MODEL NO: 12-21UBGC/TR8

> Device Number: DSE-121-043 REV. 1.0

Chip LEDs with Right Angle Lens

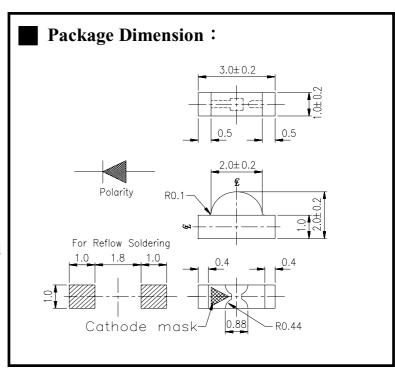
ECN: Page: 1/8

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.

Description:

- The 12-21 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.

PART NO

12-21UBGC/TR8

Telecommunication: indicator and backlighting in telephone and fax. Angle $\pm 0.5^{\circ}$

Material

InGaP/SiC

Substrate

CHIP

Green

Unit = mmFlat backlight for LCD, switch and symbol.

General use.

HIP	Lens Color			
Emitted Color	Lons Color			
Super Blue	W CI			

Water

Clear

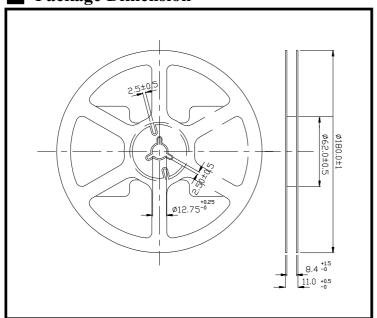
Notes:

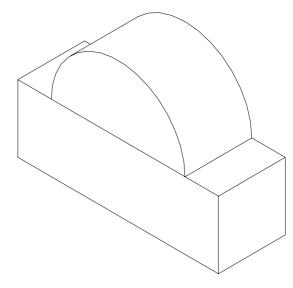
Tolerances Unless Dimension	± 0.1 mm

Chip LEDs with Right Angle Lens

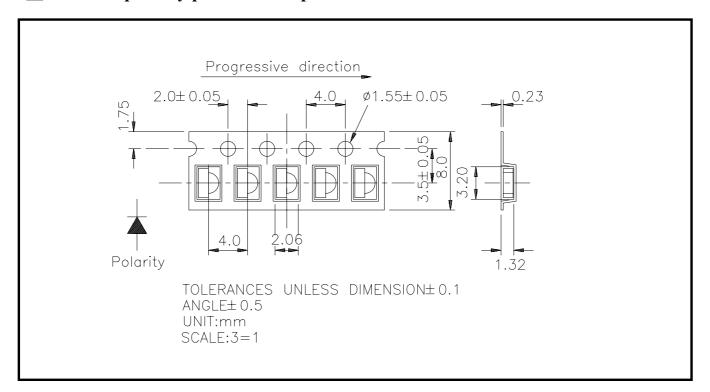
ECN: Page: 2/8

■ Package Dimension:





■ Loaded quantity per reel 3000 pcs/reel:



MODEL NO: 12-21UBGC/TR8	Device Number: DSE	E-121-043 REV. 1.0
Chip LEDs with Right Angle Lens		
	ECN:	Page: 3/8

Absolute Maximum Ratings at $Ta = 25^{\circ}C$

Parameter	Symbol	Rating	Unit
Reverse Voltage	Vr	5	V
Forward Current	If	25	mA
Operating Temperature	Topr	-40 ~ +85	$^{\circ}\!\mathbb{C}$
Storage Temperature	Tstg	-40 ~ +90	$^{\circ}\!\mathbb{C}$
Soldering Temperature	Tsol	260 (for 5 second)	$^{\circ}\!\mathbb{C}$
Electrostatic Discharge	ESD	1000	V
Power Dissipation	Pd	120	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	If(Peak)	100	mA

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Luminous intensity	Iv		4		mcd	If=2mA
		40	68		mcd	If=20mA
Viewing Angle	2 \theta 1/2		120		deg	If=20mA
Peak Wavelength	λр		502		nm	If=20mA
Dominant Wavelength	λd		505		nm	If=20mA
Spectrum Radiation Bandwidth	Δλ		30		nm	If=20mA
Forward Voltage	Vf		3.5	4.0	V	If=20mA
Reverse Current	Ir			10	μ A	Vr=5V

