

**Technical Data Sheet**

**1.9mm Round Subminiature Lead LEDs**

**95-21UBC/C470/XXX**

**Features**

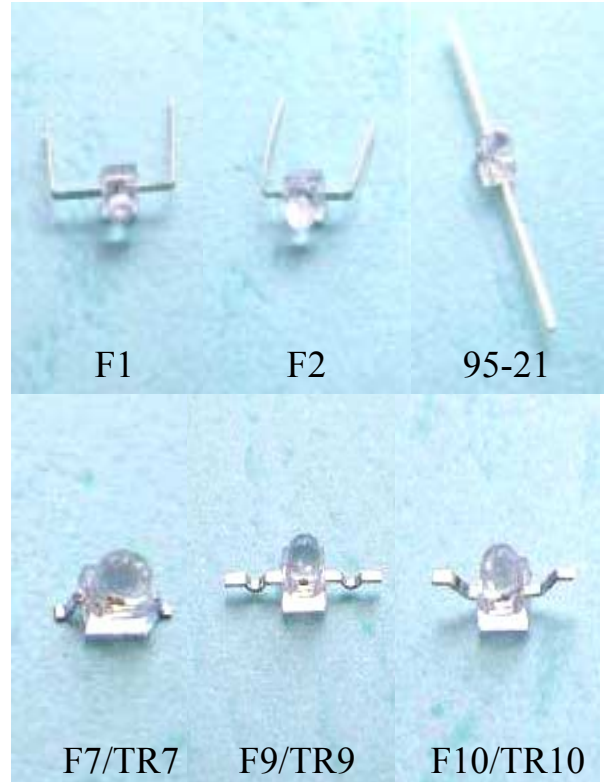
- Package in 12mm tape on 7" diameter reels.
- Compatible with automatic placement equipment.
- EIA Std. package.
- Mono-color type.

**Descriptions**

- The 95-21 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 , light weight makes them ideal for miniature applications.
- Further more by automation assembly machines the accuracy is anticipated.

**Applications**

- Small indicator for indoor applications.
- Flat backlight for LCD, switches and symbols.
- Indicator and backlight in office equipment.
- Indicator and backlight for battery driven equipment.
- Indicator and backlight for audio and video equipment.
- Automotive : backlighting in dashboards and switches.
- Telecommunication : indicator and backlighting in telephone and fax.

