T-1 (3mm) Super Bright SiC Blue LED Lamp

LTL1CHUBK
LTL12BUBK-1
LTL42UB5N

Features

- Low power consumption.
- High efficiency.
- Versatile mounting on P.C. Board or panel.
- I.C. compatible/low current requirements.
- T-1 type package.

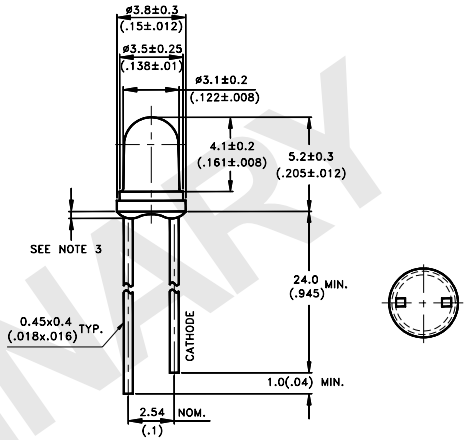
Description

The source color devices are made with Gallium Nitride on Silicon Carbide Light Emitting Diode.

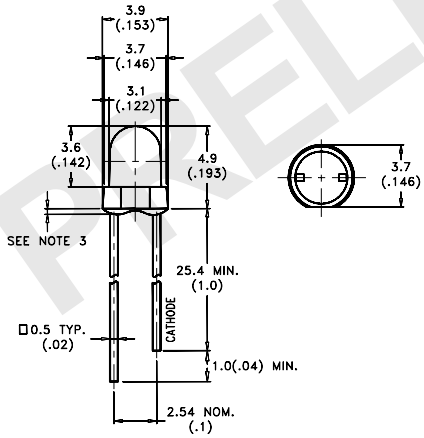
The devices are made with water clear epoxy package, and with 30, 45 and 60 degrees of viewing angle

Package Dimensions

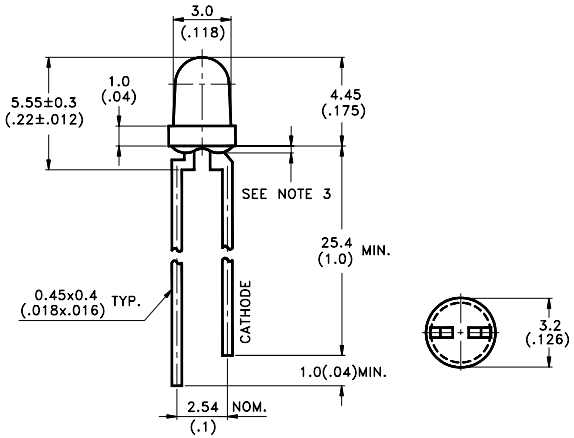
LTL1CHUBK



LTL12BUBK-1



LTL42UB5N



Devices

Part No. LTL	Lens	Source Color
1CHUBK	Water Clear	Blue
12BUBK-1	Water Clear	Blue
42UB5N	White Diffused	Blue

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25mm (.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm (.04") Max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter	Blue	Unit
Power Dissipation	135	mW
Peak Forward Current(1/10 Duty Cycle, 0.1ms Pulse Width)	70	mA
Continuous Forward Current	30	mA
Derating Linear From 30℃	0.5	mA/℃
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)Note A	1000	V
Operating Temperature Range	-20℃ to + 80℃	
Storage Temperature Range	-40℃ to + 100℃	
Lead Soldering Temperature[1.6mm(.063") From Body]	260℃ for 5 Seconds	

Note A :
HBM : Human Body Model. Seller gives no other assurances regarding the ability of Products to withstand ESD.

Electrical / Optical Characteristics and Curves at Ta= 25℃

Parameter	Symbol	Part No. LTL	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I_V	1CHUBK 12BUBK-1 42UB5N	19 19.2 7.5	60 38 18		mcd	I_F = 20mA Note 1
Viewing Angle	$2\theta_{1/2}$	1CHUBK 12BUBK-1 42UB5N		30 45 60		deg	Note 2 (FIG.6)
Peak Emission Wavelength	λ P			428		nm	Measurement @ peak (FIG.1)
Dominant Wavelength	λ d			466		nm	Note 5
Spectral Line Half-Width	$\Delta\lambda$			65		nm	
Forward Voltage	V_F			3.8	4.5	V	I_F = 20mA
Reverse Current	I_R				100	μ A	V_R = 5V

Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. Iv classification code is marked on each packing bag.
4. The Iv guarantee should be added ± 15%.
5. The dominant wavelength, λ d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
6. Precautions in handling:
   - When soldering, leave 2mm of minimum clearance from the resin to the soldering point.
   - Dipping the resin to solder must be avoided.
   - Correcting the soldered position after soldering must be avoided.
   - In soldering, do not apply any stress to the lead frame particularly when heated.
   - When forming a lead, make sure not to apply any stress inside the resin.
   - Lead forming must be done before soldering.
   - It is necessary to cut the lead frame at normal temperature.
7. Caution in ESD
   - Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

