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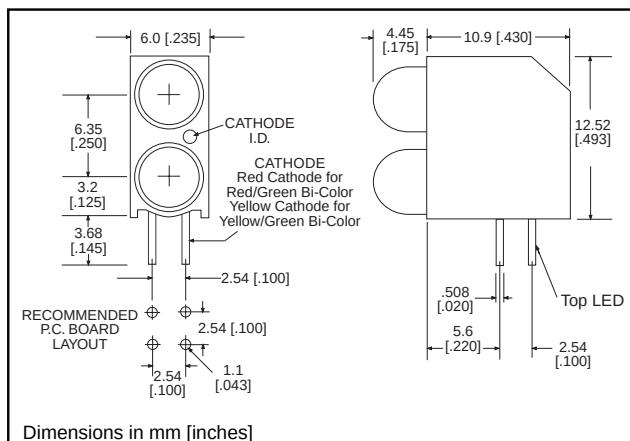
For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

# 5mm LED CBI® Circuit Board Indicator Bi-level

# Dialight

552-0xxx



Standard Polarity shown in drawing: Cathode right

## Features

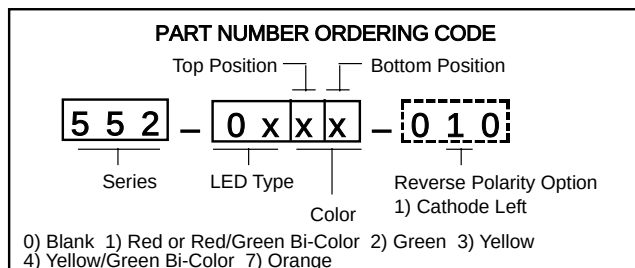
- Multiple CBIs form horizontal LED arrays on 6.35mm (0.250") center-lines.
- High Contrast, UL 94 V-0 rated, black housing
- Oxygen index: 32%
- Polymer content: PBT, 0.710 g
- Housing stand-offs facilitate PCB cleaning
- Solderability per MIL-STD-202F, method 208F
- LEDs are safe for direct viewing per IEC 825-1, EN-60825-1

## Custom Combinations

- Contact factory for information on custom color combinations and ganged arrays

**Tolerance note: As noted, otherwise:**

- LED Protrusion:  $\pm 0.04$  mm [ $\pm 0.016$ ]
- CBI Housing:  $\pm 0.02$ mm [ $\pm 0.008$ ]



*-010 Ordering Code Suffix required ONLY for Reverse Polarity Option*

**PART NO.**

**COLOR\***

## HIGH EFFICIENCY, LED TYPE 02

|          |        |
|----------|--------|
| 552-0211 | Red    |
| 552-0222 | Green  |
| 552-0233 | Yellow |
| 552-0277 | Orange |

**INTEGRAL RESISTOR 5 VOLTS, LED TYPE 03**

|          |        |
|----------|--------|
| 552-0311 | Red    |
| 552-0322 | Green  |
| 552-0333 | Yellow |

**INTEGRAL RESISTOR 12 VOLTS, LED TYPE 04**

|          |        |
|----------|--------|
| 552-0422 | Green  |
| 552-0433 | Yellow |

## BI-COLOR, LED TYPE 07

|          |              |
|----------|--------------|
| 552-0711 | Red/Green    |
| 552-0744 | Yellow/Green |

**SUPER BRIGHT, LED TYPE 08**

|          |        |
|----------|--------|
| 552-0811 | Red    |
| 552-0822 | Green  |
| 552-0833 | Yellow |

**LOW CURRENT, LED TYPE 09**

|          |        |
|----------|--------|
| 552-0911 | Red    |
| 552-0922 | Green  |
| 552-0933 | Yellow |

To order any of the 552-0xx part numbers with Reverse Polarity (Cathode Left), please add -010 to the part numbers shown above.

