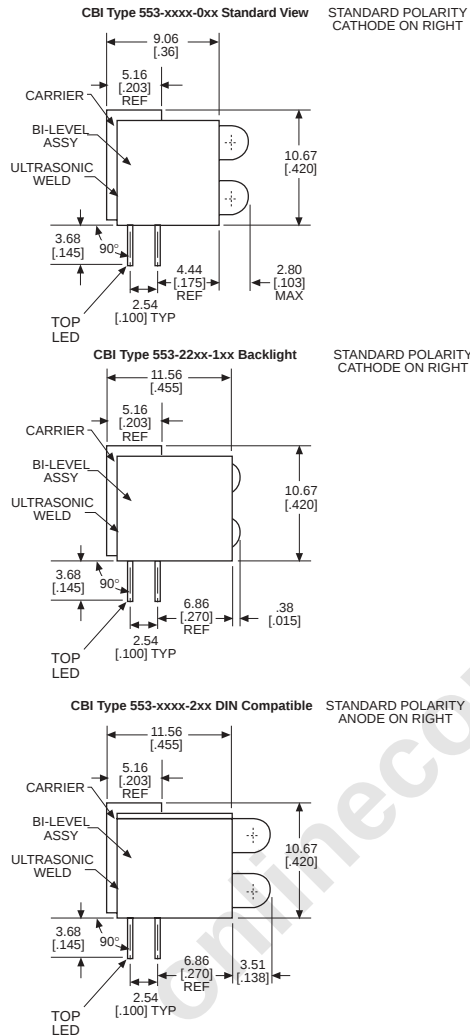


3mm LED CBI Circuit Board Indicator Ganged Arrays

Dialight

553-XXXX-XXX

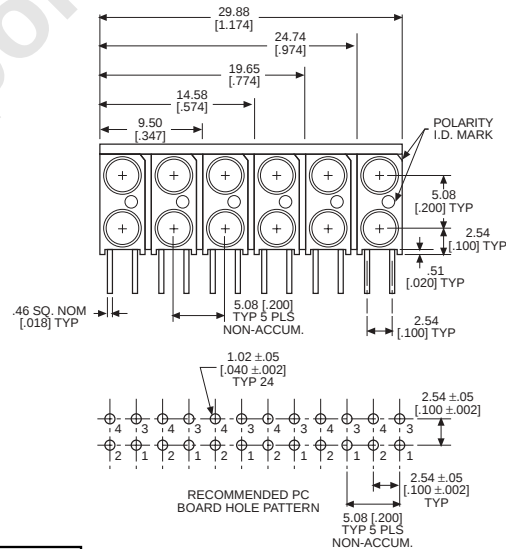


Features

- 2 through 12 LEDs
- Mount on .200 center lines
- Standard View: 553-xxxx-0xx compatible with:
553-xxxx single bi-level
- Backlight: 553-22xx-1xx compatible with:
553-22xx-100 single backlighting bi-level
- DIN Compatible: 553-xxxx-2xx compatible with:
553-xxxx-200 single DIN41494 bi-level
- Reduces insertion labor cost
- Welded angle bracket construction assures rigidity
- Carrier and housing material meets UL 94 V-0

Custom Combinations

- Consult factory for color or LED variations
- Narrow .185 mounting pitches available, consult factory



Standard Polarity Shown in Above Drawings

PART NUMBER ORDERING CODE

LED Type
01 - High Efficiency
02 - Low Current, 2mA
03 - Integral Resistor, 5V
07 - Bi-color
22 - Non-diffused

Top LED Color
Bottom LED Color
CBI Type
0 - Standard View
1 - Backlight
2 - DIN 41494 Compatible

Series

of Positions 2-6

5 5 3 - X X X X - X X X

Polarity Option
0) Standard Polarity
Cathode Right Standard View
Cathode Right Backlight
Anode Right DIN Compatible

1) Reverse Polarity
Cathode Left Standard View
Cathode Left Backlight
Anode Left DIN Compatible

Colors: 0) Blank 1) Red or Red/Green Bi-Color 2) Green 3) Yellow
4) Yellow/Green Bi-Color 7) Orange 8) Blue³

Tolerance note: As noted, otherwise:

- LED Protrusion: ±0.04 mm [±0.016]
- CBI Housing: ±0.02mm[±0.008]



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

See LED data sheet for additional information

STANDARD VIEW

See page 4-70 and 4-71 for Reference Only LED Drive Circuit Examples. See page 4-72 for Pin Out

Part Number	Color**	Peak Wavelength nm	Iv mcd	V _F Volts	Test Current (mA)	Viewing Angle 2 $\theta_{\%}$	LED Data sheet	Page #
553-0111-0xx	Red	650	10	2	10	45°	521-9427	4-64
553-0122-0xx	Green	563	16	2.1	10	45°	521-9408	4-64
553-0133-0xx	Yellow	585	6.3	2.1	10	45°	521-9428	4-64
553-0177-0xx	Orange	600	7	2.2	10	60°	521-9498	4-58
553-0188-0xx	Blue	428	12	3.5	10	70°	521-9831	4-57
553-0211-0xx	Red	635	1.6	1.7	2	60°	521-9324	4-60
553-0222-0xx	Green	565	1.6	1.9	2	60°	521-9326	4-60
553-0233-0xx	Yellow	585	1.6	1.8	2	60°	521-9325	4-60
553-0311-0xx	Red	635	29	5†	10††	60°	521-9215	4-59
553-0322-0xx	Green	565	19	5†	10††	60°	521-9323	4-59
553-0333-0xx	Yellow	585	12.6	5†	10††	60°	521-9322	4-59
553-0711-0xx	Red/Green	635/565	4.7/10	2/2.1	10	50°	521-9459	4-63
553-0744-0xx	Yellow/Green	585/565	4.3/6.3	2.1*/2.1*	10	80°	521-9478	4-62
553-2211-0xx	Red	635	29	2*	10	45°	521-9432	4-61
553-2222-0xx	Green	565	50	2.1*	10	45°	521-9430	4-61
553-2233-0xx	Yellow	585	20	2.1*	10	45°	521-9431	4-61

BACKLIGHT

Part Number	Color**	Peak Wavelength nm	Iv mcd	V _F Volts*	Test Current (mA)	Viewing Angle 2 $\theta_{\%}$	LED Data sheet	Page #
553-2211-1xx	Red-Red	635/635	29/29	2/2	10	45°	521-9432	4-61
553-2222-1xx	Green-Green	565/565	50/50	2.1/2.1	10	45°	521-9430	4-61
553-2223-1xx	Green-Yellow	565/585	50/20	2.1/2.1	10	45°	521-9430/-9431	4-61
553-2232-1xx	Yellow-Green	585/565	20/50	2.1/2.1	10	45°	521-9431/-9430	4-61
553-2233-1xx	Yellow-Yellow	585/585	20/20	2.1/2.1	10	45°	521-9431	4-61

DIN COMPATIBLE

Part Number	Color**	Peak Wavelength nm	Iv mcd	V _F Volts	Test Current (mA)	Viewing Angle 2 $\theta_{\%}$	LED Data sheet	Page #
553-0111-2xx	Red	635	10	2*	10	60°	521-9216	4-58
553-0122-2xx	Green	565	12.6	2.1*	10	60°	521-9210	4-58
553-0133-2xx	Yellow	585	10	2.1*	10	60°	521-9211	4-58
553-0177-2xx	Orange	600	7	2.2	10	60°	521-9498	4-58
553-0188-2xx	Blue	428	12	3.5	10	70°	521-9831	4-57
553-0211-2xx	Red	635	1.6	1.7	2	60°	521-9324	4-60
553-0222-2xx	Green	565	1.6	1.9	2	60°	521-9326	4-60
553-0233-2xx	Yellow	585	1.6	1.8	2	60°	521-9325	4-60
553-0311-2xx	Red	635	29	5†	10††	60°	521-9215	4-59
553-0322-2xx	Green	565	19	5†	10††	60°	521-9323	4-59
553-0333-2xx	Yellow	585	12.6	5†	10†	60°	521-9322	4-59
553-0711-2xx	Red/Green	635/565	4.7/10	2/2.1	10	50°	521-9459	4-63
553-0744-2xx	Yellow/Green	585/565	4.3/6.3	2.1*/2.1*	10	80°	521-9478	4-62
553-2211-2xx	Red	635	29	2*	10	45°	521-9432	4-61
553-2222-2xx	Green	565	50	2.1*	10	45°	521-9430	4-61
553-2233-2xx	Yellow	585	20	2.1*	10	45°	521-9431	4-61

*I_F = 20mA † Test Voltage †† Forward Current mA ** Top-Bottom LED



3mm Discrete LED
Tinted, Diffused



521-9831



PART NO. 521-9831
COLOR Blue³

MOUNTING CLIP: 515-0006
located on page 4-65



ABSOLUTE MAXIMUM RATINGS (T _A =25°C)		Blue -9831
Power Dissipation (mW)		100
Forward Current (mA)		20
Derating (mA/°C) From 55°C		.44
Operating Temperature (°C)		-40/+100
Storage Temperature (°C)		-40/+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°C)		Blue -9831
Luminous Intensity (mcd)	Min.	6.3
I _F =10mA	Typical	12
Peak Wavelength (nm)	Typical	428
λ Peak		
Viewing Angle (2Θ½)	Typical	70°
Forward Voltage (V)	Typical	3.5
I _F =10mA	Max.	4.2
Reverse Voltage (V) I _R =10μA	Min.	3

Θ½ is the off axis angle at which the luminous intensity is half the axial luminous intensity

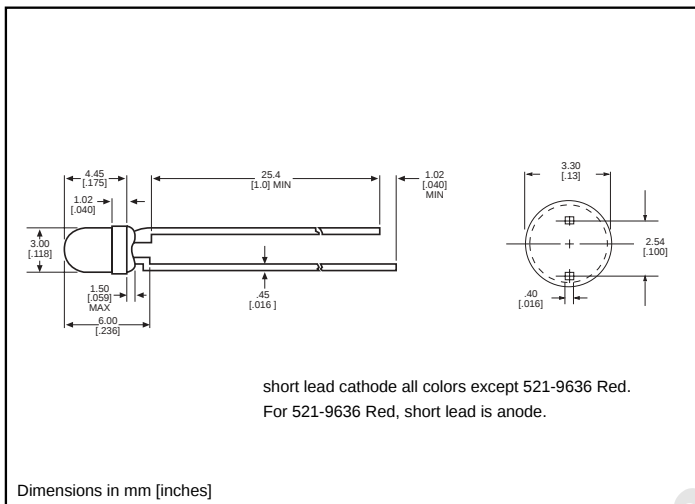
3mm Discrete LED

High Efficiency

Diffused

Dialight

521-9210, -9211, -9216, -9498, -9636



PART NO. COLOR

521-9210 Green

521-9211 Yellow

521-9216 Red

521-9498 Orange

521-9636 Red

NEW

MOUNTING CLIP: 515-0006
located on page 4-65

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

	Green -9210	Yellow -9211	Red -9216	Orange -9498	Red -9636
Power Dissipation (mW)	100	60	100	135	100
Forward Current (mA)	30	20	30	25	40
Derating (mA/°C) From 50°C ¹ from 25°C	.4	.25	.4	.5	.5 ¹
Operating Temperature (°C)	-55/+100	-55/+100	-55/+100	-55/+100	-55/+100
Storage Temperature (°C)	-55/+100	-55/+100	-55/+100	-55/+100	-55/+100
Soldering Temperature	260°C, 5 seconds, 1.6 mm from body				

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

OPERATING CHARACTERISTICS (T_A=25°C)

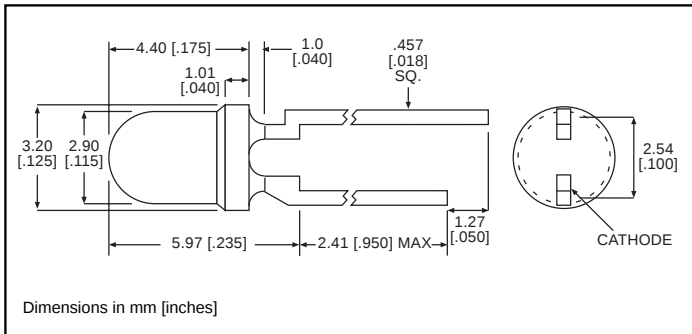
		Green -9210	Yellow -9211	Red -9216	Orange -9498	Red -9636
Luminous Intensity (mcd)	Min.	4.7	7.4	7.4	3.4	8.7 ¹
I _F =10mA ¹ I _F =20mA	Typical	12.6	10	10	7	48 ¹
Peak Wavelength (nm)	Typical	565	585	635	600	660
λ Peak						
Viewing Angle (2θ °)	Typical	60°	60°	60°	60°	60°
Forward Voltage (V)	Typical	2.1 ¹	2.1 ¹	2 ¹	2.2	1.8 ¹
I _F =10mA ¹ I _F =20mA	Max.	2.8 ¹	2.8 ¹	2.8 ¹	3	2.4 ¹
Reverse Voltage (V), I _R =100μA	Max.	5	5	5	5	4

Θ¹ is the off axis angle at which the luminous intensity is half the axial luminous intensity

3mm Discrete LED Integral Resistor, 5V Diffused

Dialight

521-9215, -9322, -9323



PART NO.