Typical Electrical / Optical Characteristic Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

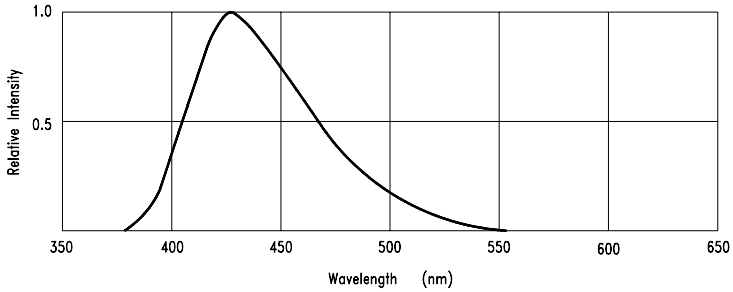


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

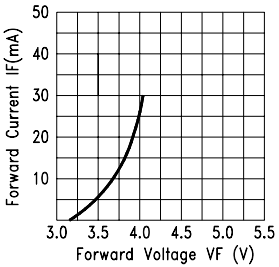


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

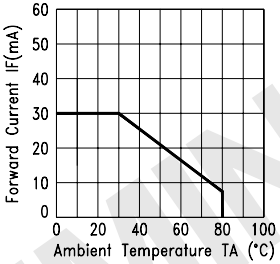


Fig.3 FORWARD CURRENT DERATING CURVE

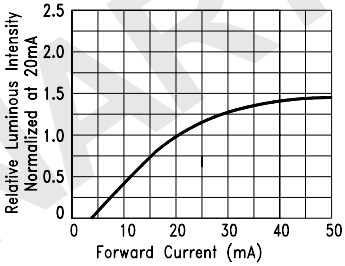


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

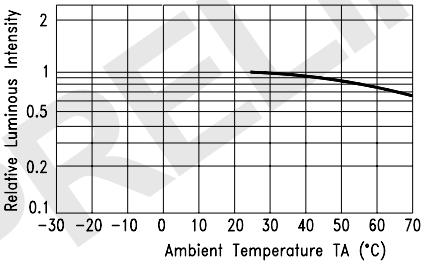


Fig.5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

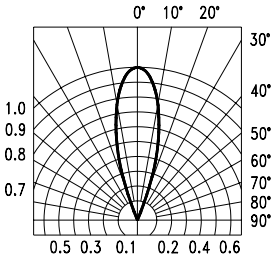


Fig.6−1 SPATIAL DISTRIBUTION (LTL1CHUBK)

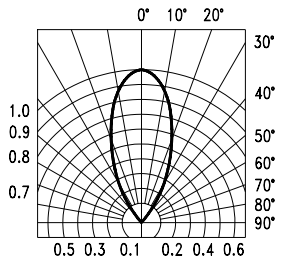


Fig.6−2 SPATIAL DISTRIBUTION (LTL12BUBK−1)

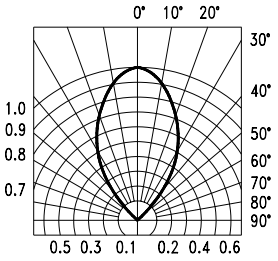


Fig.6−3 SPATIAL DISTRIBUTION (LTL42UB5N)

T-1 3/4 (5mm) Super Bright SiC Blue LED Lamp

LTL353UBK
LTL353UBJ

Features

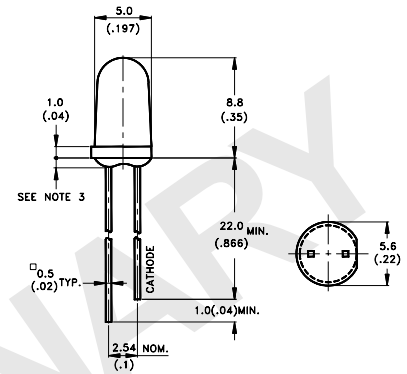
- Low power consumption.
- High efficiency.
- Versatile mounting on P.C. Board or panel.
- I.C. compatible/low current requirements.
- T-13/4 type package.

Description

The source color devices are made with Gallium Nitride on Silicon Carbide Light Emitting Diode.

The devices are made with water clear epoxy package, and with 12 and 40 degrees of viewing angle.

Pad Dimensions



Notes:

1.All dimensions are in millimeters (inches).
2.Tolerance is ± 0.25mm (.010")unless otherwise noted.
3.Protruded resin under flange is 1.0mm (.04") Max.
4.Lead spacing is measured where the leads emerge from the package.
5.Specifications are subject to change without notice.