# 552-0xxx

## Typical Operating Characteristics (T<sub>A</sub>=25°C)

See LED data sheet for additional information

### HIGH EFFICIENCY

See page 6-55 and 6-56 for Reference Only LED Drive Circuit Examples. See page 6-58 for Pin Out

| Part Number | Color  | Peak Wavelength nm | I <sub>v</sub> mcd | V <sub>F</sub> Volts | Test Current (mA) | Viewing Angle 2θ° | LED Data sheet | Page # |
|-------------|--------|--------------------|--------------------|----------------------|-------------------|-------------------|----------------|--------|
| 552-0211    | Red    | 650                | 7                  | 2.2                  | 10                | 50°               | 5HD-9269       | 6-49   |
| 552-0222    | Green  | 563                | 10                 | 2.1                  | 10                | 65°               | 5HD-9270-5     | 6-49   |
| 552-0233    | Yellow | 585                | 6.3                | 2.1                  | 10                | 50°               | 5HD-9271-5     | 6-49   |
| 552-0277    | Orange | 600                | 7                  | 1.9                  | 10                | 60°               | 521-9704       | 6-43   |

### INTEGRAL RESISTOR, 5 VOLTS

| Part Number | Color  | Peak Wavelength nm | I <sub>v</sub> mcd | Test Voltage | Forward Current (mA) | Viewing Angle 2θ° | LED Data sheet | Page # |
|-------------|--------|--------------------|--------------------|--------------|----------------------|-------------------|----------------|--------|
| 552-0311    | Red    | 655                | 2                  | 5            | 13                   | 60°               | 5RD-9422       | 6-52   |
| 552-0322    | Green  | 565                | 8                  | 5            | 12                   | 60°               | 5RD-9423       | 6-52   |
| 552-0333    | Yellow | 583                | 8                  | 5            | 10                   | 60°               | 521-9284       | 6-41   |

### INTEGRAL RESISTOR, 12 VOLTS

| Part Number | Color  | Peak Wavelength nm | I <sub>v</sub> mcd | Test Voltage | Forward Current (mA) | Viewing Angle 2θ° | LED Data sheet | Page # |
|-------------|--------|--------------------|--------------------|--------------|----------------------|-------------------|----------------|--------|
| 552-0422    | Green  | 565                | 4                  | 12           | 13                   | 60°               | 5RD-9378       | 6-52   |
| 552-0433    | Yellow | 583                | 4                  | 12           | 13                   | 60°               | 5RD-9379       | 6-52   |

### BI-COLOR

| Part Number | Color        | Peak Wavelength nm | I <sub>v</sub> mcd | V <sub>F</sub> Volts | Test Current (mA) | Viewing Angle 2θ° | LED Data sheet | Page # |
|-------------|--------------|--------------------|--------------------|----------------------|-------------------|-------------------|----------------|--------|
| 552-0711    | Red/Green    | 660/565            | 90/40              | 1.8/2.1              | 20                | 60°               | 521-9651       | 6-46   |
| 552-0744    | Yellow/Green | 585/565            | 8.7/8.7            | 2.1/2.1              | 20                | 50°               | 521-9724       | 6-46   |

### SUPER BRIGHT

| Part Number | Color  | Peak Wavelength nm | I <sub>v</sub> mcd | V <sub>F</sub> Volts | Test Current (mA) | Viewing Angle 2θ° | LED Data sheet | Page # |
|-------------|--------|--------------------|--------------------|----------------------|-------------------|-------------------|----------------|--------|
| 552-0811    | Red    | 650                | 34                 | 2.1                  | 20                | 50°               | 5SD-9441       | 6-53   |
| 552-0822    | Green  | 563                | 34                 | 2.2                  | 20                | 50°               | 5SD-9456       | 6-53   |
| 552-0833    | Yellow | 585                | 34                 | 2.2                  | 20                | 50°               | 5SD-9455       | 6-53   |

### LOW CURRENT

| Part Number | Color  | Peak Wavelength nm | I <sub>v</sub> mcd | V <sub>F</sub> Volts | Test Current (mA) | Viewing Angle 2θ° | LED Data sheet | Page # |
|-------------|--------|--------------------|--------------------|----------------------|-------------------|-------------------|----------------|--------|
| 552-0911    | Red    | 635                | 2                  | 1.8                  | 2                 | 50°               | 521-9320       | 6-42   |
| 552-0922    | Green  | 565                | 1.8                | 1.8                  | 2                 | 50°               | 521-9327       | 6-42   |
| 552-0933    | Yellow | 583                | 1.8                | 1.9                  | 2                 | 50°               | 521-9321       | 6-42   |