521-9215
521-9322
521-9323

COLOR

Red
Yellow
Green

MOUNTING CLIP: 515-0006
located on page 4-65

4

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

	Red -9215	Yellow -9322	Green -9323
Forward Voltage (V) Derating (V/°C) From 50°C	7.5 .086	7.5 .086	7.5 .071
Operating Temperature (°C)	-40/+85	-40/+85	-20/+85
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°C)

		Red -9215	Yellow -9322	Green -9323
Luminous Intensity (mcd) V _F =5V	Min. Typical	8.7 29	3.7 12.6	5.6 19
Peak Wavelength (nm) λ Peak	Typical	635	585	565
Viewing Angle (2Θ _{1/2})	Typical	60°	60°	60°
Forward Current (mA) V _F =5V	Typical Max.	10 20	10 20	10 20
Reverse Voltage (V), I _R =100μA	Min.	5	5	5

Θ_{1/2} is the off axis angle at which the luminous intensity is half the axial luminous intensity

3mm Discrete LED

Low Current

Diffused

Dialight

521-9324, -9325, -9326



PART NO.

COLOR

521-9324

Red

521-9325

Yellow

521-9326

Green

MOUNTING CLIP: 515-0006

located on page 4-65

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

	Red -9324	Yellow -9325	Green -9326
Power Dissipation (mW)	20	20	20
Forward Current (mA)	7	7	7
Derating (mA/ $^\circ\text{C}$) From 90°C	.7	.7	.7
Peak Current (mA) Pulse width = 10 μs	500	500	500
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 -9324	Yellow -9325	Green -9326
Luminous Intensity (mcd)	Min.	1	1	1
	Typical	1.6	1.6	1.6
Peak Wavelength (nm)	Typical	635	585	565
λ Peak				
Viewing Angle (2θ $^\circ$)	Typical	60 $^\circ$	60 $^\circ$	60 $^\circ$
Forward Voltage (V)	Typical	1.7	1.8	1.9
	Max.	2.2	2.7	2.2
Reverse Voltage (V), $I_R=50\mu\text{A}$	Min.	5	5	5

θ is the off axis angle at which the luminous intensity is half the axial luminous intensity

3mm Discrete LED

High Efficiency

Tinted, Non-Diffused

Dialight

521-9430, -9431, -9432



PART NO.

521-9430
521-9431
521-9432

COLOR

Green
Yellow
Red

MOUNTING CLIP: 515-0006
located on page 4-65

4

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

	Green -9430	Yellow -9431	Red -9432
Power Dissipation (mW)	100	60	100
Forward Current (mA)	30	20	30
Derating (mA/°C) From 50°C	.4	.25	.4
Peak Current (mA) Pulse width = 100µs	120	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°C)

		Green -9430	Yellow -9431	Red -9432
Luminous Intensity (mcd)	Min.	32	10	8.7
I _F =10mA	Typical	50	20	29
Peak Wavelength (nm)	Typical	565	585	635
λ Peak				
Viewing Angle (2Θ _{1/2})	Typical	45°	45°	45°
Forward Voltage (V)	Typical	2.1	2.1	2
I _F =20mA	Max.	2.8	2.8	2.8

Θ_{1/2} is the off axis angle at which the luminous intensity is half the axial luminous intensity

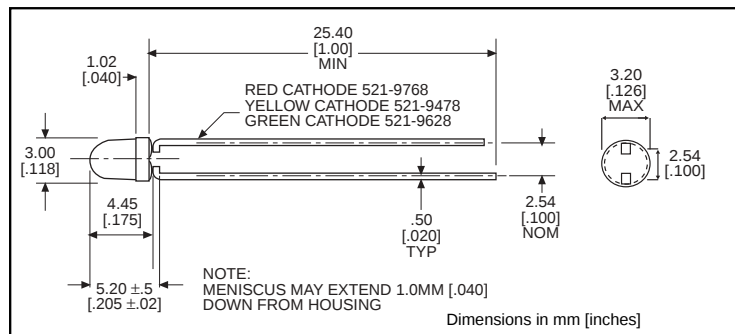
3mm Discrete LED

Bi-Color

Non-Tinted, Diffused

Dialight

521-9478, -9628, -9768



PART NO.	COLOR
521-9478	Yellow/Green
521-9628	Red/Green
521-9768	Red/Yellow

MOUNTING CLIP: 515-0006
located on page 4-65

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

	Yellow/Green -9478	Red/Green -9628	Red/Yellow -9768
Power Dissipation (mW)	60/100	140/100	100/60
Forward Current (mA)	20/30	40/30	30/20
Derating (mA/°C) From 25°C ¹ From 50°C	.25 ¹ /.40 ¹	.5/.4	.4 ¹ /.25 ¹
Peak Current (mA) Pulse width = 10μs	80/120	200/120	120/80
Operating Temperature (°C)	-55/+100	-55/+100	-55/+100
Storage Temperature (°C)	-55/+100	-55/+100	-55/+100
Soldering Temperature	260°C, 5 seconds, 1.66 mm from case		

