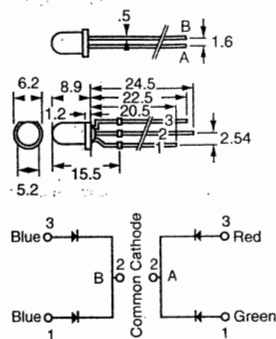


# CREE NEW! Multi-Color LED



## Description:

CRGB-5D18 is a unique LED indicator design which combines a red, green and two blue chips in a single 5mm package. This device is able to produce a wide range of colors in the visible spectrum by simply varying the current to each of the LEDs. The industry standard 5mm package has a white diffused lens which allows color mixing within the package. The multi-color package allows unlimited design and product flexibility by choosing any color desired and allowing the flexibility to change the color later.

## Features:

- Red, Green and Blue LEDs in a single package.
- Generate any color including: red, orange, yellow, green, aqua, blue, violet, and white

## Applications:

- Multi-color Panel or Status Indicator
- Full Color Moving Message Signs
- Large Scale Indoor Graphics and Video Displays
- Solid-state white light for Backlighting

| Multi-Color Generation Guide                                       |     |        |        |       |      |      |        |       |
|--------------------------------------------------------------------|-----|--------|--------|-------|------|------|--------|-------|
| Forward Current to Achieve Desired Color (DC Current at TA = 50°C) |     |        |        |       |      |      |        |       |
| Color                                                              | Red | Orange | Yellow | Green | Aqua | Blue | Violet | White |
| Red                                                                | 5mA | 5mA    | 5mA    | 0mA   | 0mA  | 0mA  | 5mA    | 5mA   |
| Green                                                              | 0mA | 12mA   | 30mA   | 20mA  | 20mA | 0mA  | 0mA    | 20mA  |
| Blue                                                               | 0mA | 0mA    | 0mA    | 0mA   | 35mA | 35mA | 35mA   | 35mA  |

| Color           | Max. Forward Current | Max. Reverse Current | Max. Reverse Voltage | Max. Power Dissipation | Operating Temperature Range | Luminous Intensity* | Viewing Angle* | Forward Voltage* | Peak Wavelength* |
|-----------------|----------------------|----------------------|----------------------|------------------------|-----------------------------|---------------------|----------------|------------------|------------------|
| Red             | 30mA                 | 10µA                 | 5V                   | 100mW                  | -40°C to +85°C              | 12mcd               | 30°            | 2.0V             | 640nm            |
| Green           | 30mA                 | 10µA                 | 5V                   | 100mW                  | -40°C to +85°C              | 2mcd                | 30°            | 2.1V             | 555nm            |
| Blue (per chip) | 40mA                 | 10µA                 | 5V                   | 150mW                  | -40°C to +85°C              | 1mcd                | 30°            | 3.4V             | 466nm            |

\* Both chips for Blue.

| Digi-Key Part No. | 1    | 10    | 100    |
|-------------------|------|-------|--------|
| 107CR-ND          | 3.09 | 27.55 | 213.75 |

# CREE Blue LEDs

## C470 Series

**Description:** Cree's C470 product series are silicon carbide blue LEDs with a 466nm peak wavelength and a typical optical power output of 18µW @ 20mA. Typical applications include full color commercial LED displays and indicators; diagnostic/analytical equipment (spectro-photometers), colorimeters, blood and tissue analyzers) and digital color printing and imaging systems. Cree's proprietary SiC material growth and processing technology assures lot-to-lot consistency and cost efficient volume production.

**Features:** • 466nm peak wavelength • 5V maximum reverse voltage • Typical forward voltage = 3.4V @ rated current • Guaranteed radiant flux.