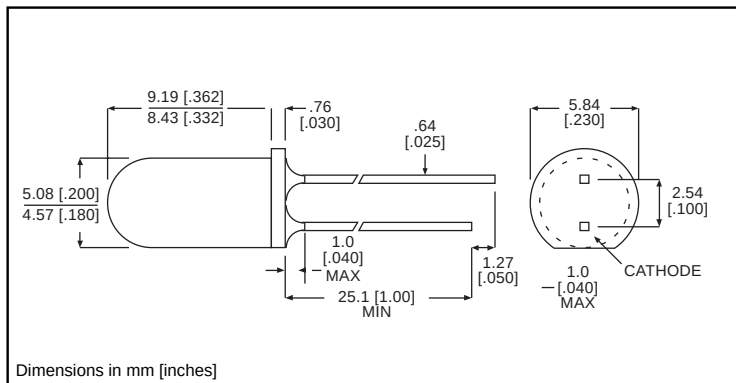
6



# 5mm Discrete LED Integral Resistor, 5 Volts Diffused

**Dialight**

**521-9183, -9284**



| PART NO. | LED COLOR |
|----------|-----------|
| 521-9183 | Red       |
| 521-9284 | Yellow    |

**MOUNTING CLIP: 515-0004**  
located on page 6-48

| ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> =25°C) | Red<br>-9183                       | Yellow<br>-9284 |
|-------------------------------------------------|------------------------------------|-----------------|
|                                                 |                                    |                 |
| Forward Voltage (V)                             | 7.5                                | 7.5             |
| Derating (V/°C) From 50°C                       | .071                               | .071            |
| Operating Temperature (°C)                      | -40/+85                            | -40/+85         |
| Storage Temperature (°C)                        | -55/+100                           | -55/+100        |
| Soldering Temperature                           | 260°C, 5 seconds, 1.6 mm from case |                 |

Solder Adherence per MIL-STD-202E, Method 208C

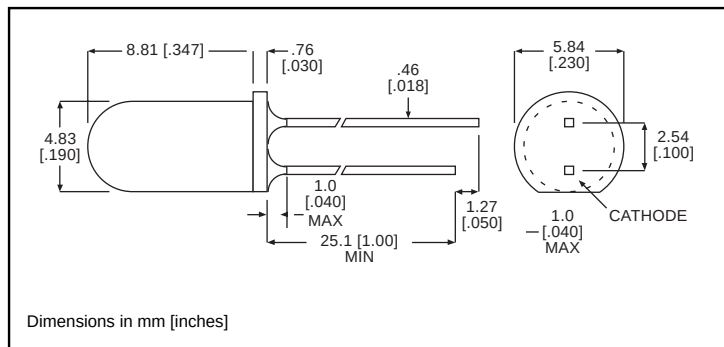
| OPERATING CHARACTERISTICS (T <sub>A</sub> =25°C) |         | Red<br>-9183 | Yellow<br>-9284 |
|--------------------------------------------------|---------|--------------|-----------------|
|                                                  |         |              |                 |
| Luminous Intensity (mcd)                         | Min.    | 2            | 2               |
| V <sub>F</sub> = 5V                              | Typical | 8            | 8               |
| Peak Wavelength (nm)                             | Typical | 635          | 583             |
| λ Peak                                           |         |              |                 |
| Viewing Angle (2Θ <sup>1/2</sup> )               | Typical | 60°          | 60°             |
| Forward Current (I)                              | Typical | 10           | 10              |
| V <sub>F</sub> = 5V                              | Max     | 15           | 15              |
| Reverse Voltage (V), I <sub>R</sub> =100μA       | Min.    | 5            | 5               |

Θ<sup>1/2</sup> is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm Discrete LED**  
**Low Current, 2mA**  
**Diffused**

**Dialight**

**521-9320, -9321, -9327**



| PART NO. | COLOR  |
|----------|--------|
| 521-9320 | Red    |
| 521-9321 | Yellow |
| 521-9327 | Green  |

**MOUNTING CLIP: 515-0004**  
located on page 6-48

**ABSOLUTE MAXIMUM RATINGS** (TA=25°C)

|                                          | Red<br>-9320                       | Yellow<br>-9321 | Green<br>-9327 |
|------------------------------------------|------------------------------------|-----------------|----------------|
| Power Dissipation (mW)                   | 27                                 | 36              | 24             |
| Derating (mA/°C) From 92°C               | 1                                  | 1               | 1              |
| Forward Current (mA)                     | 7                                  | 7               | 7              |
| Peak Current (mA)<br>Pulse width = 10 μs | 500                                | 500             | 500            |
| Operating Temperature (°C)               | -55/+100                           | -55/+100        | -55/+100       |
| Storage Temperature (°C)                 | -55/+100                           | -55/+100        | -55/+100       |
| Soldering Temperature                    | 260°C, 5 seconds, 1.6 mm from case |                 |                |

