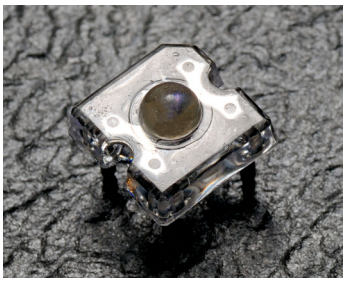
Cree® P4 LED
CP41B-BFS/GFS
Data Sheet

This revolutionary package design allows the lighting designer to reduce the number of LEDs required and provide a more uniform and unique illuminated appearance than with other LED solutions.

This is possible through the efficient optical package design and high current capabilities. The low profile package can be easily coupled with reflectors or lenses to efficiently distribute light and provide the desired lit appearance. This product family employs green and blue LED materials, which allow designers to match the color of many lighting applications like vehicle signal lamps and amusement lighting.



FEATURES

- Size (mm): 7.6 x 7.6
- Color and Typical Dominant Wavelength (nm):
  Green (527)
  Blue (470)
- Luminous Flux (mlm)
  Green (4400 - 8730)
  Blue (1650 - 3300)
- Lead-Free
- RoHS Compliant

APPLICATIONS

- Channel Letter
- Amusement

Absolute Maximum Ratings (T_A = 25°C)

Items	Symbol	Absolute Maximum Rating	Unit
		Blue/Green	
Forward Current	I_F	35	mA
Peak Forward Current [Note]	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	154	mW
Operation Temperature	T_{opr}	-40 ~ +100	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Lead Soldering Temperature	T_{sol}	Max. 260°C for 5 sec. max. (3 mm from the base of the epoxy bulb)	

Note: 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 = 30 mA	V		3.6	4.4
Reverse Current	Blue/Green	I_R	V_R = 5 V	μA			100
Dominant Wavelength	Blue	λ_D	I_F = 30 mA	nm	460	470	475
	Green	λ_D	I_F = 30 mA	nm	515	527	535
Luminous Flux	Blue	Φ_v	I_F = 30 mA	mlm	1650	2500	
	Green	Φ_v	I_F = 30 mA	mlm	4400	6500	
50% Power Angle	Blue/Green	2θ½	I_F = 30 mA	deg		70	

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Flux Bin Limit (I_F = 30 mA)

Blue

Bin Code	Min.(mlm)	Max.(mlm)
F0	1650	2200
G0	2200	2750
H0	2750	3300

Green

Bin Code	Min.(mlm)	Max.(mlm)
L0	4400	5500
M0	5500	6600
N0	6600	8730

- Tolerance of measurement of luminous Flux is ±15%

Color Bin Limit (I_F = 30 mA)

Blue

Bin Code	Min.(nm)	Max.(nm)
B3	460	465
B4	465	470
B5	470	475

Green

Bin Code	Min.(nm)	Max.(nm)
G6	515	520
G7	520	525
G8	525	530
G9	530	535

- Tolerance of measurement of dominant wavelength is ±1 nm

VF Bin Limit (I_F = 30 mA)

Blue

Bin Code	Min.(V)	Max.(V)
27	2.8	3.0
28	3.0	3.2
29	3.2	3.4
2a	3.4	3.6
2b	3.6	3.8
2c	3.8	4.0
2d	4.0	4.2
2e	4.2	4.4

Green

Bin Code	Min.(V)	Max.(V)
27	2.8	3.0
28	3.0	3.2
29	3.2	3.4
2a	3.4	3.6
2b	3.6	3.8
2c	3.8	4.0
2d	4.0	4.2
2e	4.2	4.4

- Tolerance of measurement of VF is ± 0.05V

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Graphs

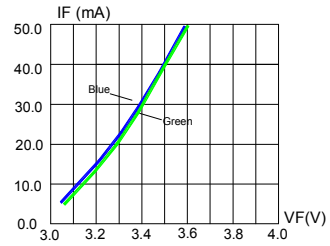

FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

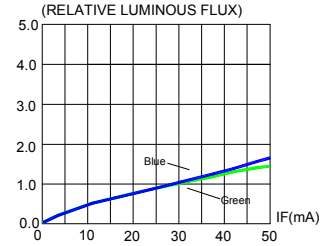

FIG.2 RELATIVE LUMINOUS FLUX VS. FORWARD CURRENT

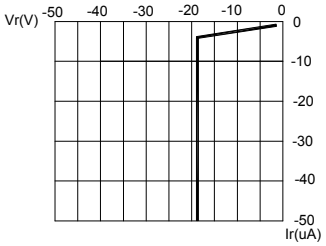

FIG.3 BLUE&GREEN REVERSE CURRENT VS. REVERSE VOLTAGE.

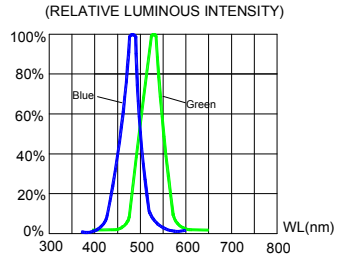

FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

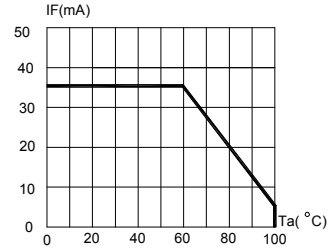

FIG.5 BLUE & GREEN MAXIMUM FORWARD DC CURRENT VS AMBIENT TEMPERATURE (Tjmax=105°C)

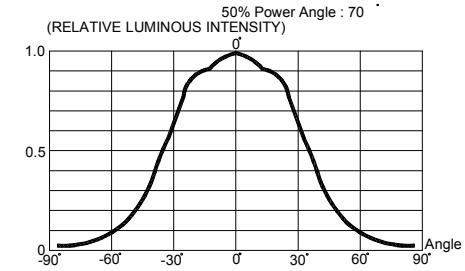

FIG.6 FAR FIELD PATTERN

The above data are collected from statistical figures that do not necessarily correspond to the actual parameters of each single LED. Hence, these data will be changed without further notice.

