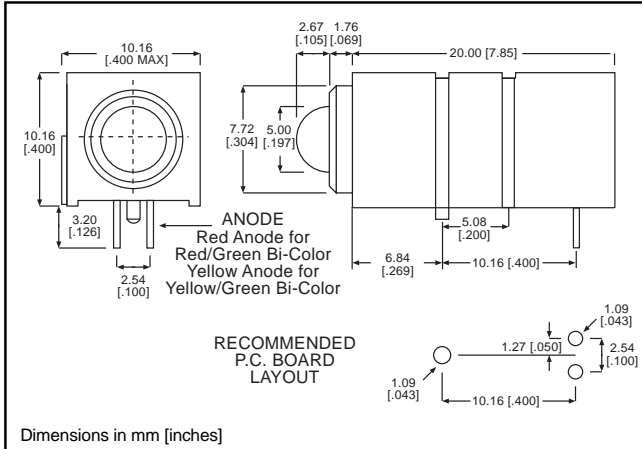


**5mm  
LED CBI® Circuit Board Indicator  
(DIN 41494 Compatible), Single**



**550-xx12**



Standard Polarity shown in drawing: Anode right

**Features**

- DIN 41494 compatible
- Multiple CBIs form horizontal LED arrays on 10.16mm (0.400") center-lines.
- High Contrast, UL 94 V-0 rated, black housing
- Oxygen index: 32%
- Polymer content: PBT, 2.242 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**

- For custom LEDs contact factory.

**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**

**INTEGRAL RESISTOR, 5 VOLTS**

- |          |        |
|----------|--------|
| 550-0512 | Red    |
| 550-0712 | Green  |
| 550-0812 | Yellow |

**LOW CURRENT**

- |          |        |
|----------|--------|
| 550-1112 | Red    |
| 550-1212 | Yellow |
| 550-1312 | Green  |

**HIGH EFFICIENCY**

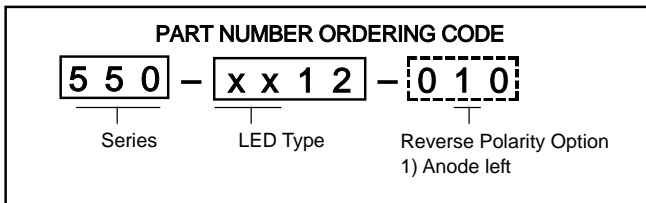
- |          |        |
|----------|--------|
| 550-2212 | Green  |
| 550-2312 | Yellow |
| 550-2412 | Red    |
| 550-2512 | Orange |

**BI-COLOR**

- |          |              |
|----------|--------------|
| 550-3012 | Red/Green    |
| 550-3112 | Yellow/Green |



To order any of the 550-xx12 part numbers with Reverse Polarity (Anode Left), please add -010 to the part numbers shown above.



-010 Ordering Code Suffix required ONLY for Reverse Polarity Option

# 550-xx12

(DIN 41494 Compatible)

## Typical Operating Characteristics ( $T_A=25^\circ\text{C}$ )

See LED data sheet for additional information

INTEGRAL RESISTOR, 5 VOLTS See page 6-55 and 6-56 for Reference Only LED Drive Circuit Examples. See page 6-57 for Pin Out

Part Number	Color	Peak Wavelength nm	$I_V$ mcd	Test Voltage	Forward Current (mA)	Viewing Angle $2\Theta_{1/2}$	LED Data sheet	Page #
550-0512	Red	655	2	5	13	60°	5RD-9422	6-52
550-0712	Green	565	8	5	12	60°	5RD-9423	6-52
550-0812	Yellow	583	8	5	10	60°	521-9284	6-41

## LOW CURRENT

Part Number	Color	Peak Wavelength nm	$I_V$ mcd	$V_F$ Volts	Test Current (mA)	Viewing Angle $2\Theta_{1/2}$	LED Data sheet	Page #
550-1112	Red	635	2	1.8	2	50°	521-9320	6-42
550-1212	Yellow	583	1.8	1.9	2	50°	521-9321	6-42
550-1312	Green	565	1.8	1.8	2	50°	521-9327	6-42