Solder Adherence per MIL-STD-202E, Method 208C

**OPERATING CHARACTERISTICS** (TA=25°C)

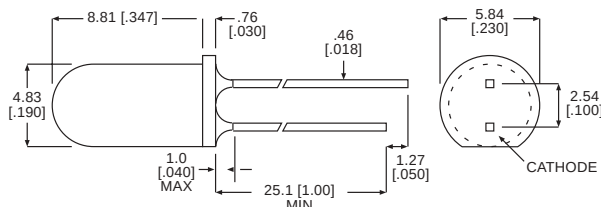
|                                           |         | Red<br>-9320 | Yellow<br>-9321 | Green<br>-9327 |
|-------------------------------------------|---------|--------------|-----------------|----------------|
| Luminous Intensity (mcd)                  | Min.    | 1.2          | 1.2             | 1.2            |
|                                           | Typical | 2            | 1.8             | 1.8            |
| Peak Wavelength (nm)                      | Typical | 635          | 583             | 565            |
| λ Peak                                    |         |              |                 |                |
| Viewing Angle (2Θ ½)                      | Typical | 50°          | 50°             | 50°            |
| Forward Voltage (V)                       | Typical | 1.8          | 1.9             | 1.8            |
|                                           | Max.    | 2.2          | 2.7             | 2.2            |
| Reverse Voltage (V), I <sub>R</sub> =50μA | Min.    | 5            | 5               | 5              |

Θ ½ is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm Discrete LED**  
**High Efficiency**  
**Diffused**

**Dialight**

**521-9246, -9248, -9250, -9704**



Dimensions in mm [inches]

| <u>PART NO.</u> | <u>COLOR</u> |
|-----------------|--------------|
| 521-9246        | Red          |
| 521-9248        | Yellow       |
| 521-9250        | Green        |
| 521-9704        | Orange       |

**MOUNTING CLIP: 515-0004**  
located on page 6-48

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$ )

|                                                                                                             | Red<br><b>-9246</b>                                | Yellow<br><b>-9248</b> | Green<br><b>-9250</b> | Orange<br><b>-9704</b> |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------|-----------------------|------------------------|
| Power Dissipation (mW)                                                                                      | 135                                                | 85                     | 135                   | 135                    |
| Derating (mW/ $^\circ\text{C}$ ) From $25^\circ\text{C}$ 1. (mA/ $^\circ\text{C}$ ) From $50^\circ\text{C}$ | 1.8                                                | 1.6                    | 1.8                   | .5 <sup>1</sup>        |
| Forward Current (mA)                                                                                        | 25                                                 | 20                     | 25                    | 30                     |
| Peak Current (mA)<br>Pulse width = 10 $\mu\text{s}$                                                         | 500                                                | 500                    | 500                   | 500                    |
| Operating Temperature ( $^\circ\text{C}$ )                                                                  | -55/+100                                           | -55/+100               | -20/+100              | -55/+100               |
| Storage Temperature ( $^\circ\text{C}$ )                                                                    | -55/+100                                           | -55/+100               | -55/+100              | -55/+100               |
| Soldering Temperature                                                                                       | 260 $^\circ\text{C}$ , 5 seconds, 1.6 mm from case |                        |                       |                        |

Solder Adherence per MIL-STD-202E, Method 208C

**OPERATING CHARACTERISTICS** ( $T_A=25^\circ\text{C}$ )

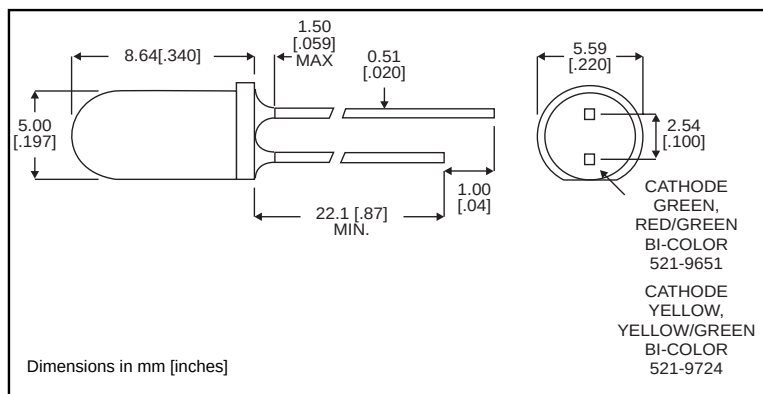
|                                           |         | Red<br><b>-9246</b> | Yellow<br><b>-9248</b> | Green<br><b>-9250</b> | Orange<br><b>-9704</b> |
|-------------------------------------------|---------|---------------------|------------------------|-----------------------|------------------------|
| Luminous Intensity (mcd)                  | Min.    | 4                   | 4                      | 4.2                   | 4                      |
|                                           | Typical | 7                   | 8                      | 5.2                   | 7                      |
| Peak Wavelength (nm)                      | Typical | 635                 | 583                    | 565                   | 600                    |
| $\lambda$ Peak                            |         |                     |                        |                       |                        |
| Viewing Angle ( $2\theta$ $^\circ$ )      | Typical | 60 $^\circ$         | 60 $^\circ$            | 60 $^\circ$           | 60 $^\circ$            |
| Forward Voltage (V)                       | Typical | 2.2                 | 2.2                    | 2.3                   | 1.9                    |
|                                           | Max.    | 3                   | 3                      | 3                     | 2.4                    |
| Reverse Voltage (V), $I_R=100\mu\text{A}$ | Min.    | 5                   | 5                      | 5                     | 5                      |