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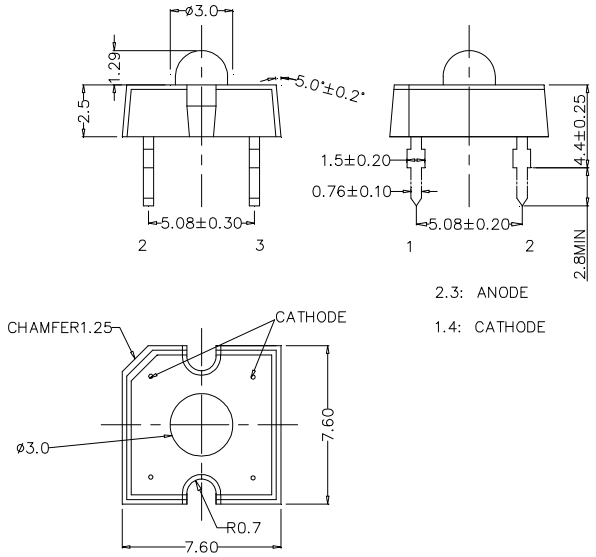
Mechanical Dimensions

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.



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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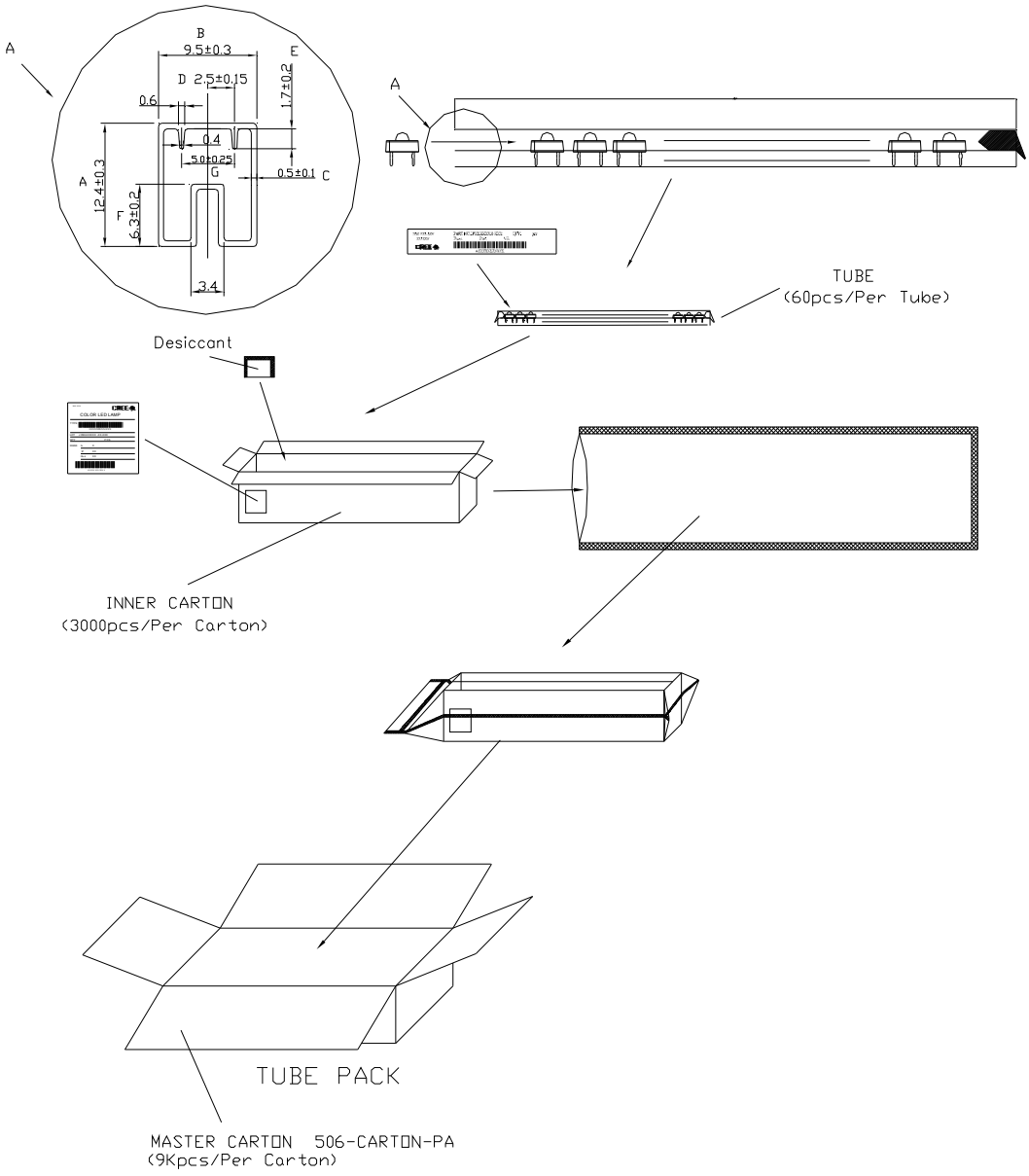
Package

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.
- The Tube Pack type of packaging.
- Max 60 pcs per tube.



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