Devices

Part No. LTL	Lens	Source Color
353UBK	Water Clear	Blue
353UBJ	White Diffused	Blue

Absolute Maximum Ratings at Ta=25℃

Parameter	Blue	Unit
Power Dissipation	135	mW
Peak Forward Current(1/10 Duty Cycle, 0.1ms Pulse Width)	70	mA
Continuous Forward Current	30	mA
Derating Linear From 30℃	0.5	mA/℃
Reverse Voltage	5	V
Electrostatic Discharge Threshold(HBM)Note A	1000	V
Operating Temperature Range	-20℃ to + 80℃	
Storage Temperature Range	-40℃ to + 100℃	
Lead Soldering Temperature[1.6mm(.063") From Body]	260℃ for 5 Seconds	

Note A :
HBM : Human Body Model. Seller gives no other assurances regarding the ability of Products to withstand ESD.

Electrical / Optical Characteristics and Curves at TA=25℃

Parameter	Symbol	Part No. LTL	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	Iv	353UBK 353UBJ	100 12.6	250 25		mcd	IF=20mA Note 1
Viewing Angle	$2\theta 1/2$	353UBK 353UBJ		12 40		deg	Note 2 (FIG. 6)
Peak Emission Wavelength	λ P			428		nm	Measurement @ Peak (FIG.1)
Dominant Wavelenth	λ d			466		nm	Note 5
Spectral Line Half-Width	$\triangle\lambda$			65		nm	
Forward Voltage	VF			3.8	4.5	V	IF=20mA
Reverse Current	IR				100	μA	VR=5V

NOTES:

1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

2. $\theta 1/2$ is the off-axis angle at which the luminous intensity is half the axial luminous intenslty.

3.Iv classification code is marked on each packing bag.

4.The Iv guarantee should be added $\pm$ 15%.

5.The dominant wavelength, λ d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

6.Precautions in handling:

- When soldering,leave 2mm of minimum clearance from the resin to the soldering point.
- Dipping the resin to solder must be avoided.
- Correcting the soldered position after soldering must be avoided.
- In soldering, do not apply any stress to the lead frame particularly when heated.
- When forming a lead, make sure not to apply any stress inside the resin.
- Lead forming must be done before soldering.
- It is necessary to cut the lead frame at normal temperature.

7.Caution in ESD

- Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

Typical Electrical / Optical Characteristic Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

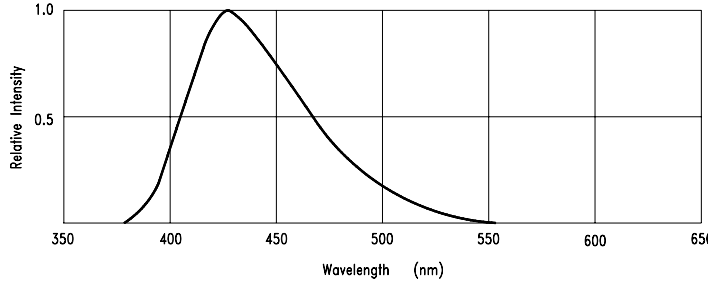


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

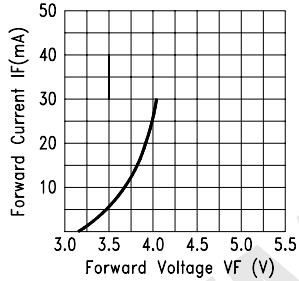


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

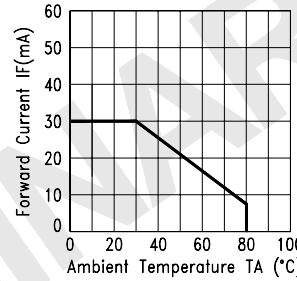


Fig.3 FORWARD CURRENT DERATING CURVE

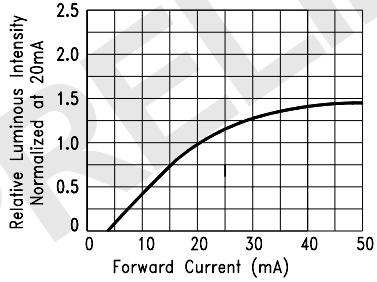


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

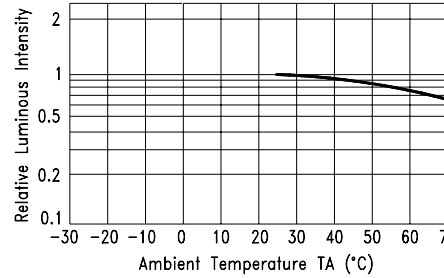


Fig.5 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

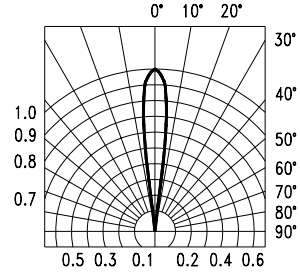


Fig.6−1 SPATIAL DISTRIBUTION (LTL353UBK)

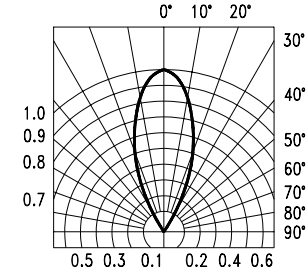


Fig.6−2 SPATIAL DISTRIBUTION (LTL353UBJ)