$\theta$  <sup>1</sup> is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm Discrete LED  
Bi-Color  
Non-Tinted, Diffused**

**Dialight**

**521-9651, -9724**



**PART NO.**

**LED COLOR**

521-9651

Red/Green

521-9724

Yellow/Green

**MOUNTING CLIP: 515-0005**  
located on page 6-48

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$ )

|                                                      | Red/Green<br><b>-9651</b>          | Yellow/Green<br><b>-9724</b> |
|------------------------------------------------------|------------------------------------|------------------------------|
| Power Dissipation (mW)                               | 100/100                            | 60/100                       |
| Forward Current (mA)                                 | 40/30                              | 20/30                        |
| Derating (mA/°C) From 50°C                           | .5/.4                              | .25/.40                      |
| Peak Current (mA)<br>Pulse width = 100 $\mu\text{s}$ | 200/120                            | 80/120                       |
| Operating Temperature (°C)                           | -55/+100                           | -55/+100                     |
| Storage Temperature (°C)                             | -55/+100                           | -55/+100                     |
| Soldering Temperature                                | 260°C, 5 seconds, 1.6 mm from case |                              |

Solder Adherence per MIL-STD-202E, Method 208C

**OPERATING CHARACTERISTICS** ( $T_A=25^\circ\text{C}$ )

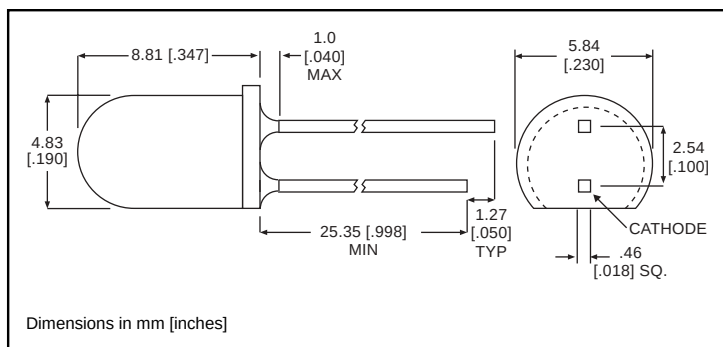
|                                           |         | Red/Green<br><b>-9651</b> | Yellow/Green<br><b>-9724</b> |
|-------------------------------------------|---------|---------------------------|------------------------------|
| Luminous Intensity (mcd)                  | Min.    | 29/12.6                   | 2.5/2.5                      |
| $I_F=20\text{mA}$                         | Typical | 90/40                     | 8.7/8.7                      |
| Peak Wavelength (nm)                      | Typical | 660/565                   | 585/565                      |
| $\lambda_{\text{Peak}}$                   |         |                           |                              |
| Viewing Angle ( $2\theta_{\frac{1}{2}}$ ) | Typical | 60°                       | 50°                          |
| Forward Voltage (V)                       | Typical | 1.8/2.1                   | 2.1/2.1                      |
| $I_F=20\text{mA}$                         | Max.    | 2.4/2.8                   | 2.8/2.8                      |

$\theta_{\frac{1}{2}}$  is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm Discrete LED**  
**Super Bright, Water Clear**  
**Non-Tinted, Non-Diffused**

