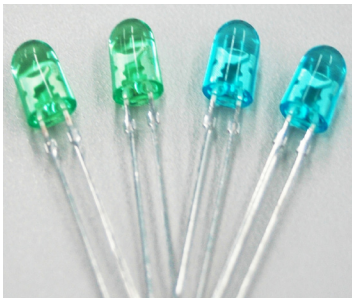
Cree® 5-mm Oval LED
C566C-GFS&BFS
Data Sheet

This oval LED is specifically designed for variable-message signs and passenger-information signs. The oval-shaped radiation pattern and high luminous intensity ensure that these devices are excellent for wide-field-of-view outdoor applications where a wide viewing angle and readability in sunlight are essential.

These lamps are tinted and diffused. The encapsulation resin contains anti-UV material in order to reduce the effects of long-term exposure to direct sunlight.



FEATURES

- Size (mm): 5
- Color and Typical Dominant Wavelength (nm):
  - Green (527)
  - Blue (470)
- Luminous Intensity (mcd)
  - Green (2130-12000)
  - Blue (770-4180)
- Viewing Angle: 70 x 35 degree
- Lead-Free
- RoHS-Compliant

APPLICATIONS

- Electronic Signs & Signals (ESS)
- Full-Color Video Screen
- Motorway Signs
- Variable-Message Sign (VMS)
- Advertising Signs
- Petrol Signs

Absolute Maximum Ratings (T_A = 25°C)

Items	Symbol	Absolute Maximum Rating	Unit
		Blue and Green	
Forward Current	I_F	35	mA
Peak Forward Current Note1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	140	mW
Operation Temperature	T_{opr}	-40 ~ +95	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Lead Soldering Temperature	T_{sol}	Max. 260°C for 3 sec. max. (3 mm from the base of the epoxy bulb)	

Note:

1. Pulse width ≤0.1 msec, duty ≤1/10.

Typical Electrical & Optical Characteristics (T_A = 25°C)

Characteristics	Color	Symbol	Condition	Unit	Minimum	Typical	Maximum
Forward Voltage	Blue/Green	V_F	I_F = 20 mA	V		3.4	4.0
Reverse Current	Blue/Green	I_R	V_R = 5 V	μA			100
Dominant Wavelength	Green	λ_D	I_F = 20 mA	nm	520	527	535
	Blue	λ_D	I_F = 20 mA	nm	465	470	475
Luminous Intensity	Green	I_V	I_F = 20 mA	mcd	2130	5200	
	Blue	I_V	I_F = 20 mA	mcd	770	1500	

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Intensity Bin Limit (I_F = 20 mA)

Green

Bin Code	Min. (mcd)	Max. (mcd)
V0	2130	3000
W0	3000	4180
X0	4180	5860
Y0	5860	8200
Z0	8200	12000

Blue

Bin Code	Min. (mcd)	Max. (mcd)
S0	770	1100
T0	1100	1520
U0	1520	2130
V0	2130	3000
W0	3000	4180

Tolerance of measurement of luminous intensity is ±15%

Color Bin Limit (I_F = 20 mA)

Green

Bin Code	Min. (nm)	Max. (nm)
G7	520	525
G8	525	530
G9	530	535

Blue

Bin Code	Min. (nm)	Max. (nm)
B4	465	470
B5	470	475

Tolerance of measurement of dominant wavelength is ±1 nm

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Order Code Table*

Color	Kit Number	Luminous Intensity (mcd)		Dominant Wavelength				Package	Standoff
		Min.	Max.	Color Bin	Min. (nm)	Color Bin	Max. (nm)		
Green	C566C-GFS-CV0Z0791	2130	12000	G7	520	G9	535	Bulk	Yes
Green	C566C-GFS-CV0Z0891	2130	12000	G8	525	G9	535	Bulk	Yes
Green	C566C-GFS-CW0X0781	3000	5860	G7	520	G8	530	Bulk	Yes
Green	C566C-GFS-CW0X0891	3000	5860	G8	525	G9	535	Bulk	Yes
Green	C566C-GFS-CX0Y0781	4180	8200	G7	520	G8	530	Bulk	Yes
Green	C566C-GFS-CX0Y0891	4180	8200	G8	525	G9	535	Bulk	Yes
Green	C566C-GFS-CV0Z0792	2130	12000	G7	520	G9	535	Ammo	Yes
Green	C566C-GFS-CV0Z0892	2130	12000	G8	525	G9	535	Ammo	Yes
Green	C566C-GFS-CW0X0782	3000	5860	G7	520	G8	530	Ammo	Yes
Green	C566C-GFS-CW0X0892	3000	5860	G8	525	G9	535	Ammo	Yes
Green	C566C-GFS-CX0Y0782	4180	8200	G7	520	G8	530	Ammo	Yes
Green	C566C-GFS-CX0Y0892	4180	8200	G8	525	G9	535	Ammo	Yes

