

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



## 552-0xxx



Standard Polarity shown in drawing: Cathode right

### Features

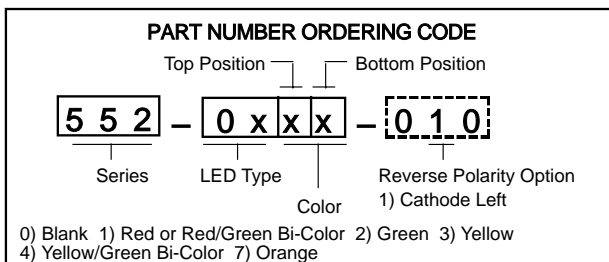
- Multiple CBIs form horizontal LED arrays on 6.35mm (0.250") center-lines.
- High Contrast, UL 94 V-0 rated, black housing
- Oxygen index: 32%
- Polymer content: PBT, 0.710 g
- Housing stand-offs facilitate PCB cleaning
- Solderability per MIL-STD-202F, method 208F
- LEDs are safe for direct viewing 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 [ $\pm 0.008$ ]



### 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 552-0xxx part numbers with Reverse Polarity (Cathode Left), please add -010 to the part numbers shown above.

-010 Ordering Code Suffix required ONLY for Reverse Polarity Option

## 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 <sub>½</sub> | 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 <sub>½</sub> | 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 <sub>½</sub> | 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 <sub>½</sub> | 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 <sub>½</sub> | 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 <sub>½</sub> | 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   |



# 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

| <b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^\circ\text{C}$ ) | Red                                | Yellow       |
|------------------------------------------------------------|------------------------------------|--------------|
|                                                            | <b>-9183</b>                       | <b>-9284</b> |
| 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

| <b>OPERATING CHARACTERISTICS</b> ( $T_A=25^\circ\text{C}$ ) |         | Red          | Yellow       |
|-------------------------------------------------------------|---------|--------------|--------------|
|                                                             |         | <b>-9183</b> | <b>-9284</b> |
| Luminous Intensity (mcd)                                    | Min.    | 2            | 2            |
|                                                             | Typical | 8            | 8            |
| Peak Wavelength (nm)                                        | Typical | 635          | 583          |
| Viewing Angle ( $2\theta^{1/2}$ )                           | Typical | 60°          | 60°          |
| Forward Current (I)                                         | Typical | 10           | 10           |
|                                                             | Max     | 15           | 15           |
| Reverse Voltage (V), $I_R=100\mu\text{A}$                   | Min.    | 5            | 5            |

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

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

**Dialight**

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



| <u>PART NO.</u> | <u>COLOR</u> |
|-----------------|--------------|
| 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><b>-9320</b>                | Yellow<br><b>-9321</b> | Green<br><b>-9327</b> |
|------------------------------------------|------------------------------------|------------------------|-----------------------|
| 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><b>-9320</b> | Yellow<br><b>-9321</b> | Green<br><b>-9327</b> |
|--------------------------------|---------|---------------------|------------------------|-----------------------|
| Luminous Intensity (mcd)       | Min.    | 1.2                 | 1.2                    | 1.2                   |
|                                | Typical | 2                   | 1.8                    | 1.8                   |
| Peak Wavelength (nm)<br>λ Peak | Typical | 635                 | 583                    | 565                   |
| Viewing Angle (2θ ½)           | Typical | 50°                 | 50°                    | 50°                   |
| Forward Voltage (V)<br>IF=2mA  | Typical | 1.8                 | 1.9                    | 1.8                   |
|                                | Max.    | 2.2                 | 2.7                    | 2.2                   |
| Reverse Voltage (V), IR=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**



| PART NO. | COLOR  |
|----------|--------|
| 521-9246 | Red    |
| 521-9248 | Yellow |
| 521-9250 | Green  |
| 521-9704 | Orange |

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

| <b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^\circ\text{C}$ )                                                    | 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'                    |
| 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

| <b>OPERATING CHARACTERISTICS</b> ( $T_A=25^\circ\text{C}$ ) |         | Red<br><b>-9246</b> | Yellow<br><b>-9248</b> | Green<br><b>-9250</b> | Orange<br><b>-9704</b> |
|-------------------------------------------------------------|---------|---------------------|------------------------|-----------------------|------------------------|
| Luminous Intensity (mcd)<br>$I_F=10\text{mA}$               | Min.    | 4                   | 4                      | 4.2                   | 4                      |
|                                                             | Typical | 7                   | 8                      | 5.2                   | 7                      |
| Peak Wavelength (nm)<br>$\lambda$ Peak                      | Typical | 635                 | 583                    | 565                   | 600                    |
| Viewing Angle ( $2\theta$ °)                                | Typical | 60°                 | 60°                    | 60°                   | 60°                    |
| Forward Voltage (V)<br>$I_F=10\text{mA}$                    | 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                      |

$\theta$  is the off axis angle at which the luminous intensity is half the axial luminous intensity