**Dialight**

**521-9464,-9465,-9466**



**PART NO.**

521-9464  
521-9465  
521-9466

**COLOR**

Red  
Green  
Yellow

**MOUNTING CLIP: 515-0004**  
located on page 6-48

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$ )

|                                                     | Red<br><b>-9464</b>                 | Green<br><b>-9465</b> | Yellow<br><b>-9466</b> |
|-----------------------------------------------------|-------------------------------------|-----------------------|------------------------|
| Power Dissipation (mW)                              | 135                                 | 135                   | 85                     |
| Derating (mW/°C) From 25°C 1. From 50 °C            | 1.8                                 | 1.8                   | 1.6 <sup>1</sup>       |
| Forward Current (mA)                                | 30                                  | 30                    | 20                     |
| Peak Current (mA)<br>Pulse width = 10 $\mu\text{s}$ | 500                                 | 500                   | 500                    |
| Operating Temperature (°C)                          | -55/+100                            | -20/+100              | -55/+100               |
| Storage Temperature (°C)                            | -55/+100                            | -55/+100              | -55/+100               |
| Soldering Temperature                               | 260 °C, 5 seconds, 1.6 mm from case |                       |                        |

Solder Adherence per MIL-STD-202E, Method 208C

**OPERATING CHARACTERISTICS** ( $T_A=25^\circ\text{C}$ )

|                                           |         | Red<br><b>-9464</b> | Green<br><b>-9465</b> | Yellow<br><b>-9466</b> |
|-------------------------------------------|---------|---------------------|-----------------------|------------------------|
| Luminous Intensity (mcd)                  | Min.    | 80                  | 80                    | 80                     |
|                                           | Typical | 125                 | 120                   | 140                    |
| Peak Wavelength (nm)                      | Typical | 635                 | 565                   | 583                    |
| $\lambda$ Peak                            |         |                     |                       |                        |
| Viewing Angle ( $2\theta^{\frac{1}{2}}$ ) | Typical | 24°                 | 24°                   | 24°                    |
| Forward Voltage (V)                       | Typical | 2.2                 | 2.3                   | 2.2                    |
|                                           | Max.    | 3                   | 3                     | 3                      |
| Reverse Voltage (V), $I_R=100\mu\text{A}$ | Min.    | 5                   | 5                     | 5                      |

$\theta^{\frac{1}{2}}$  is the off axis angle at which the luminous intensity is half the axial luminous intensity



**5mm  
High Efficiency  
Diffused**

**Dialight**

**5HD-xxxx**

**\* NOT A VALID PART  
NUMBER. THIS SHEET IS FOR  
REFERENCE ONLY.**

| TYPE        | COLOR  |
|-------------|--------|
| *5HD-9269   | Red    |
| *5HD-9270-2 | Green  |
| *5HD-9270-5 | Green  |
| *5HD-9271-2 | Yellow |
| *5HD-9271-5 | Yellow |

#### ABSOLUTE MAXIMUM RATINGS

| (T <sub>A</sub> =25°C)                  | Red<br>-9269                       | Green<br>-9270-2 | Green<br>-9270-5 | Yellow<br>-9271-2 | Yellow<br>-9271-5 |
|-----------------------------------------|------------------------------------|------------------|------------------|-------------------|-------------------|
| Power Dissipation (mW)                  | 60                                 | 140              | 75               | 200               | 60                |
| Derating (mW/°C) From 50°C 1. From 40°C | .66 <sup>1</sup>                   |                  | .66 <sup>1</sup> |                   | .66 <sup>1</sup>  |
| Forward Current (mA)                    | 20                                 | 40               | 25               | 60                | 20                |
| Derating (mA/°C) From 25°C              |                                    | .6               |                  | .8                |                   |
| Peak Current (mA)<br>Pulse width = 1μs  | 60                                 | 500              | 60               | 1000              | 60                |
| Operating Temperature (°C)              | -25/+85                            | -55/+100         | -25/+85          | -55/+100          | -25/+85           |
| Storage Temperature (°C)                | -30/+100                           | -55/+100         | -30/+100         | -55/+100          | -30/+100          |
| Soldering Temperature                   | 260°C, 5 seconds, 1.6 mm from case |                  |                  |                   |                   |