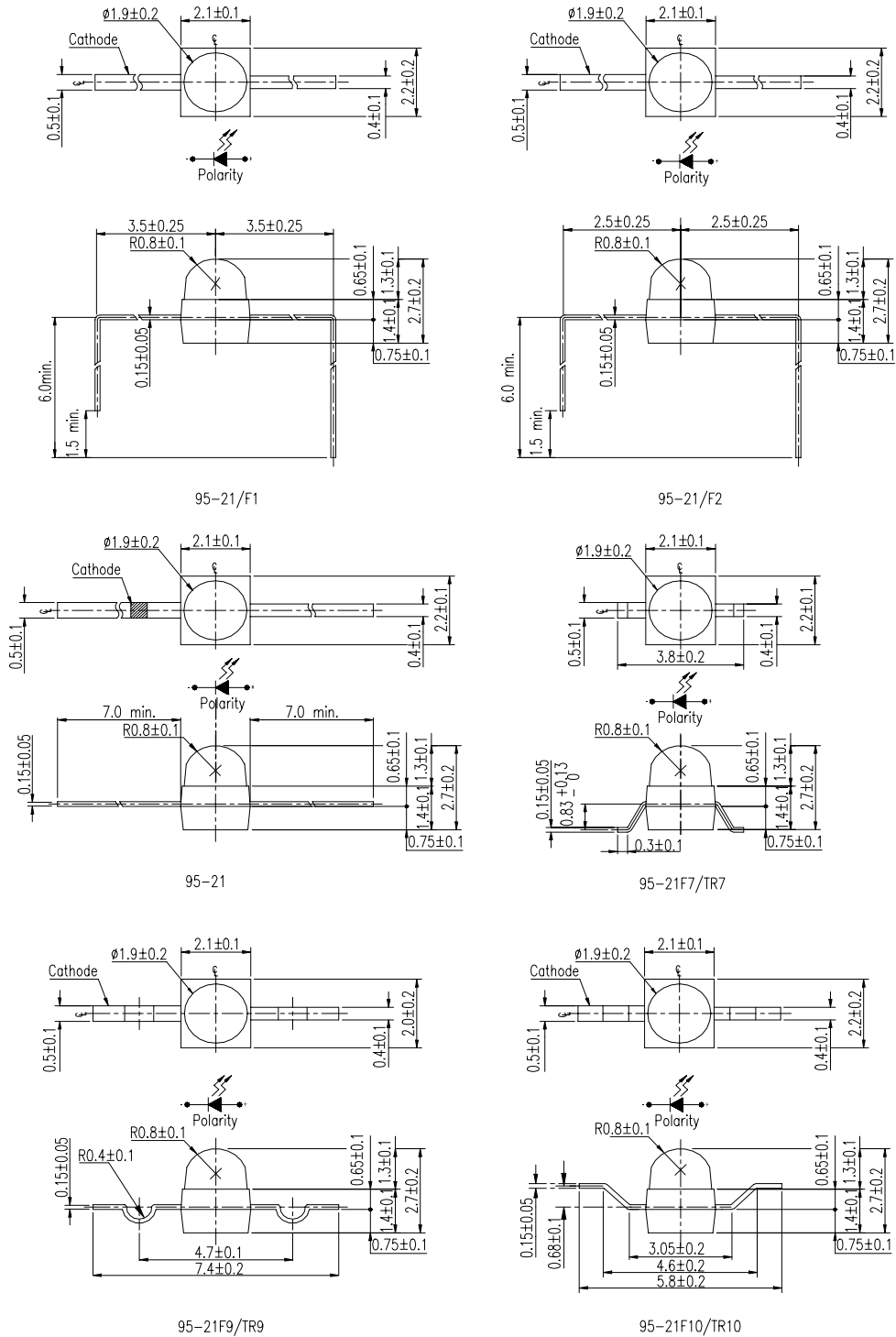


**Device Selection Guide**

Chip		Lens Color
Material	Emitted Color	
InGaN/SiC	Blue	Water Clear

**95-21UBC/C470/XXX**

**Package Outline Dimensions**



Note: Unit=mm

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

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	30	mA
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Soldering Temperature	T <sub>sol</sub>	260 for 5 seconds	°C
Electrostatic Discharge	ESD	1000	V
Power Dissipation	P <sub>d</sub>	120	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	I <sub>F</sub>	100	mA

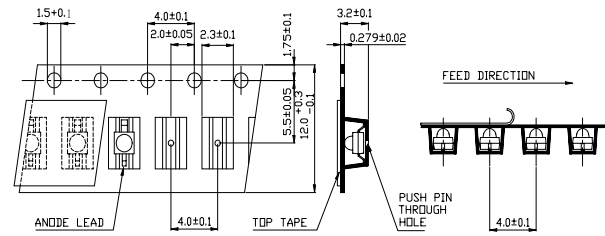
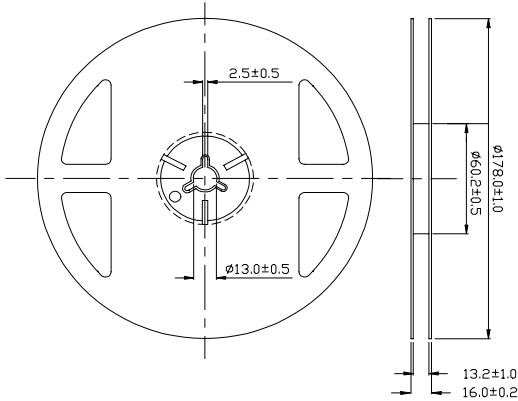
**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	213	270		mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ 1/2	----	25	----	deg	
Peak Wavelength	λ <sub>p</sub>	----	468	----	nm	
Dominant Wavelength	λ <sub>d</sub>	----	470	----	nm	
Spectrum Radiation Bandwidth	Δλ	----	26	----	nm	
Forward Voltage	V <sub>F</sub>	----	3.5	4.3	V	
Reverse Current	I <sub>R</sub>	----	----	50	μA	V <sub>R</sub> =5V

**95-21UBC/C470/XXX**

**Reel & Carrier Tape Dimensions**

**Loaded quantity per reel 1000 PCS/reel**



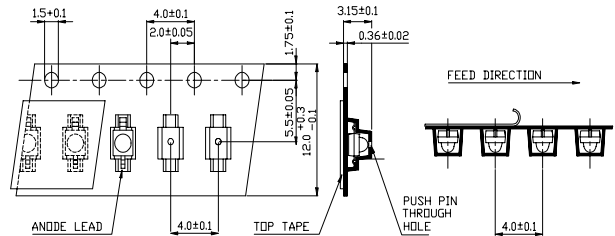
**TR7**

**Material Descriptions**

**95-21 UBC / XXX / XXX**

- 1
- 2
- 3
- 4

1.production part no.:95-21



**TR9**

2.chip part no.& epoxy color

GaN/SiC =UB...

