Technical Data Sheet

Top View LEDs

45-21/YSC-AU1V1C/2T

Features



- Top view red LEDs
- White SMT package.
- Lead frame package with individual 2 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering
- Pb-free.
- The product itself will remain within RoHS compliant version.

Descriptions

- The 45-21 series is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the device ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

- Telecommunication: indicator and backlighting in telephone and fax
- Flat backlight for LCD, switch and symbol
- Light pipe application
- General use

Device Selection Guide

Chip Material	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow	Water Clear

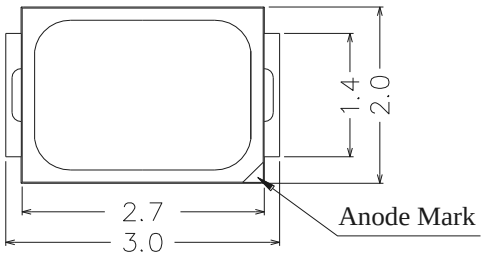
Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

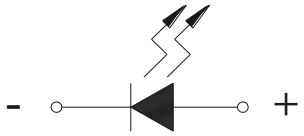
Technical Data Sheet

Top View LEDs

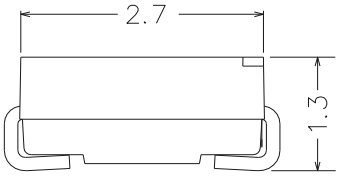
45-21/YSC-AU1V1C/2T

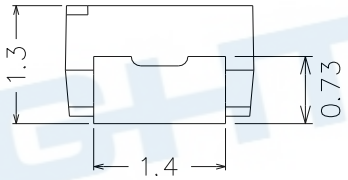
Package Outline Dimensions

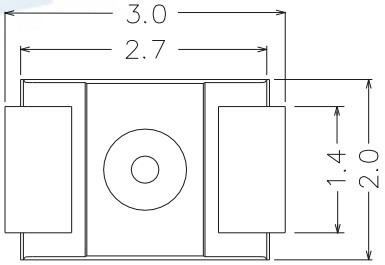


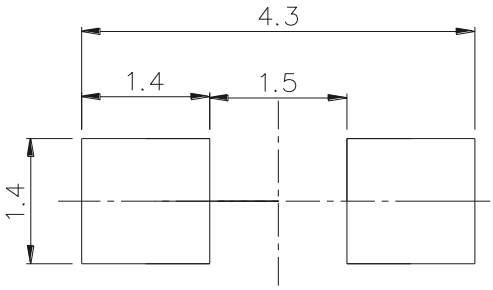


Polarity









Recommended soldering pad design

Note: Tolerances unless mentioned is ±0.1mm; Unit = mm

Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

Technical Data Sheet

Top View LEDs

45-21/YSC-AU1V1C/2T

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	120	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Soldering Temperature	Tsol	Reflow Soldering: 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Note: The products are sensitive to static electricity and must be carefully taken when handling products.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	450	-----	900	mcd	I_F=20mA
Viewing Angle	2θ1/2	----	120	----	deg	
Peak Wavelength	λp	----	591	----	nm	
Dominant Wavelength	λd	585.5	-----	594.5	nm	
Spectrum Radiation Bandwidth	Δλ	----	15	----	nm	
Forward Voltage	V_F	1.95	----	2.55	V	
Reverse Current	I_R	----	----	10	μA	V_R=5V

Notes:

1.Tolerance of Luminous Intensity: ±11%

2. Tolerance of Dominant Wavelength: ±1nm

3. Tolerance of Forward Voltage: ±0.1V

Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

Technical Data Sheet

Top View LEDs

45-21/YSC-AU1V1C/2T

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Conduction
U1	450	565	mcd	I_F=20mA
U2	565	715		
V1	715	900		

Bin Range of Dominant Wavelength

Group	Bin Code	Min.	Max.	Unit	Condition
A	D3	585.5	588.5	nm	I_F =20mA
	D4	588.5	591.5		
	D5	591.5	594.5		