Solder Adherence per MIL-STD-202E, Method 208C

#### OPERATING CHARACTERISTICS

| (T <sub>A</sub> =25°C)                                              |         | Red<br>-9269 | Green<br>-9270-2 | Green<br>-9270-5 | Yellow<br>-9271-2 | Yellow<br>-9271-5 |
|---------------------------------------------------------------------|---------|--------------|------------------|------------------|-------------------|-------------------|
| Luminous Intensity (mcd)                                            | Min.    | 2.2          | 4                | 3.6              | 4                 | 2.2               |
| I <sub>F</sub> =10mA                                                | Typical | 7            | 32               | 10               | 10                | 6.3               |
| Peak Wavelength (nm)                                                | Typical | 650          | 565              | 563              | 590               | 585               |
| λ Peak                                                              |         |              |                  |                  |                   |                   |
| Viewing Angle (2Θ °)                                                | Typical | 50°          | 50°              | 65°              | 70°               | 50°               |
| Forward Voltage (V)                                                 | Typical | 2.2          | 2*               | 2.1              | 2.4*              | 2.1               |
| I <sub>F</sub> =10mA, *I <sub>F</sub> =20mA                         | Max.    | 2.5          | 2.6*             | 3                | 3*                | 3                 |
| Reverse Voltage (V),<br>I <sub>R</sub> =100μA *I <sub>R</sub> =10μA | Min.    | 5            | 5*               | 3*               | 5*                | 3                 |

Θ<sup>1</sup> is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm  
General Purpose  
Diffused**

**Dialight**

**5ND-xxxx**

**\* NOT A VALID PART  
NUMBER. THIS SHEET IS FOR  
REFERENCE ONLY.**

**TYPE**

\*5ND-9672  
\*5ND-9673  
\*5ND-9674

**COLOR**

Red  
Yellow  
Green

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$ )

|                                                                            | Red<br>-9672                                       | Yellow<br>-9673 | Green<br>-9674 |
|----------------------------------------------------------------------------|----------------------------------------------------|-----------------|----------------|
| Power Dissipation (mW)                                                     | 80                                                 | 60              | 100            |
| Forward Current (mA)                                                       | 40                                                 | 20              | 30             |
| Derating (mA/ $^\circ\text{C}$ ) <i>From 25<math>^\circ\text{C}</math></i> | .5                                                 | .25             | .4             |
| Peak Current (mA)<br><i>Pulse width = 10 <math>\mu\text{s}</math></i>      | 200                                                | 80              | 120            |
| Operating Temperature ( $^\circ\text{C}$ )                                 | -55/+100                                           | -55/+100        | -55/+100       |
| Storage Temperature ( $^\circ\text{C}$ )                                   | -55/+100                                           | -55/+100        | -55/+100       |
| Soldering Temperature                                                      | 260 $^\circ\text{C}$ , 5 seconds, 1.6 mm from case |                 |                |

*Solder Adherence per MIL-STD-202E, Method 208C*

**OPERATING CHARACTERISTICS** ( $T_A=25^\circ\text{C}$ )

|                                           |         | Red<br>-9672 | Yellow<br>-9673 | Green<br>-9674 |
|-------------------------------------------|---------|--------------|-----------------|----------------|
| Luminous Intensity (mcd)                  | Min.    | 3.5          | 3.5             | 3.5            |
|                                           | Typical | 12.3         | 12.3            | 12.3           |
| Peak Wavelength (nm)                      | Typical | 635          | 585             | 565            |
| $\lambda$ Peak                            |         |              |                 |                |
| Viewing Angle ( $2\theta_{\frac{1}{2}}$ ) | Typical | 60 $^\circ$  | 60 $^\circ$     | 60 $^\circ$    |
| Forward Voltage (V)                       | Typical | 2            | 2.1             | 2.1            |
|                                           | Max.    | 2.8          | 2.8             | 2.8            |
| Reverse Voltage (V), $I_R=100\mu\text{A}$ | Min.    | 5            | 5               | 5              |

$\theta_{\frac{1}{2}}$  is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm  
Integral Resistor  
Diffused**

**Dialight**  
**5RD-XXXX**

**\* NOT A VALID PART  
NUMBER. THIS SHEET IS FOR  
REFERENCE ONLY.**

| <u>TYPE</u> | <u>COLOR</u> | <u>VOLTS</u> |
|-------------|--------------|--------------|
| *5RD-9378   | Green        | 12           |
| *5RD-9379   | Yellow       | 12           |
| *5RD-9422   | Red          | 5            |
| *5RD-9423   | Green        | 5            |

**ABSOLUTE MAXIMUM RATINGS**

(T<sub>A</sub>=25°C)

|                                                | Green 12V<br><b>-9378</b>          | Yellow 12V<br><b>-9379</b> | Red 5V<br><b>-9422</b> | Green 5V<br><b>-9423</b> |
|------------------------------------------------|------------------------------------|----------------------------|------------------------|--------------------------|
| Forward Voltage (V)<br>*(T <sub>A</sub> =70°C) | 1.5*                               | 1.5                        | 7.5                    | 7.5                      |
| Operating Temperature (°C)                     | -20/+85                            | -40/+85                    | -40/+85                | -20/+85                  |
| Storage Temperature (°C)                       | -55/+100                           | -55/+100                   | -55/+100               | -55/+100                 |
| Soldering Temperature                          | 260°C, 5 seconds, 1.6 mm from case |                            |                        |                          |