Color	Kit Number	Luminous Intensity (mcd)		Dominant Wavelength				Package	Standoff
		Min.	Max.	Color Bin	Min. (nm)	Color Bin	Max. (nm)		
Blue	C566C-BFS-CS0W0451	770	4180	B4	465	B5	475	Bulk	Yes
Blue	C566C-BFS-CT0U0451	770	2130	B4	465	B5	475	Bulk	Yes
Blue	C566C-BFS-CU0V0451	2130	3000	B4	465	B5	475	Bulk	Yes
Blue	C566C-BFS-CS0W0451	770	4180	B4	465	B5	475	Ammo	Yes
Blue	C566C-BFS-CT0U0451	770	2130	B4	465	B5	475	Ammo	Yes
Blue	C566C-BFS-CU0V0451	2130	3000	B4	465	B5	475	Ammo	Yes

Notes:
1. The above kit numbers represent order codes that include multiple intensity-bin and color-bin codes. Only one intensity-bin code and one color-bin code will be shipped on each reel. Single intensity-bin, single color-bin codes will not be orderable.
2. Please refer to the "Cree LED Lamp Reliability Test Standards" document for reliability test conditions.
3. Please refer to the "Cree LED Lamp Soldering & Handling" document for information about how to use this LED product safely.

Important Bins Notes:
- Packaging methods are available for selection; please refer to the "Cree LED Lamp Packaging Standard" document.
- Please refer to the "Cree LED Lamp Reliability Test Standards" document for reliability test conditions.
- Please refer to the "Cree LED Lamp Soldering & Handling" document for information about how to use this LED product safely.

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Graphs

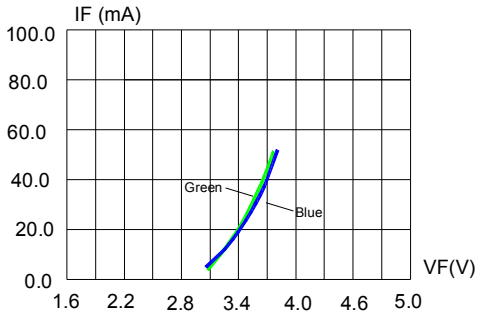

FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

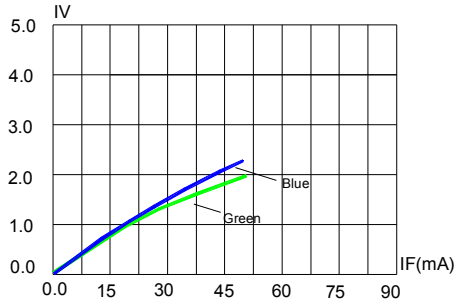

FIG.2 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

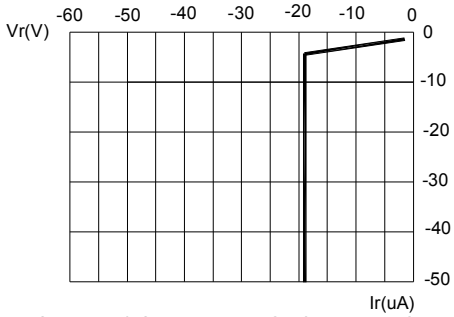

FIG.3 BLUE & GREEN REVERSE CURRENT VS. REVERSE VOLTAGE.

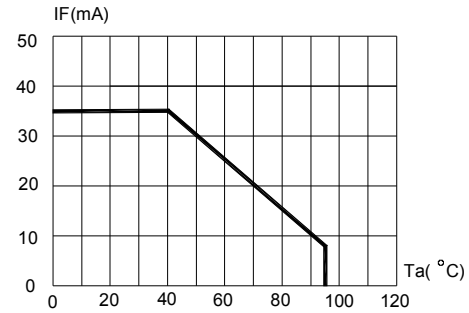

FIG.4 BLUE & GREEN MAXIMUM FORWARD DCCURRENT VS AMBIENT TEMPERATURE (Tjmax=105 °C)