C = water clear

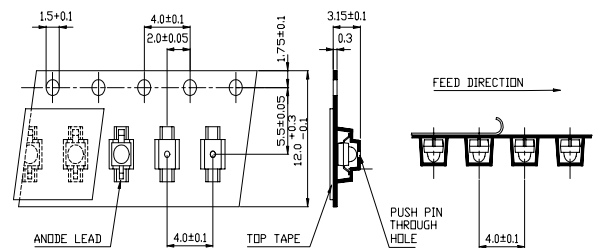
3.peak wavelength:

C470= $\lambda_p$

4.packing method:

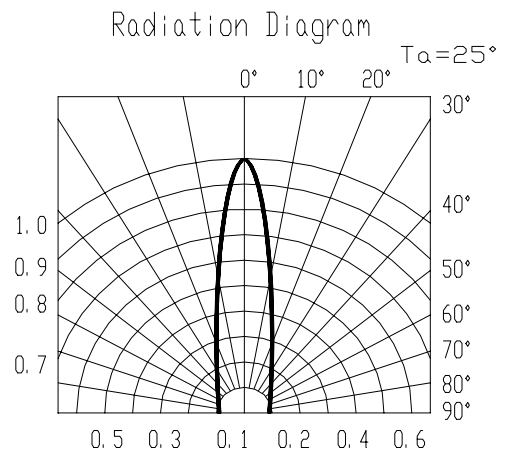
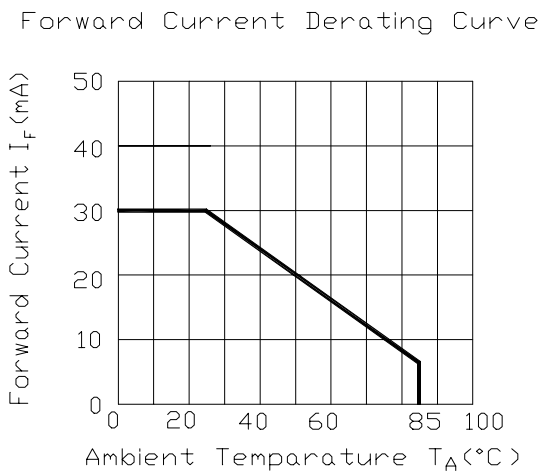
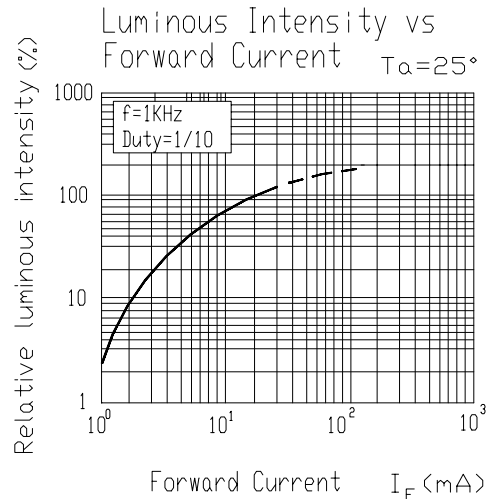
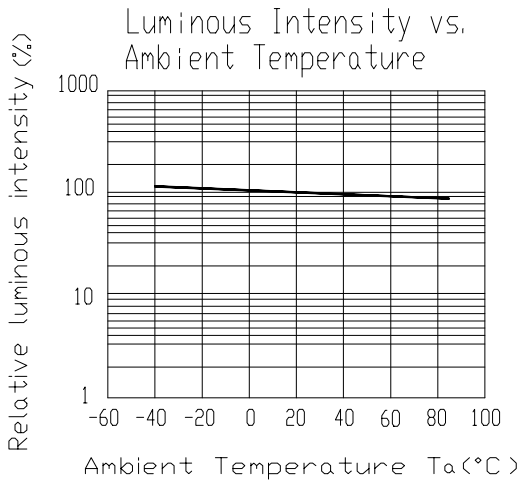
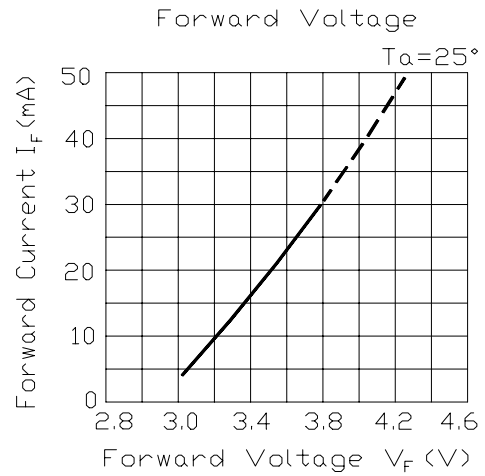
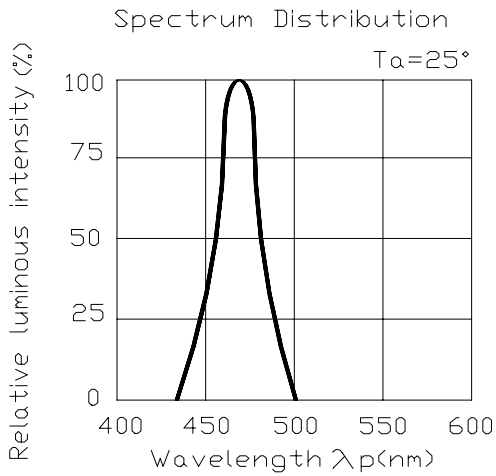
(1)NONE,F1,F2, F7,F9,F10 : Bulk