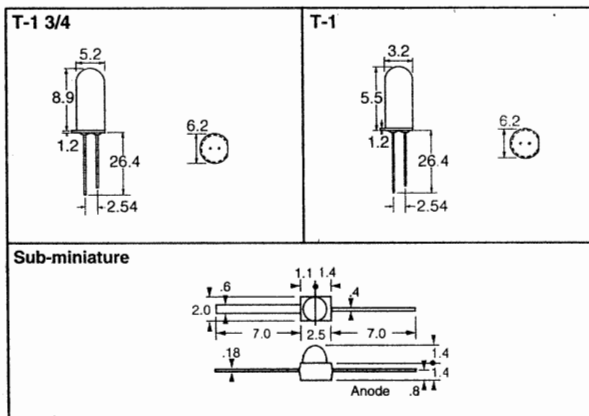
**Benefits:** • Solid state blue light source • Withstands higher voltage environments • Low power consumption • Guaranteed minimum intensity.

## C470-MC18 Sub-Miniature Series

**Description:** Cree's C470-MC18 sub-miniature blue LEDs are ideally suited for applications where the space for the LED is extremely limited. The C470-MC18 has a typical power output of 24µW (at 20mA) and a peak wavelength of 466nm. The small size and high performance of this LED make it the designer's choice for switch indicators and backlighting applications where space for the LED is valued at a premium.

**Features:** • Low Cost • High Performance • 466nm Peak Wavelength • Small Footprint Sub-miniature Package • Proven Reliability

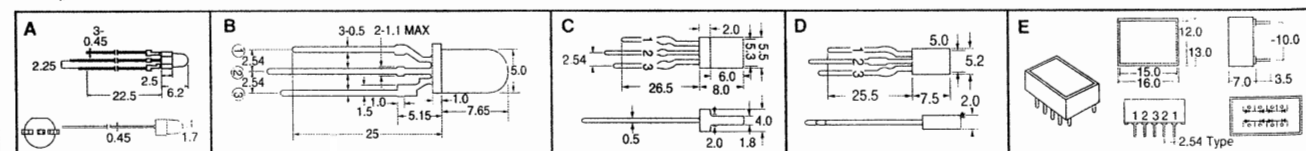
**Applications:** • Integrated Switch Indicator • Display and Keypad Backlighting • Panel Indicators • Medical/Analytical Instruments



| Forward Voltage | Max. Reverse Voltage | Max. Forward Current | Max. Reverse Current | Max. Power Dissipation | Typ. IO | Peak Emission Wavelength | Operating Temp ° | Lens              | Viewing Angle | Digi-Key Part No.    | 1   | 10   | 100   | 500    | 1,000  |
|-----------------|----------------------|----------------------|----------------------|------------------------|---------|--------------------------|------------------|-------------------|---------------|----------------------|-----|------|-------|--------|--------|
| 3.4V            | 5V                   | 40mA                 | 10µA                 | 125mW                  | 4 mcd   | 466 nm                   | -40 ~ +85°C      | T-1 1/2 diffused  | 34°           | 100CR-ND             | .88 | 7.83 | 60.75 | 243.00 | 388.80 |
| 3.4V            | 5V                   | 40mA                 | 10µA                 | 125mW                  | 18 mcd  | 466 nm                   | -40 ~ +85°C      | T-1 1/2 Clear     | 16°           | 101CR-ND             | .88 | 7.83 | 60.75 | 243.00 | 388.80 |
| 3.4V            | 5V                   | 30mA                 | 10µA                 | 125mW                  | 2 mcd   | 466 nm                   | -40 ~ +85°C      | T-1 diffused      | 42°           | 102CR-ND             | .88 | 7.83 | 60.75 | 243.00 | 388.80 |
| 3.4V            | 5V                   | 30mA                 | 10µA                 | 125mW                  | 6 mcd   | 466 nm                   | -40 ~ +85°C      | T-1 clear         | 28°           | 103CR-ND             | .88 | 7.83 | 60.75 | 243.00 | 388.80 |
| 3.4V            | 5V                   | 40mA                 | 10µA                 | 125mW                  | 3 mcd   | 466 nm                   | -40 ~ +85°C      | T-1 1/2 diffused* | 20°           | 104CR-ND <b>NEW!</b> | .88 | 7.83 | 60.75 | 243.00 | 388.80 |
| 3.4V            | 5V                   | 30mA                 | 10µA                 | 125mW                  | 3 mcd   | 466 nm                   | -40 ~ +85°C      | T-1 diffused*     | 30°           | 105CR-ND <b>NEW!</b> | .88 | 7.83 | 60.75 | 243.00 | 388.80 |
| 3.4V            | 5V                   | 30mA                 | 10µA                 | 100mW                  | 2 mcd   | 466 nm                   | -40 ~ +85°C      | Sub-mini Clear    | 20°           | 106CR-ND <b>NEW!</b> | .98 | 8.70 | 67.50 | 270.00 | 432.00 |

\* These are blue tinted lens.