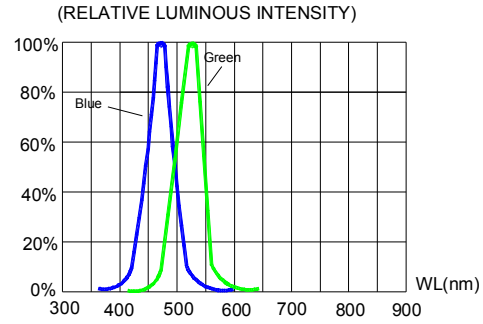

FIG.5 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

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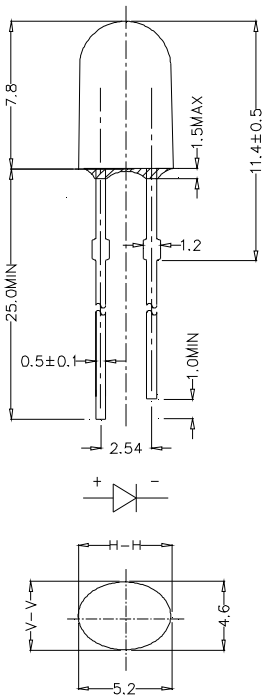
Mechanical Dimensions

All dimensions are in mm. Tolerance is ±0.25 mm unless otherwise noted.

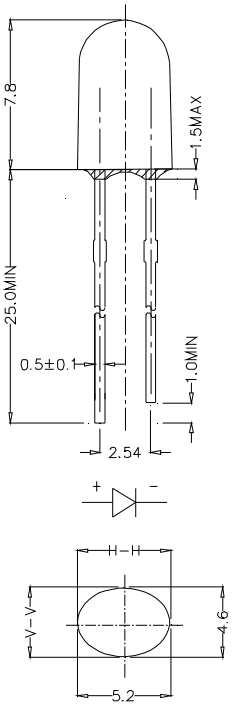
An epoxy meniscus may extend about 1.5 mm down the leads.

Burr around bottom of epoxy may be 0.5 mm max.

C566C-GFS/BFS:



C566C-GFN/BFN:



Notes

RoHS Compliance

The levels of environmentally sensitive, persistent biologically toxic (PBT), persistent organic pollutants (POP), or otherwise restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended through April 21, 2006.

Vision Advisory Claim

Users should be cautioned not to stare at the light of this LED product. The bright light can damage the eye.

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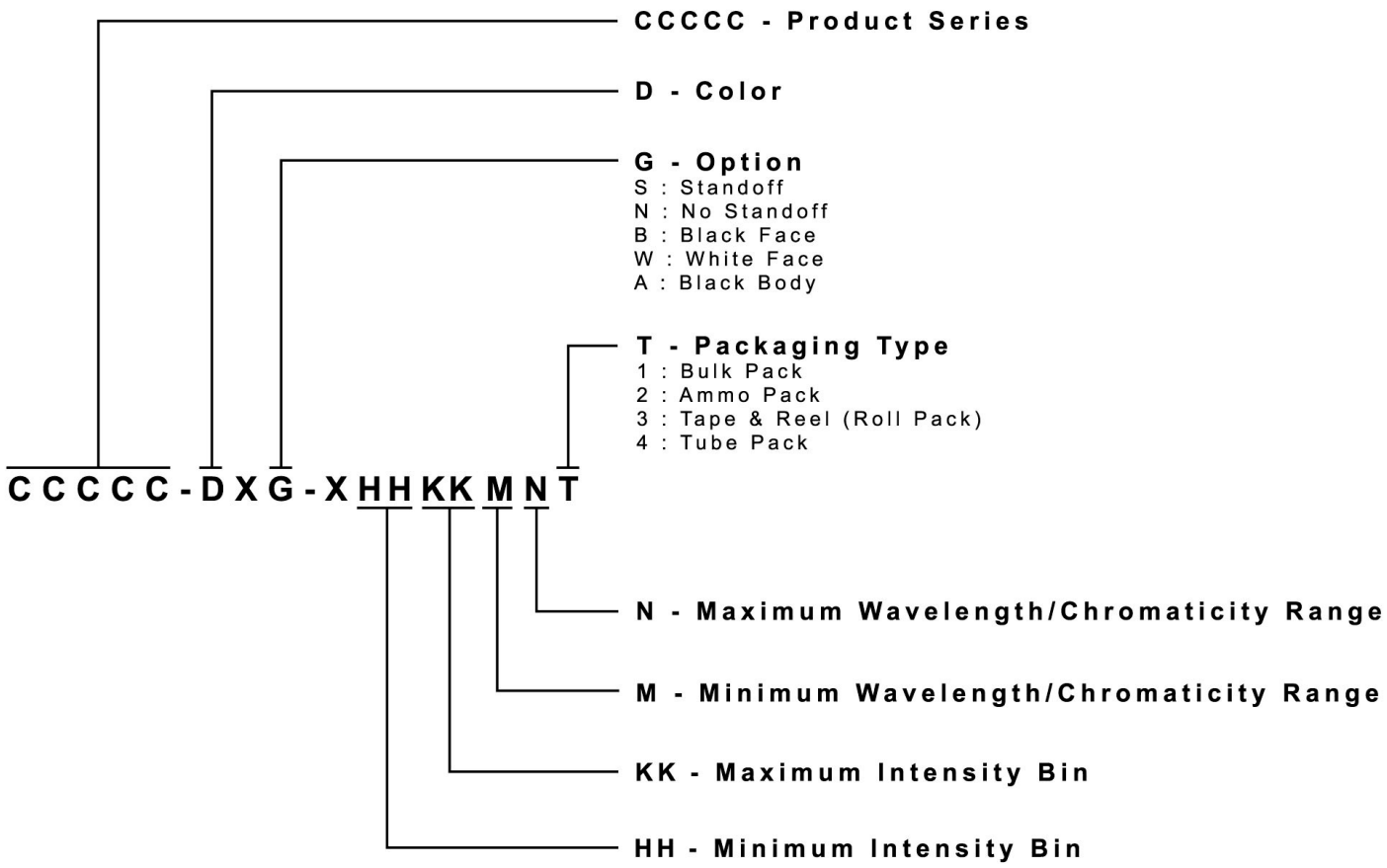
Kit Number System