**6**

**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><i>Pulse width = 100 μs</i> | 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                      |
|                                                 | Typical | 90/40                     | 8.7/8.7                      |
| Peak Wavelength (nm)<br>$\lambda_{\text{Peak}}$ | Typical | 660/565                   | 585/565                      |
| Viewing Angle ( $2\theta^{\circ}$ )             | Typical | 60°                       | 50°                          |
| Forward Voltage (V)                             | Typical | 1.8/2.1                   | 2.1/2.1                      |
|                                                 | Max.    | 2.4/2.8                   | 2.8/2.8                      |

$\theta^{\circ}$  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. COLOR**

|          |        |
|----------|--------|
| 521-9464 | Red    |
| 521-9465 | Green  |
| 521-9466 | 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 μs | 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                    |
| Viewing Angle ( $2\theta$ °)              | 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                      |

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

**6**

5mm  
High Efficiency  
Diffused



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)<br>Derating (mW/°C) From 50°C 1. From 40°C | 60<br>.66 <sup>1</sup>             | 140              | 75<br>.66 <sup>1</sup> | 200               | 60<br>.66 <sup>1</sup> |
| Forward Current (mA)<br>Derating (mA/°C) From 25°C                | 20                                 | 40<br>.6         | 25                     | 60<br>.8          | 20                     |
| 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

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**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               |
|                          | 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               |
|                          | Max.                                        | 2.5          | 2.6*             | 3                | 3*                | 3                 |
| Reverse Voltage (V),     | Min.                                        | 5            | 5*               | 3*               | 5*                | 3                 |
|                          | I <sub>R</sub> =100μA *I <sub>R</sub> =10μA |              |                  |                  |                   |                   |

Θ 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

COLOR

\*5ND-9672

Red

\*5ND-9673

Yellow

\*5ND-9674

Green

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

|                                                 | Red<br><b>-9672</b>                | Yellow<br><b>-9673</b> | Green<br><b>-9674</b> |
|-------------------------------------------------|------------------------------------|------------------------|-----------------------|
| Power Dissipation (mW)                          | 80                                 | 60                     | 100                   |
| Forward Current (mA)                            | 40                                 | 20                     | 30                    |
| Derating (mA/°C) <i>From 25°C</i>               | .5                                 | .25                    | .4                    |
| Peak Current (mA)<br><i>Pulse width = 10 μs</i> | 200                                | 80                     | 120                   |
| 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** ( $T_A=25^\circ\text{C}$ )

|                                                 |         | Red<br><b>-9672</b> | Yellow<br><b>-9673</b> | Green<br><b>-9674</b> |
|-------------------------------------------------|---------|---------------------|------------------------|-----------------------|
| Luminous Intensity (mcd)<br>$I_F=20\text{mA}$   | Min.    | 3.5                 | 3.5                    | 3.5                   |
|                                                 | Typical | 12.3                | 12.3                   | 12.3                  |
| Peak Wavelength (nm)<br>$\lambda_{\text{Peak}}$ | Typical | 635                 | 585                    | 565                   |
| Viewing Angle ( $2\theta^{\circ}$ )             | Typical | 60°                 | 60°                    | 60°                   |
| Forward Voltage (V)<br>$I_F=20\text{mA}$        | 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                     |

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

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5mm  
Integral Resistor  
Diffused

**Dialight**  
5RD-xxxx

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

| TYPE      | COLOR  | VOLTS |
|-----------|--------|-------|
| *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>-9378                 | Yellow 12V<br>-9379 | Red 5V<br>-9422 | Green 5V<br>-9423 |
|------------------------------------------------|------------------------------------|---------------------|-----------------|-------------------|
| Forward Voltage (V)<br>*(T <sub>A</sub> =70°C) | 15 *                               | 15                  | 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>-9378 | Yellow 12V<br>-9379 | Red 5V<br>-9422 | Green 5V<br>-9423 |
|------------------------------------------------------------------|---------|--------------------|---------------------|-----------------|-------------------|
| Luminous Intensity (mcd)                                         | Min.    | 1.5*               | 1.5*                | 1               | 2                 |
|                                                                  | Typical | 4*                 | 4*                  | 2               | 8                 |
| Peak Wavelength (nm)                                             | 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 | 13*                | 13*                 | 13              | 12                |
|                                                                  | Max.    | 20*                | 20*                 | 20              | 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.**

| TYPE      | COLOR  |
|-----------|--------|
| *5SD-9441 | Red    |
| *5SD-9455 | Yellow |
| *5SD-9456 | Green  |

| <b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^\circ\text{C}$ )  | Red<br>-9441                       | Yellow<br>-9455 | Green<br>-9456 |
|-------------------------------------------------------------|------------------------------------|-----------------|----------------|
| Power Dissipation (mW)                                      | 75                                 | 75              | 75             |
| Forward Current (mA)                                        | 25                                 | 25              | 25             |
| Derating (mA/°C) <i>From 50°C</i> *(mW/°C) <i>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 |                 |                |

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

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

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

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Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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