(2) TR7,TR9,TR10 : Taping



**TR10**

**Typical Electro-Optical Characteristics Curves**



**95-21UBC/C470/XXX****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	Temp. : 240°C ± 5°C Min. 5 sec.	6 min.	22 Pcs.	0/1
2	Temperature Cycle	H : +100°C 15min. § 5 min. L : -40°C 15min.	300 Cycles	22 Pcs.	0/1
3	Thermal Shock	H : +100°C 5min. § 10 sec. L : -10°C 5min.	300 Cycles	22 Pcs.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 Pcs.	0/1
5	Low Temperature Storage	Temp. : -55°C	1000 Hrs.	22 Pcs.	0/1
6	DC Operating Life	I <sub>F</sub> = 20 mA	1000 Hrs.	22 Pcs.	0/1
7	High Temperature / High Humidity	85°C/R.H85%	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 time

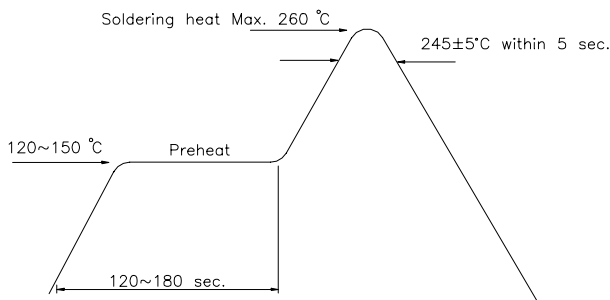
2.1 The operation of Temperature and RH are : 5°C~35°C, RH60%.

2.2 Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with descanting agent. Considering the tape life , we suggest our customers to use our products within a year(from production date).

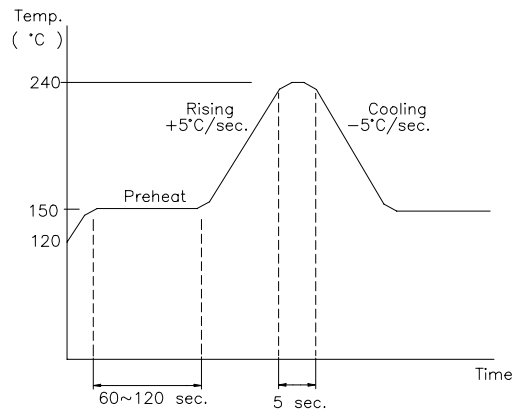
2.3 If opened more than one week in an atmosphere 5°C~35°C, RH 60%, they should be treated at 60°C± 5°C for 15hrs.

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.

**Soldering heat**



**Reflow Temp / Time**

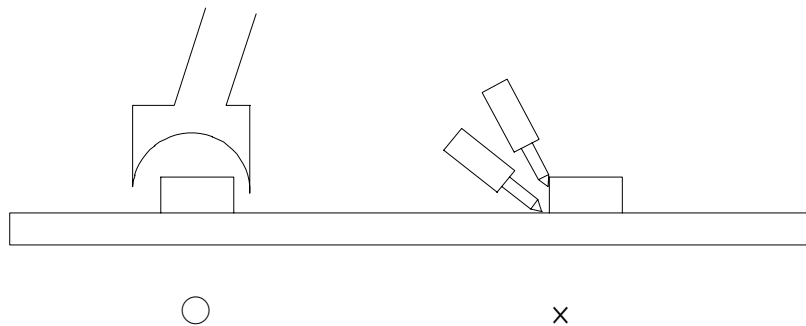


**Soldering Iron**

Basic spec is  $\leq 5$  sec when  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of Iron should be smaller than 15 W, and temperature should be controllable. Surface temperature of the device should be under  $230^{\circ}\text{C}$ .

**Rework**

1. Customer must finish rework within 5 sec under  $245^{\circ}\text{C}$ .
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.



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