# Panasonic Optoelectronics LEDs — Two Color



| Fig. No. | Radiation Color/<br>Lens Color     | Electro-Optical Characteristics (Ta=25°C) |         |        |          |         | Dimensions |                  | Digi-Key Part No. | Pricing |       |        |         | Panasonic Part No. |
|----------|------------------------------------|-------------------------------------------|---------|--------|----------|---------|------------|------------------|-------------------|---------|-------|--------|---------|--------------------|
|          |                                    | PD (mW)                                   | IF (mA) | VR (V) | IO (mcd) | λp (nm) | Lens Size  | Lead Length      |                   | 1       | 10    | 200    | 1,000   |                    |
| A        | *1. Green/3. Orange/White Diffused | 90/90                                     | 30/30   | 4/3    | 8.0/8.0  | 565/630 | φ3.0       | 22.5, 24.5, 26.5 | P509-ND           | .70     | 6.38  | 109.65 | 471.91  | LN086WP38          |
|          | *1. Green/3. Red/White Diffused    | 70                                        | 25      | 4      | 3.0      | 700     | φ5.0       | 24.1, 25.6, 27.1 | P391-ND           | .63     | 5.75  | 98.90  | 425.64  | LN11WP23           |
|          | *1. Green/3. Red/Clear             | 70                                        | 25      | 4      | 3.0      | 700     | φ5.0       | 24.1, 25.6, 27.1 | P392-ND           | .62     | 5.65  | 97.18  | 418.24  | LN11CP23           |
|          | *1. Amber/3. Red/White Diffused    | 70                                        | 25      | 4      | 3.0      | 700     | φ5.0       | 24.1, 25.6, 27.1 | P393-ND           | .70     | 6.38  | 109.65 | 471.91  | LN11WP24           |
|          | *1. Amber/3. Red/Clear             | 70                                        | 25      | 4      | 3.0      | 700     | φ5.0       | 24.1, 25.6, 27.1 | P394-ND           | .70     | 6.38  | 109.65 | 471.91  | LN11CP24           |
| B        | *1. Amber/3. Green/White Diffused  | 90                                        | 30      | 4      | 15.0     | 565     | φ5.0       | 24.1, 25.6, 27.1 | P395-ND           | .70     | 6.38  | 109.65 | 471.91  | LN11WP34           |
|          | *1. Orange/3. Green/White Diffused | 90                                        | 30      | 4      | 15.0     | 565     | φ5.0       | 24.1, 25.6, 27.1 | P399-ND           | .72     | 6.50  | 111.80 | 481.16  | LN11WP38           |
|          | *1. Green/3. Red/White Diffused    | 70/90                                     | 25/30   | 4/4    | .6/4.5   | 700/565 | φ1.8x5.3   | 26.5, 28.0, 29.5 | P435-ND           | .63     | 5.75  | 98.90  | 425.64  | LN117WP23          |
| D        | *1. Orange/3. Green/White Diffused | 90/90                                     | 30/30   | 4/3    | 3/2.5    | 565/630 | φ2.0x5.0   | 25.5, 27.0, 28.5 | P436-ND           | .72     | 6.50  | 111.80 | 481.16  | LN142WP38          |
| E        | *1. Orange/3. Green/White Diffused | 60                                        | 20      | 3      | 8.0      | 565     | φ12.0x15.0 | 3.5 typ.         | P396-ND           | 3.37    | 30.60 | 526.32 | 2265.17 | LN0801WP38         |

\* Common Cathode

## 1-800-344-4539

Easy To Remember: 1-800-DIGI-KEY