Bin Range of Forward Voltage

Group	Group	Min.	Max.	Unit	Condition
C	1	1.95	2.15	V	I_F=20mA
	2	2.15	2.35		
	3	2.35	2.55		

Notes:

1.Tolerance of Luminous Intensity: ±11%

2. Tolerance of Dominant Wavelength: ±1nm

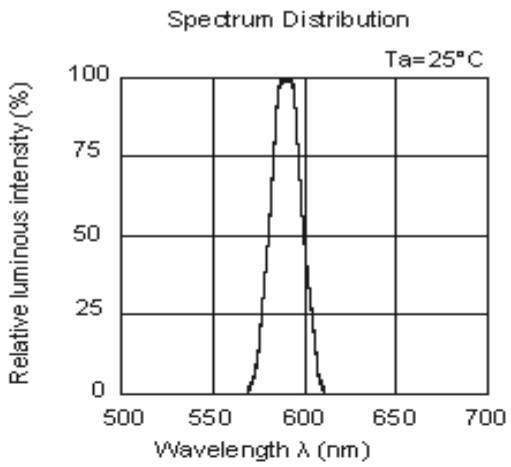
3. Tolerance of Forward Voltage: ±0.1V

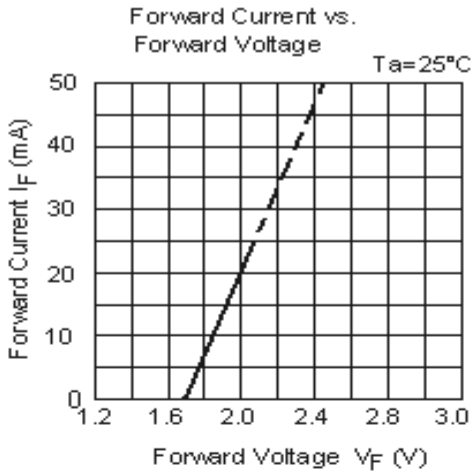
Technical Data Sheet

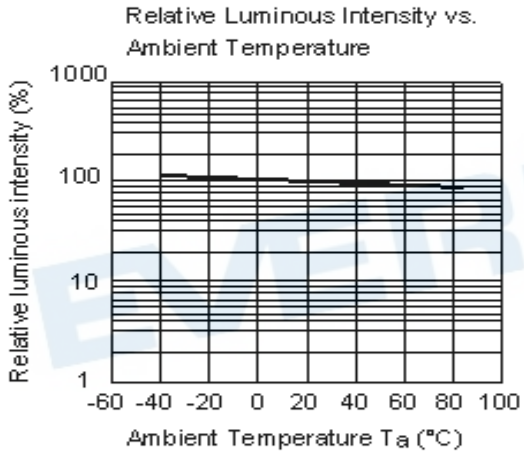
Top View LEDs

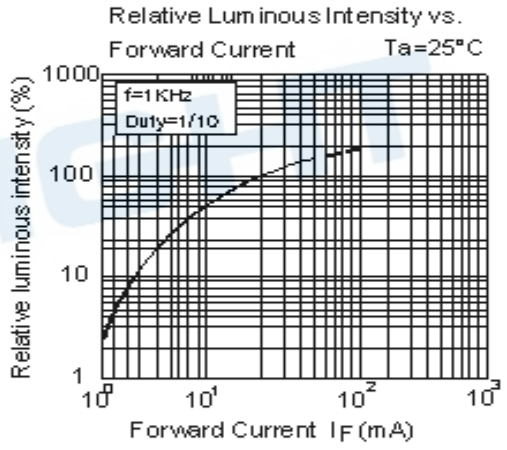
45-21/YSC-AU1V1C/2T

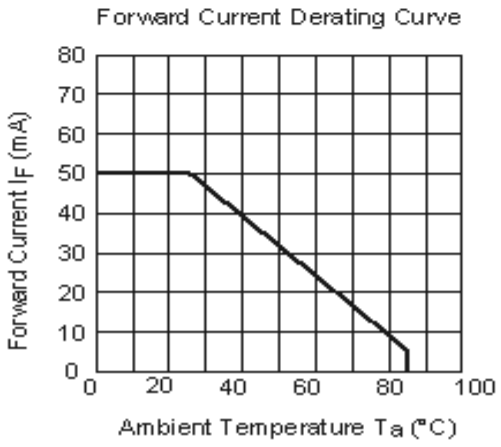
Typical Electro-Optical Characteristics Curves

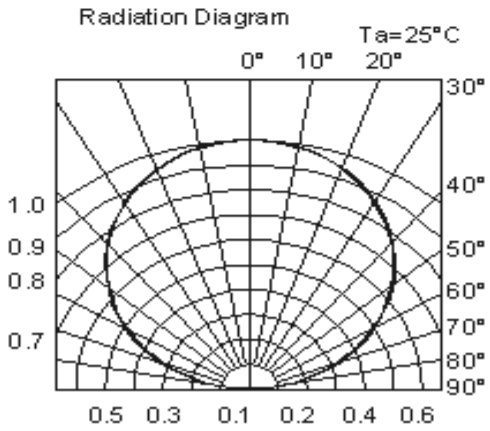












Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

Technical Data Sheet

Top View LEDs

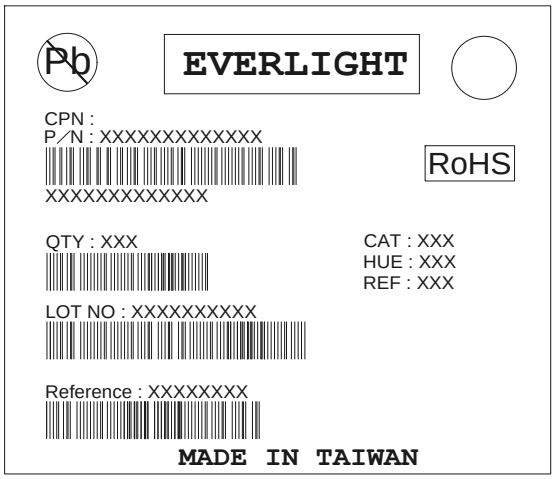
45-21/YSC-AU1V1C/2T

Label Explanation

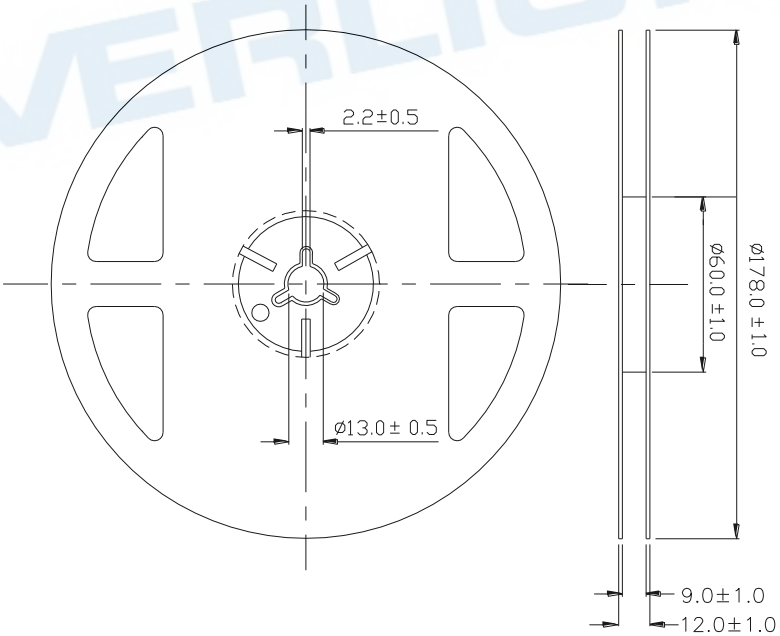
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



Reel Dimensions



Note:.Tolerance unless mentioned is ±0.1mm; Unit = mm

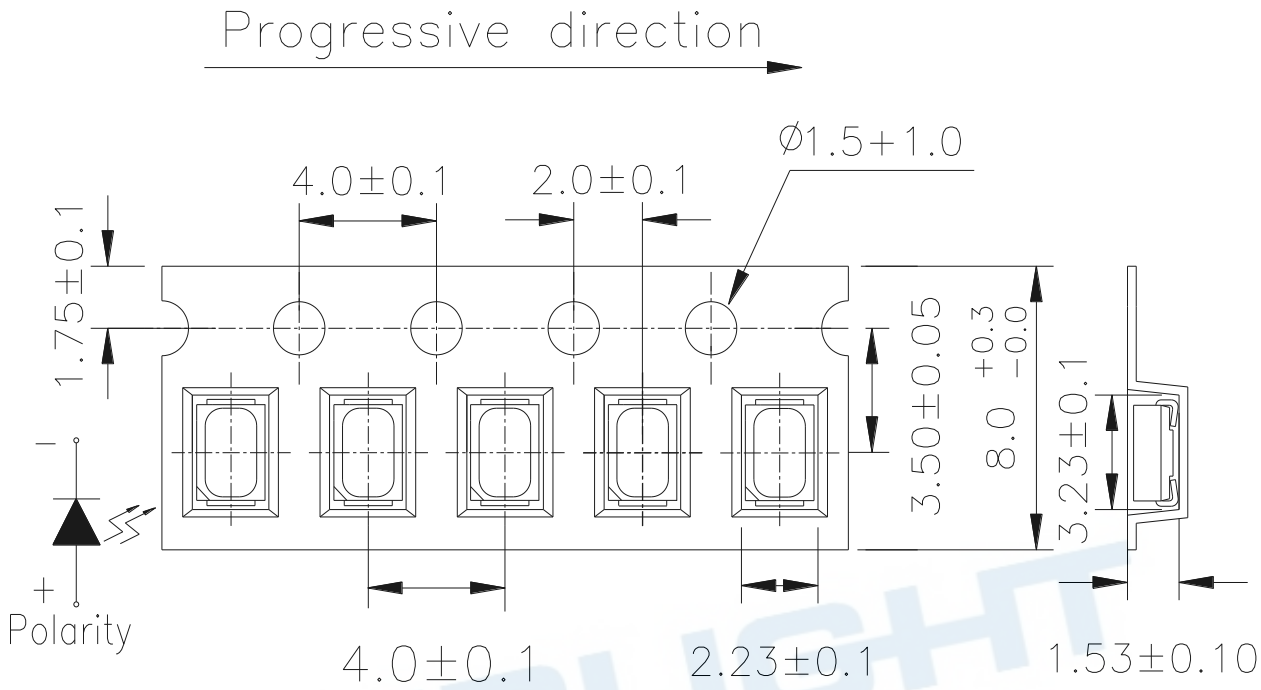
Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

Technical Data Sheet

Top View LEDs

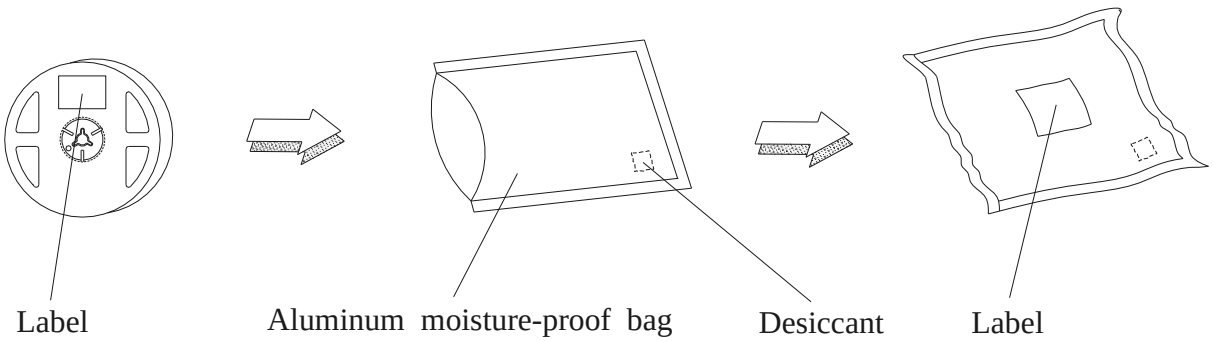
45-21/YSC-AU1V1C/2T

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Note: Tolerance unless mentioned is ±0.1mm; Unit = mm