Solder Adherence per MIL-STD-202E, Method 208C

**OPERATING CHARACTERISTICS**

(T<sub>A</sub>=25°C)

|                                                                      |                 | Green 12V<br><b>-9378</b> | Yellow 12V<br><b>-9379</b> | Red 5V<br><b>-9422</b> | Green 5V<br><b>-9423</b> |
|----------------------------------------------------------------------|-----------------|---------------------------|----------------------------|------------------------|--------------------------|
| Luminous Intensity (mcd)<br>V <sub>F</sub> =5V, *V <sub>F</sub> =12V | Min.<br>Typical | 1.5*<br>4*                | 1.5*<br>4*                 | 1<br>2                 | 2<br>8                   |
| Peak Wavelength (nm)<br>λ Peak                                       | Typical         | 565                       | 583                        | 655                    | 565                      |
| Viewing Angle (2θ *)                                                 | Typical         | 60°                       | 60°                        | 60°                    | 60°                      |
| Forward Current (mA), V <sub>F</sub> =5V<br>*V <sub>F</sub> =12V     | Typical<br>Max. | 13*<br>20*                | 13*<br>20*                 | 13<br>20               | 12<br>15                 |
| Reverse Voltage (V), I <sub>R</sub> =100μA                           | Typical         | 5                         | 5                          | 5                      | 5                        |

θ<sup>1</sup> is the off axis angle at which the luminous intensity is half the axial luminous intensity

**5mm  
Super Bright LED  
Diffused**

**Dialight**  
**5SD-XXXX**

**\* NOT A VALID PART  
NUMBER. THIS SHEET IS FOR  
REFERENCE ONLY.**

| <u>TYPE</u> | <u>COLOR</u> |
|-------------|--------------|
| *5SD-9441   | Red          |
| *5SD-9455   | Yellow       |
| *5SD-9456   | Green        |

| <b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>A</sub> =25°C)      | Red<br><b>-9441</b>                | Yellow<br><b>-9455</b> | Green<br><b>-9456</b> |
|-------------------------------------------------------------|------------------------------------|------------------------|-----------------------|
| Power Dissipation (mW)                                      | 75                                 | 75                     | 75                    |
| Forward Current (mA)                                        | 25                                 | 25                     | 25                    |
| Derating (mA/°C) <i>From 50°C</i> <i>*(mW/°C) From 40°C</i> | .66*                               | .5                     | .5                    |
| Peak Current (mA)<br><i>Pulse width = 1 ms</i>              | 60                                 | 60                     | 60                    |
| Operating Temperature (°C)                                  | -55/+100                           | -55/+100               | -55/+100              |
| Storage Temperature (°C)                                    | -55/+100                           | -55/+100               | -55/+100              |
| Soldering Temperature                                       | 260°C, 5 seconds, 1.6 mm from case |                        |                       |
| <i>Solder Adherence per MIL-STD-202E, Method 208C</i>       |                                    |                        |                       |

| <b>OPERATING CHARACTERISTICS</b> ( $T_A=25^{\circ}\text{C}$ ) |         | Red<br>-9441  | Yellow<br>-9455 | Green<br>-9456 |
|---------------------------------------------------------------|---------|---------------|-----------------|----------------|
| Luminous Intensity (mcd)                                      | Min.    | 17            | 17              | 17             |
| $I_F=20\text{mA}$                                             | Typical | 34            | 34              | 34             |
| Peak Wavelength (nm)                                          | Typical | 650           | 585             | 563            |
| $\lambda_{\text{Peak}}$                                       |         |               |                 |                |
| Viewing Angle ( $2\Theta^{\frac{1}{2}}$ )                     | Typical | 50 $^{\circ}$ | 50 $^{\circ}$   | 50 $^{\circ}$  |
| Forward Voltage (V)                                           | Typical | 2.1           | 2.2             | 2.2            |
| $I_F=20\text{mA}$                                             | Max.    | 2.55          | 3               | 3              |
| Reverse Voltage (V), $I_R=10\mu\text{A}$                      | Min.    | 3             | 3               | 3              |

$\Theta^{\frac{1}{2}}$  is the off axis angle at which the luminous intensity is half the axial luminous intensity