

1.9mm Round Subminiature "Z-Bend" Lead (Square Base) LEDs

 MODEL NO : 91-21UBGC/TR10

■ Features :

- PACKAGE IN 12mm TAPE ON 7" DIAMETER REELS.
- COMPATIBLE WITH AUTOMATIC PLACEMENT EQUIPMENT.
- COMPATIBLE WITH INFRARED AND VAPOR PHASE REFLOW SOLDER PROCESS.
- EIA STD PACKAGE.
- I.C. COMPATIBLE.
- MONO-COLOR TYPE.

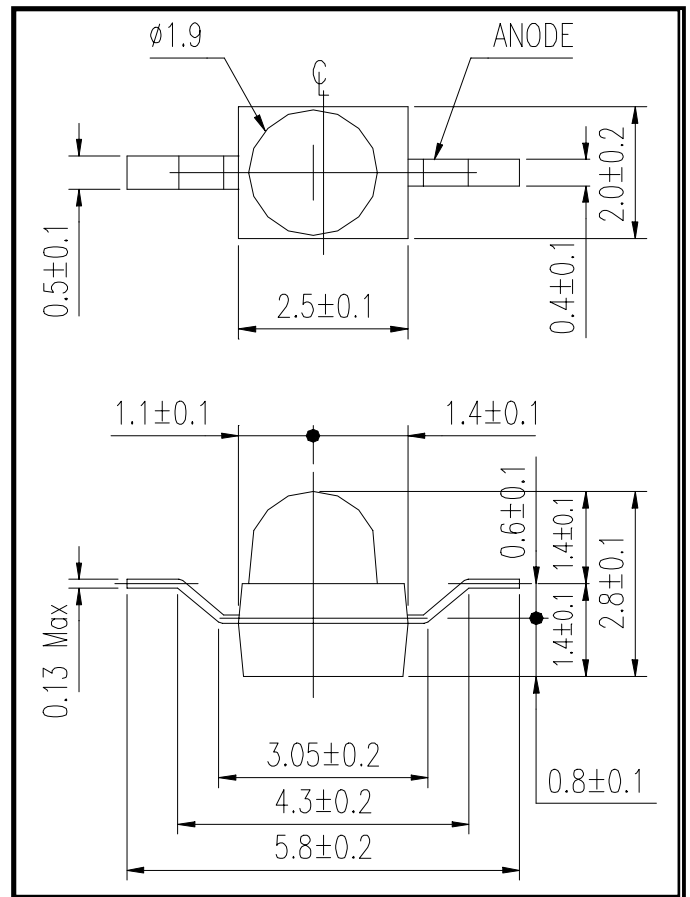
■ Description :

- THE 91-21 SMD TAPING IS MUCH SMALLER THAN LEADED COMPONENTS. THUS ENABLING SMALLER BOARD SIZE, HIGHER PACKING DENSITY, REDUCED STORAGE SPACE AND FINALLY SMALLER EQUIPMENT TO BE OBTAINED.
- BESIDES, LIGHT WEIGHT MAKES THEM IDEAL FOR MINIATURE APPLICATION, ECT.
- FURTHERMORE BY AUTOMATION ASSEMBLY MACHINES THE ACCURACY IS ANTICIPATED.

■ Applications :

- AUTOMOTIVE : BACKLIGHTING IN DASHBOARD AND SWITCH.
- TELECOMMUNICATION : INDICATOR AND BACKLIGHTING IN TELEPHONE AND FAX.
- INDICATOR AND BACKLIGHT FOR AUDIO AND VIDEO EQUIPMENT.
- INDICATOR AND BACKLIGHT FOR BATTERY DRIVEN EQUIPMENT.
- SMALL INDICATOR FOR OUTDOOR APPLICATIONS.
- INDICATOR AND BACKLIGHT IN OFFICE EQUIPMENT.
- FLAT BACKLIGHT FOR LCD, SWITCH AND SYMBOL.
- GENERAL USE.

■ Package Dimension :



PART NO.	CHIP		Lens Color
	Material	Emitted Color	
91-21UBGC/TR10	InGaN/SiC Substrate	Super Blue Green	Water Clear

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■ **Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Rating	Unit
Reverse Voltage	Vr	5	V
Forward Current	If	30	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	Tsol	260 ± 5 for 5 sec	°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.	TYP.	MAX.	Unit	Condition
Luminous intensity	Iv	407	703	----	mcd	If = 20mA
Viewing Angle	2θ 1/2	----	25	----	deg	
Peak Wavelength	λ p	----	502	----	nm	
Dominant Wavelength	λ d	----	505	----	nm	
Spectrum Radiation Bandwidth	Δ λ	----	30	----	nm	
Forward Voltage	Vf	----	3.5	4.0	V	
Reverse Current	Ir	----	----	10	μ A	Vr=5V



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DEVICE NUMBER : DLE-912-113 REV : 1.0

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■ 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 30 min ↑ 5 min ↓ L : -55°C 30 min	50 cycle	76 pcs	0/1
3	Thermal Shock	H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 30 min	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°C	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% R.H.	1000 hrs	76 pcs	0/1

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Typical Electro-Optical Characteristic Curres