Moisture Resistant Packaging



Technical Data Sheet

Top View LEDs

45-21/YSC-AU1V1C/2T

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. 10 sec.	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 / 25℃	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	1000 Hrs.	22 PCS.	0/1

Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

Technical Data Sheet

Top View LEDs

45-21/YSC-AU1V1C/2T

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.

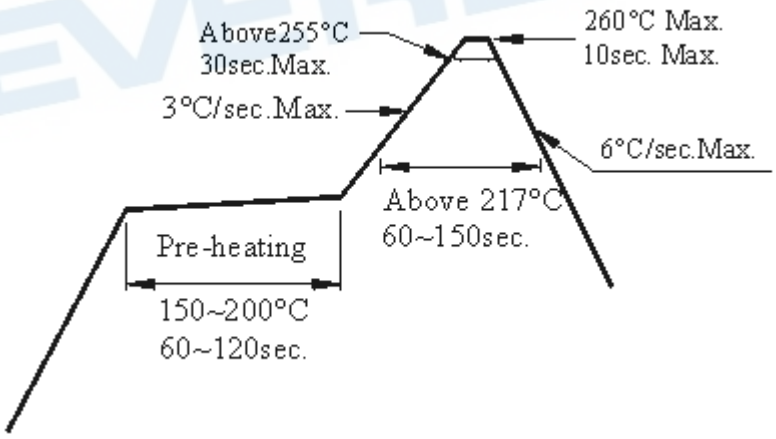
   2.2 Before opening the package: The LEDs should be used within one year and kept at 30℃ or less and 70%RH or less.

   2.3 After opening the package: We recommend that the LED should be soldered quickly (within 3 days).The soldering condition is 30℃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℃ for 24 hours.(One time only)

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.

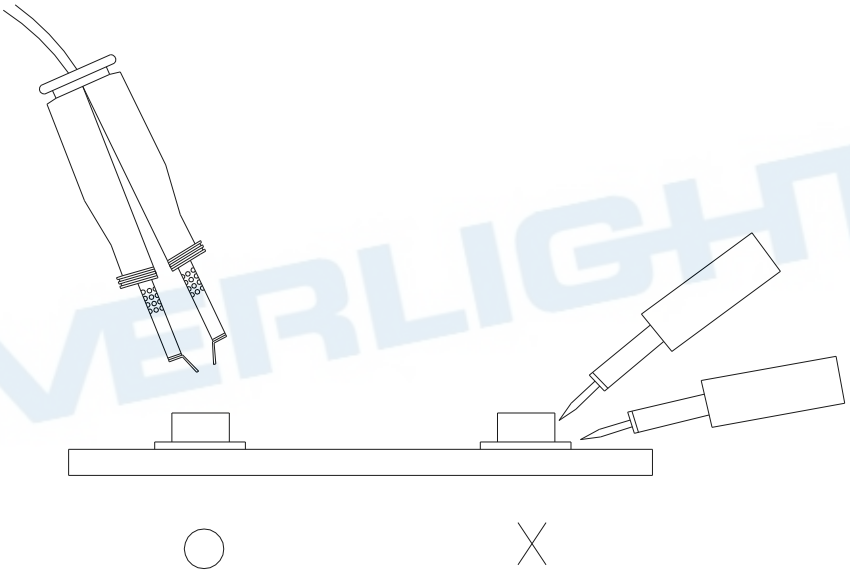
Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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.



EVERLIGHT ELECTRONICS CO., LTD.
Office: No 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C
Tel: 886-2-2267-2000, 2267-9936
Fax: 886-2267-6244, 2267-6189, 2267-6306
http://www.everlight.com

Ver.:2 Release Date:10/09/2012 狀態:Approved(正式發行)