MODEL NO:	12-21UBGC/TR8	Device Number:	DSE-121-043		1.0
Chip LEDs wit	th Right Angle Lens				
		ECN:		Page:	4/8

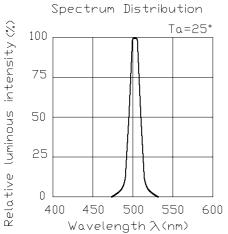
Reliability Test Item And Condition

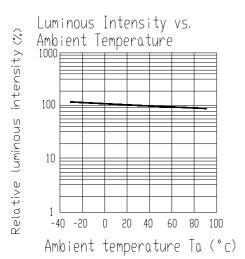
NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP: 260°C ± 5 °C	5 SEC	76 Pcs	0/1
2	Temperature Cycle	H: +85°C 30min ∫ 5 min L: -55°C 30min	50 CYCLE	76 Pcs	0/1
3	Thermal Shock	H:+100°C 5min ∫ 10 sec L:-10°C 5min	50 CYCLE	76 Pcs	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 Pcs	0/1
5	Low Temperature Storage	TEMP : -55°℃	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

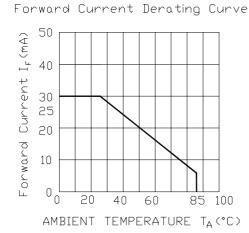
Chip LEDs with Right Angle Lens

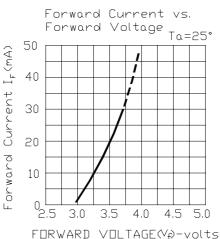
ECN: Page: 5/8

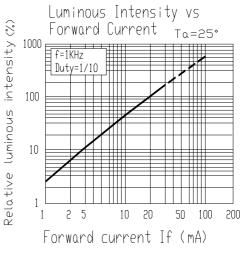


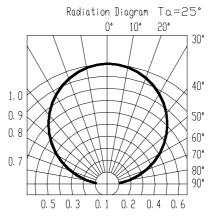








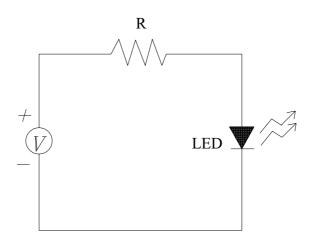




Chip LEDs with Right Angle Lens

ECN: Page: 6/8

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).

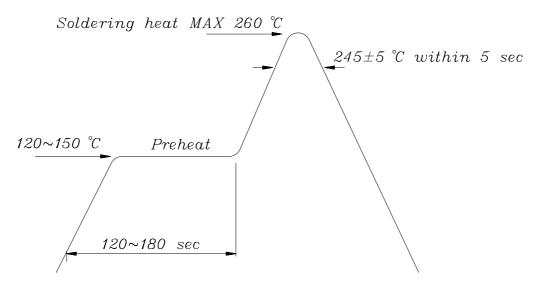
- 2. Storage time
 - 2.1 The operation of temperature and R.H. are : 5° C ~35 $^{\circ}$ C, R.H.60%.
 - 2.2 Once the package is opened, the products should be used within a week. Otherwise, they should be keeping in a dampproof box with desiccants. Considering the tape life, we suggest our customers 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.

Chip LEDs wit	th Right Angle Lens		 	
MODEL NO:	12-21UBGC/TR8	Device Number:		

ECN: Page: 7/8

Soldering heat reliability (DIP)

Please refer to the following figure:

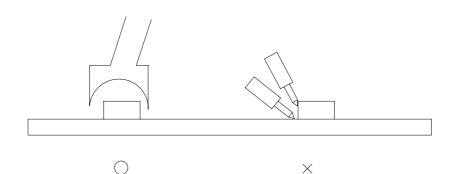


Soldering Iron

Basic spec is ≤ 5 sec when 260°C. If temperature is higher, time should be shorter (+10°C \rightarrow -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 $^{\circ}\text{C}$.
- 2. The head of iron can not touch copper foil.
- 3. Twin-head type is preferred.



Chip LEDs with Right Angle Lens

ECN: Page: 8/8

Reflow Temp / Time:

