICS CO., LTD.

Technical Data Sheet

0805 Package Chip LED (1.1mm Height)

17-21/G5C-AK0L2/3T

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.
- Pb-free.
- The product itself will remain within RoHS compliant version.

Descriptions

- The 17-21 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, lightweight makes them ideal for miniature applications, etc.

Applications

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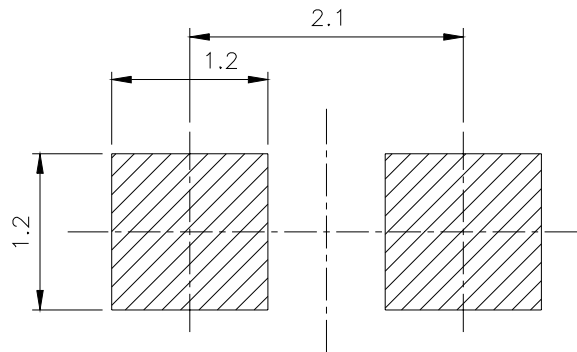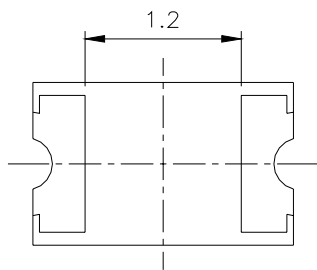- Flat backlight for LCD, switch and symbol.
- General use.

Device Selection Guide

PART No.	Chip		Lens Color
	Material	Emitted Color	
17-21/G5C-AK0L2/3T	GaP	Green	Water Clear

Package Outline Dimensions

1.25

R0.2

Cathode mark

1.4

2.0±0.2

Polarity

- ●   + ●

1.1±0.2

0.6
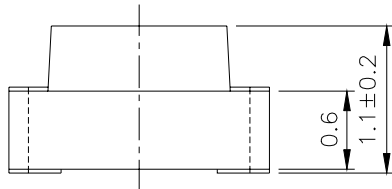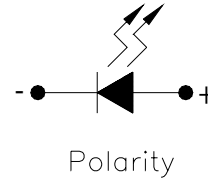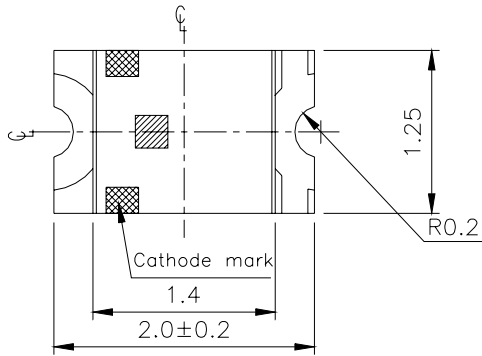
For reflow soldering

1.2

2.1

1.2

1.2

Note: The tolerances unless mentioned are ±0.1, unit = mm.

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Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V$_R$	5	V
Forward Current	I$_F$	30	mA
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	260 (for 5 seconds)	℃
Electrostatic Discharge	ESD	2000	V
Power Dissipation	Pd	100	mW
Peak Forward Current (Duty 1/10 @1KHz)	I$_{FP}$	60	mA

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	7.2	-----	18.0	mcd	I$_F$=20 mA
Viewing Angle	2θ1/2	-----	140	-----	deg	
Peak Wavelength	λp	-----	570	-----	nm	
Dominant Wavelength	λd	567.5	-----	575.5	nm	
Spectrum Radiation Bandwidth	$\triangle\lambda$	-----	20	-----	nm	
Forward Voltage	V$_F$	1.7	-----	2.4	V	
Reverse Current	I$_R$	-----	-----	10	μA	V$_R$=5V

Notes:

　1.Tolerance of Luminous Intensity ±10%

　2.Tolerance of Dominant Wavelength ±1nm

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Bin Range Of Dom. Wavelength

Group	Bin	Min	Max	Unit	Condition
A	C15	567.5	569.5	nm	IF=20mA
	C16	569.5	571.5		
	C17	571.5	573.5		
	C18	573.5	575.5		

Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
K0	7.20	11.5	mcd	IF=20mA
L1	11.5	14.5		
L2	14.5	18.0		

Notes:

1. **Tolerance of Luminous Intensity ±10%**

2. **Tolerance of Dominant Wavelength ±1nm**

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Typical Electro-Optical Characteristics Curves

Spectrum Distribution

Forward Current vs. Forward Voltage

Luminous Intensity vs. Ambient Temperature

Luminous Intensity vs Forward Current

Forward Current Derating Curve

Radiation Diagram
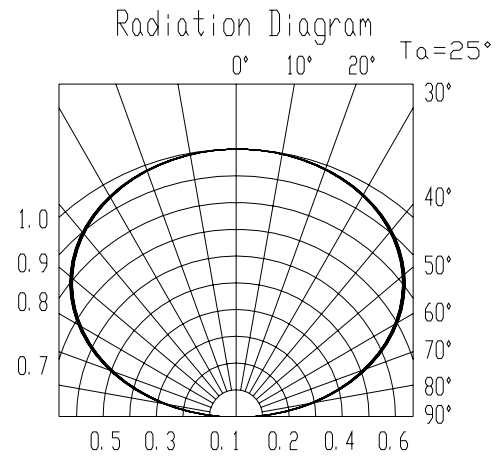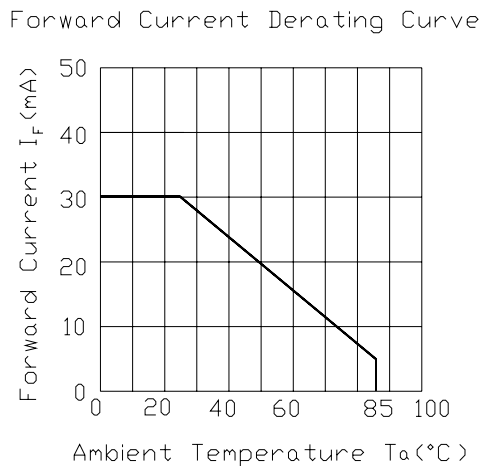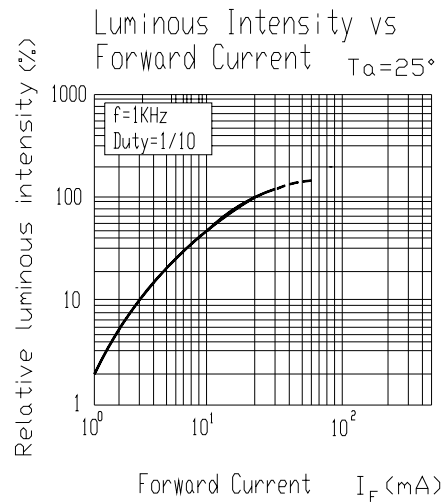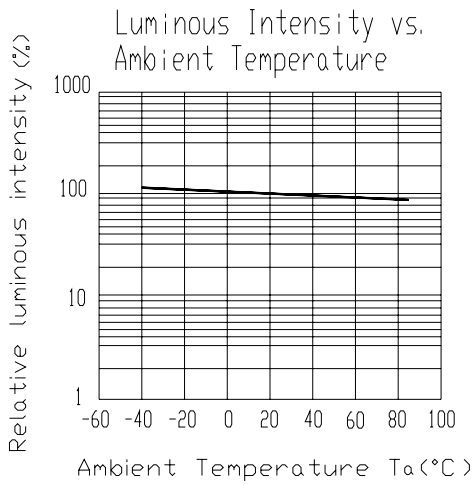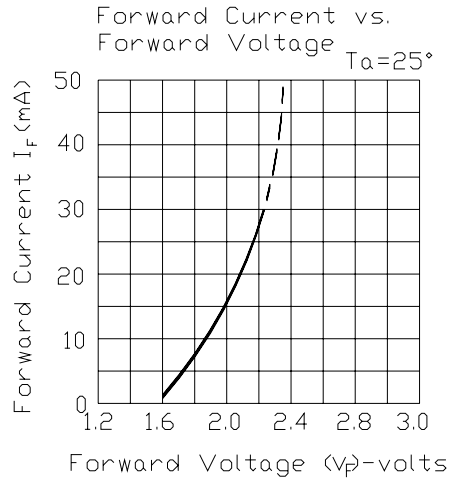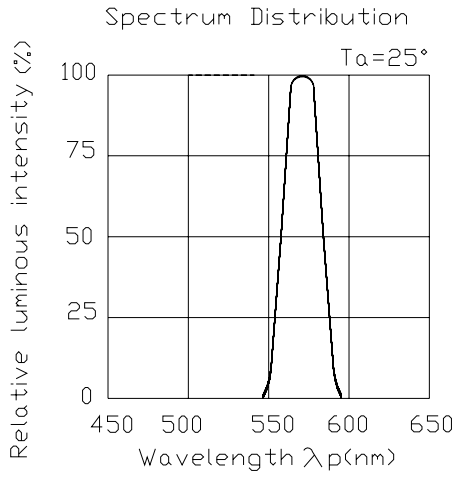
Label explanation

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

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CPN: XXXXXX
P/N: XXXXXX

RoHS

XXXXXXXXXXX

QTY: XXXX   CAT:
                            HUE:
                            REF:

LOT NO: XXXXXXX

MADE IN TAIWAN

Reel Dimensions
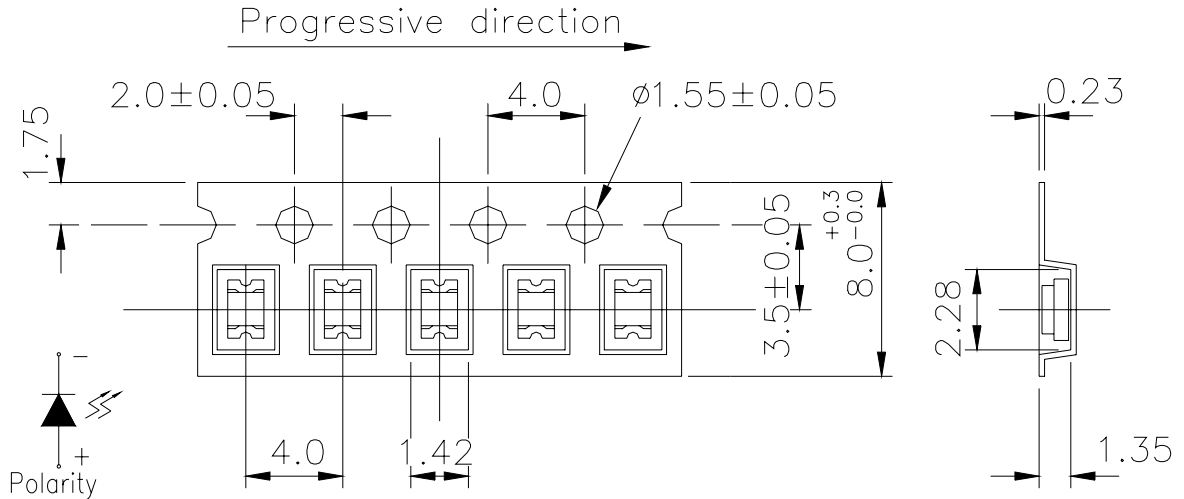

2.2±0.5

ø6.0±10

ø178.0±1.0

ø13.0 ± 0.5

9.0±1.0
12.0±1.0
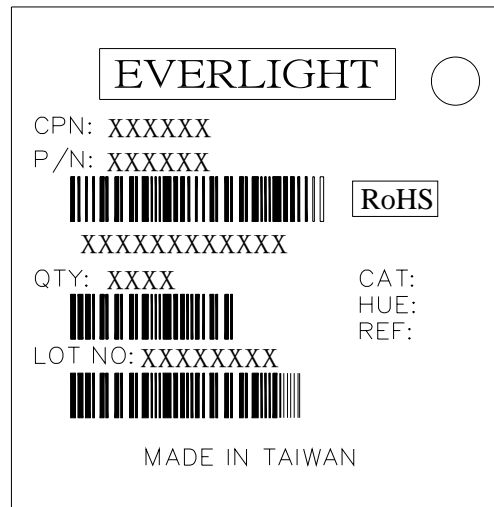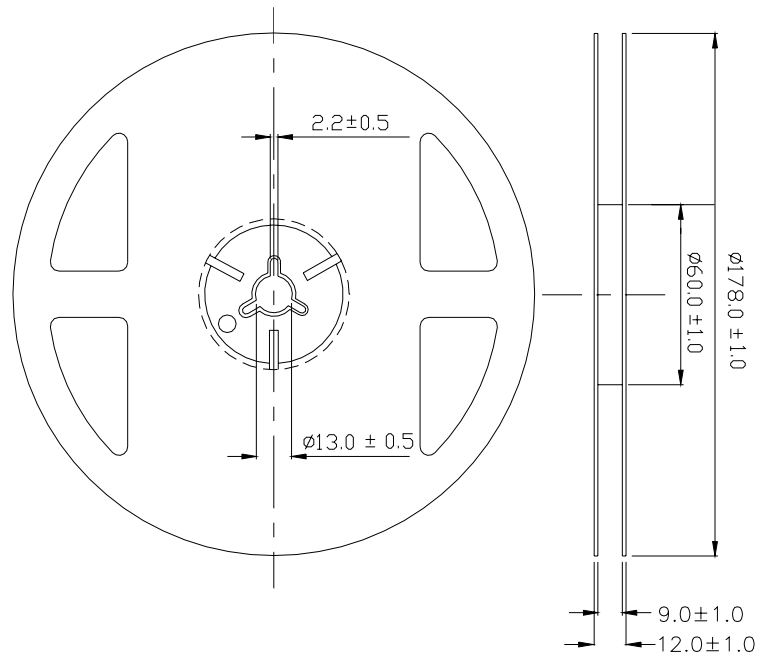
Note: The tolerances unless mentioned are ±0.1, unit = mm.