Cree LED lamps are tested and sorted into performance bins. A bin is specified by ranges of color, forward voltage, and brightness. Sorted LEDs are packaged for shipping in various convenient options. Please refer to the "Cree LED Lamp Packaging Standard" document for more information about shipping and packaging options.

Cree LEDs are sold by order codes in combinations of bins called kits. Order codes are configured in the following manner:



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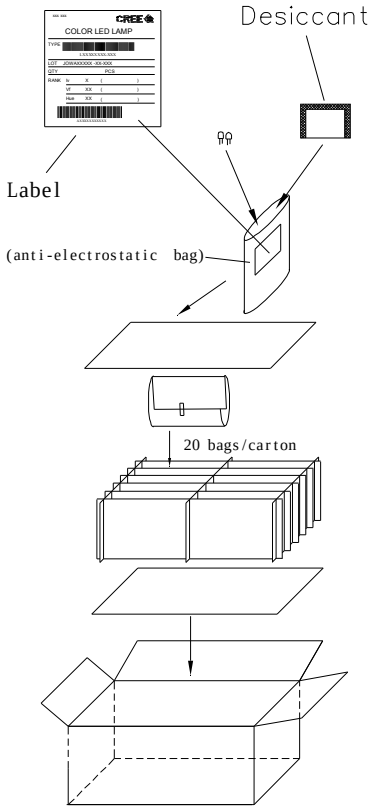
Package

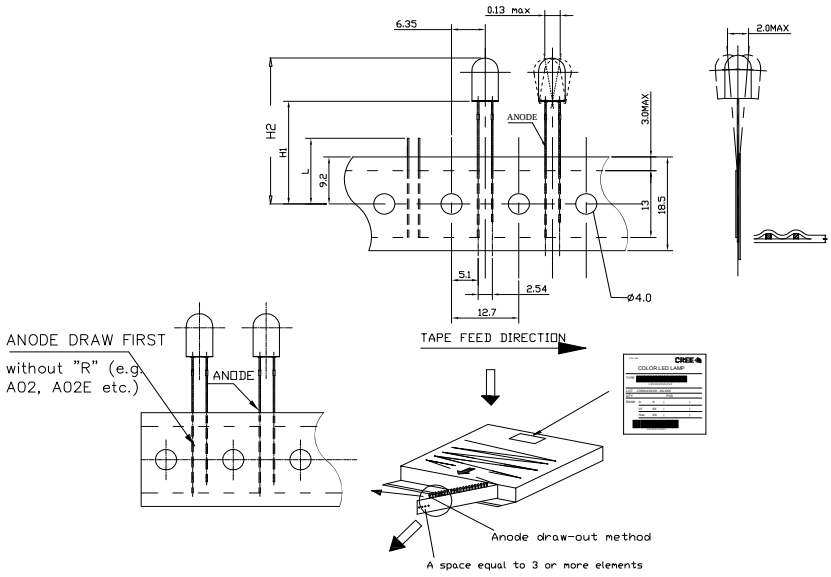
Features:

- The LEDs are packed in cardboard boxes after packaging in normal or anti-electrostatic bags.
- Cardboard boxes will be used to protect the LEDs from mechanical shock during transportation.
- The boxes are not water-resistant, and they must be kept away from water and moisture.
- There are two types of packaging: bulk pack and ammo pack.
- Max 500 pcs per bulk and max 3000 pcs per ammo.

Bulk Pack Packaging Type:



Ammo Pack Packaging Type:



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