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

OPERATING CHARACTERISTICS (T_A=25°C)

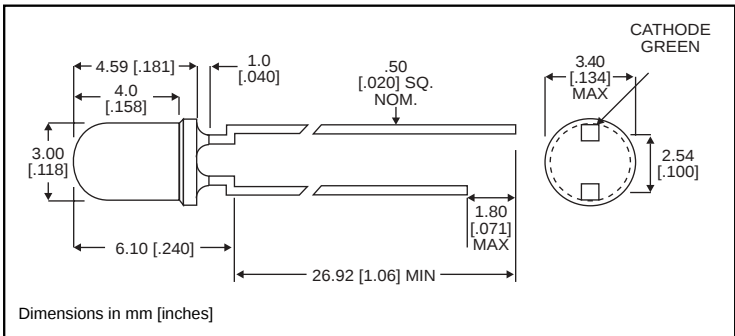
		Yellow/Green -9478	Red/Green -9628	Red/Yellow -9768
Luminous Intensity (mcd)	Min.	2.5/2.5	3.7*/1.1*	1.7*/1.7*
	Typical	4.3/6.3	12.6*/3.7*	5.6*/5.6*
Peak Wavelength (nm)	Typical	585/565	660/565	630/585
λ Peak				
Viewing Angle (2Θ ^{1/2})	Typical	80°	200°	80°
Forward Voltage (V)	Typical	2.1/2.1	1.8/2.1	2/2.1
	Max.	2.8/2.8	2.4/2.8	2.8/2.8
Reverse Voltage (V) I _R =100ua	Min.	5	5	5

Θ ¹ is the off axis angle at which the luminous intensity is half the axial luminous intensity

3mm Discrete LED
Bi-Color
Non-Tinted, Diffused

Dialight

521-9459



PART NO.

521-9459

COLOR

Red/Green

MOUNTING CLIP: 515-0006
located on page 4-65

4

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

Red/Green
-9459

Power Dissipation (mW)	140
Forward Current (mA)	45
Derating (mA/°C) From 25°C	.6
Peak Current (mA) Pulse width = 10μs	1000
Operating Temperature (°C)	-55/+100
Storage Temperature (°C)	-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
-9459

Luminous Intensity (mcd) $I_F=10\text{mA}$	Min. Typical	2.5/3.7 4.7/10
Peak Wavelength (nm) λ_{Peak}	Typical	635/565
Viewing Angle ($2\theta_{1/2}$)	Typical	50°
Forward Voltage (V) $I_F=10\text{mA}$	Typical Max.	2/2.1 2.8/2.8

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

3mm Discrete LED High Efficiency Diffused

Dialight

521-94xx



TYPE
521-9408
521-9427
521-9428

COLOR
Green
Red
Yellow

MOUNTING CLIP: 515-0006
located on page 4-65

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

	Green -9408	Red -9427	Yellow -9428
Power Dissipation (mW)	75	60	60
Forward Current (mA)	25	20	20
Derating (mA/ $^\circ\text{C}$) From 50°C	.5	.5	.5
Peak Current (mA)	60	60	60
Operating Temperature ($^\circ\text{C}$)	-25/+85	-25/+85	-25/+85
Storage Temperature ($^\circ\text{C}$)	-30/+100	-30/+100	-30/+100
Soldering Temperature	260 $^\circ\text{C}$, 5 seconds, 1.6 mm from case		

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

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

		Green -9408	Red -9427	Yellow -9428
Luminous Intensity (mcd)	Min.	5.6	3.6	2.2
	Typical	16	10	6.3
Peak Wavelength (nm)	Typical	563	650	585
λ Peak				
Viewing Angle ($2\theta^{1/2}$)	Typical	45 $^\circ$	45 $^\circ$	45 $^\circ$
Forward Voltage (V)	Typical	2.1	2	2.1
	Max.	3	3	3
Reverse Voltage (V), $I_R=10\mu\text{A}$	Min.	3	3	3

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