## HIGH EFFICIENCY

Part Number	Color	Peak Wavelength nm	$I_V$ mcd	$V_F$ Volts	Test Current (mA)	Viewing Angle $2\Theta_{1/2}$	LED Data sheet	Page #
550-2212	Green	563	10	2.1	10	65°	5HD-9270-5	6-49
550-2312	Yellow	585	6.3	2.1	10	50°	5HD-9271-5	6-49
550-2412	Red	650	7	2.2	10	50°	5HD-9269	6-49
550-2512	Orange	600	7	1.9	10	60°	521-9704	6-43

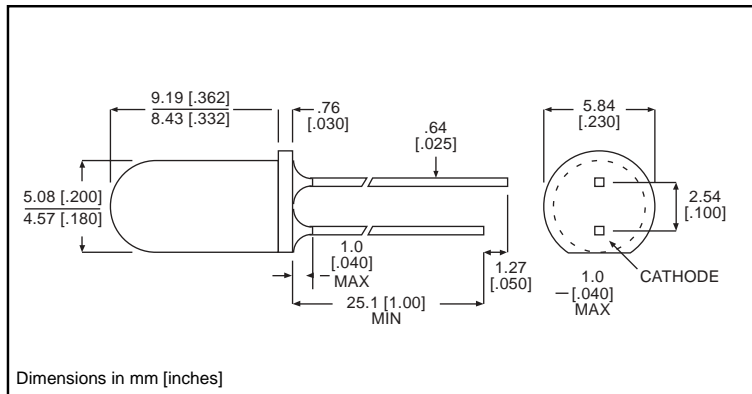
## BI-COLOR

Part Number	Color	Peak Wavelength nm	$I_V$ mcd	$V_F$ Volts	Test Current (mA)	Viewing Angle $2\Theta_{1/2}$	LED Data sheet	Page #
550-3012	Red/Green	660/565	90/40	1.8/2.1	20	60°	521-9651	6-46
550-3112	Yellow/Green	585/565	8.7/8.7	2.1/2.1	20	50°	521-9724	6-46

# 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 ( $2\theta^\circ$ )	Typical	60°	60°
Forward Current (I)	Typical	10	10
	Max	15	15
Reverse Voltage (V), $I_R=100\mu\text{A}$	Min.	5	5

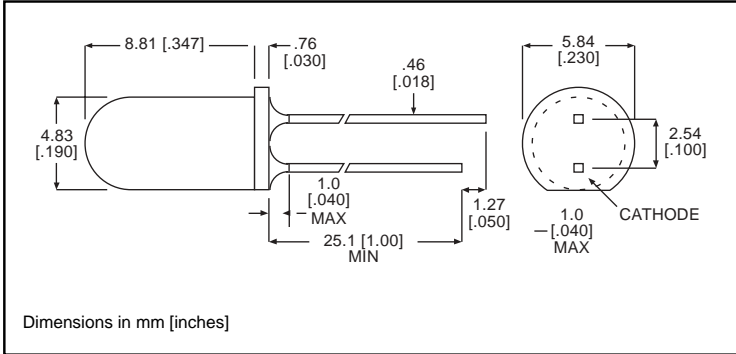
$\theta$  is the off axis angle at which the luminous intensity is half the axial luminous intensity

6

**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 <b>-9320</b>	Yellow <b>-9321</b>	Green <b>-9327</b>
Power Dissipation (mW)	27	36	24
Derating (mA/°C) <i>From 92°C</i>	1	1	1
Forward Current (mA)	7	7	7
Peak Current (mA) <i>Pulse width = 10 μs</i>	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)

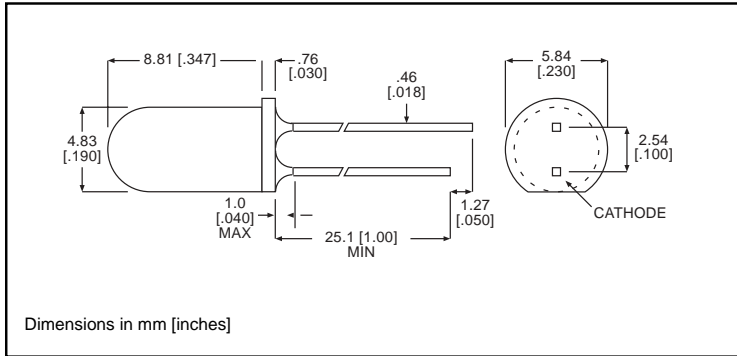
		Red <b>-9320</b>	Yellow <b>-9321</b>	Green <b>-9327</b>
Luminous Intensity (mcd) IF=2mA	Min.	1.2	1.2	1.2
	Typical	2	1.8	1.8
Peak Wavelength (nm) λ Peak	Typical	635	583	565
Viewing Angle (2θ°)	Typical	50°	50°	50°
Forward Voltage (V) IF=2mA	Typical	1.8	1.9	1.8
	Max.	2.2	2.7	2.2
Reverse Voltage (V), IR=50μA	Min.	5	5	5