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Carrier Tape Dimensions: Loaded quantity 3000 PCS per reel

Progressive direction

2.0±0.05   4.0   ⌀1.55±0.05   0.23

1.75

3.5±0.05   8.0$_{-0.0}^{+0.3}$ 2.28

4.0   1.42   1.35

−

+

Polarity

Note: The tolerances unless mentioned are ±0.1, unit = mm.

Moisture Resistant Packaging

Label   Aluminum moisture-proof bag   Desiccant   Label
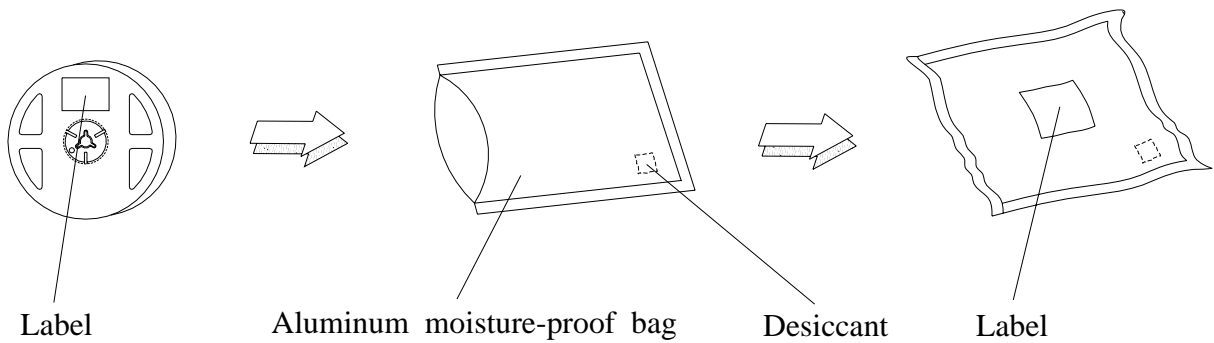
Reliability Test Items And Conditions

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

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

   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℃ or less and 90%RH or less.

   2.3 The LEDs should be used within a year.

   2.4 After opening the package, the LEDs should be kept at 30℃ or less and 70%RH or less.

   2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

   2.6 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℃ for 24 hours.

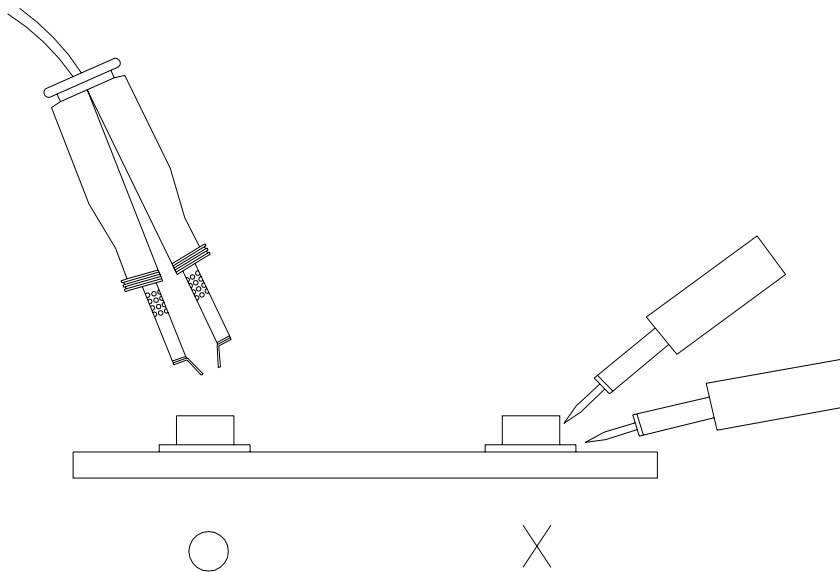3. Soldering Condition

3.1 Pb-free solder temperature profile
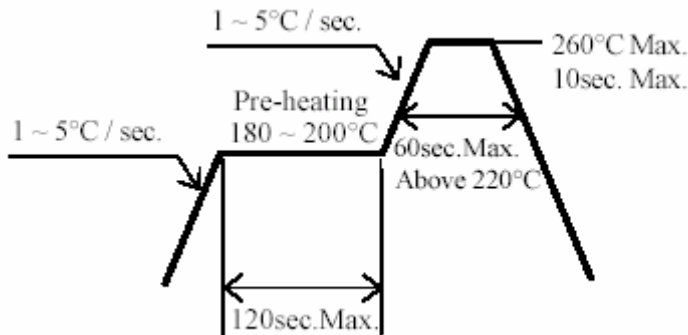
3.2 Reflow soldering should not be done more than two times.

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 280℃ for 3 seconds 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.