θ 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**



<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

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^\circ\text{C}$ )	Red <b>-9246</b>	Yellow <b>-9248</b>	Green <b>-9250</b>	Orange <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) 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 <b>-9246</b>	Yellow <b>-9248</b>	Green <b>-9250</b>	Orange <b>-9704</b>
Luminous Intensity (mcd) $I_F=10\text{mA}$	Min.	4	4	4.2	4
	Typical	7	8	5.2	7
Peak Wavelength (nm) $\lambda$ Peak	Typical	635	583	565	600
Viewing Angle ( $2\theta^{1/2}$ )	Typical	60 $^\circ$	60 $^\circ$	60 $^\circ$	60 $^\circ$
Forward Voltage (V) $I_F=10\text{mA}$	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

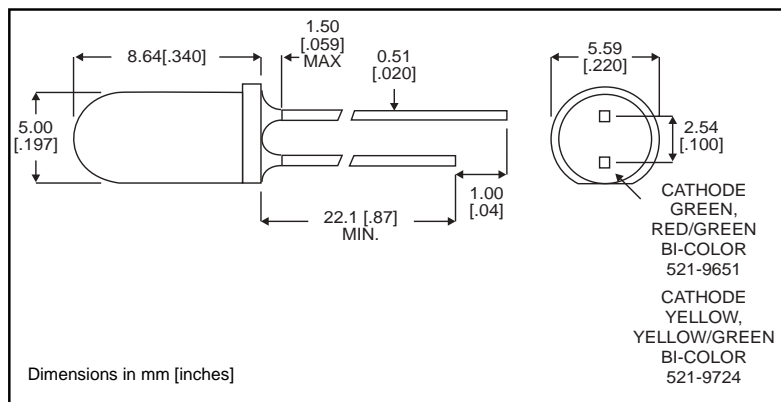
$\theta^{1/2}$  is the off axis angle at which the luminous intensity is half the axial luminous intensity

**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 <b>-9651</b>	Yellow/Green <b>-9724</b>
Power Dissipation (mW)	100/100	60/100
Forward Current (mA) Derating (mA/°C) From 50°C	40/30 .5/.4	20/30 .25/.40
Peak Current (mA) 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 <b>-9651</b>	Yellow/Green <b>-9724</b>
Luminous Intensity (mcd) $I_F=20\text{mA}$	Min. Typical	29/12.6 90/40	2.5/2.5 8.7/8.7
Peak Wavelength (nm) $\lambda$ Peak	Typical	660/565	585/565
Viewing Angle ( $2\theta_{1/2}$ )	Typical	60°	50°
Forward Voltage (V) $I_F=20\text{mA}$	Typical Max.	1.8/2.1 2.4/2.8	2.1/2.1 2.8/2.8

$\theta_{1/2}$  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.**

<u>TYPE</u>	<u>COLOR</u>
*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 <b>-9269</b>	Green <b>-9270-2</b>	Green <b>-9270-5</b>	Yellow <b>-9271-2</b>	Yellow <b>-9271-5</b>
Power Dissipation (mW)	60	140	75	200	60
Derating (mW/°C) <i>From 50°C 1. From 40°C</i>	.66 <sup>1</sup>		.66 <sup>1</sup>		.66 <sup>1</sup>
Forward Current (mA)	20	40	25	60	20
Derating (mA/°C) <i>From 25°C</i>		.6		.8	
Peak Current (mA) <i>Pulse width = 1μs</i>	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*

**6**

**OPERATING CHARACTERISTICS**

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

Θ | 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.**

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