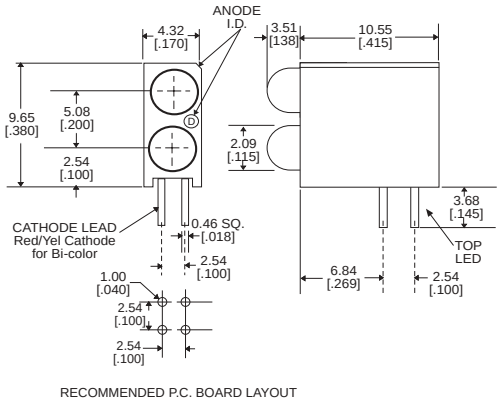
3mm
LED CBI® Circuit Board Indicator (DIN 41494 Compatible), Narrow Bi-level

Dialight

553-xxxx-200



Dimensions in mm [inches]

Standard Polarity shown in drawing: Cathode left

Features

- Designed to accommodate DIN 41494
- Multiple CBIs form horizontal LED arrays on 5.08mm (0.200") center-lines. See page 4-41 and 4-42 for pre-assembled arrays
- High Contrast, UL 94 V-0 rated, black housing
- Oxygen index: 32%
- Polymer content: PBT, 0.443 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

Tolerance note: As noted, otherwise:

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

Custom Combinations

• Contact factory for information on custom bi-level arrays and color combinations.

PART NO.	COLOR*
HIGH EFFICIENCY - LED TYPE 01	
553-0111-200	Red
553-0122-200	Green
553-0133-200	Yellow
553-0177-200	Orange
553-0188-200	Blue[3] NEW
LOW CURRENT - LED TYPE 02	
553-0211-200	Red
553-0222-200	Green
553-0233-200	Yellow
RESISTOR 5 VOLTS - LED TYPE 03	
553-0311-200	Red
553-0322-200	Green
553-0333-200	Yellow
BI-COLOR - LED TYPE 07	
553-0711-200	Red/Green
553-0744-200	Yellow/Green
NON-DIFFUSED - LED TYPE 22	
553-2211-200	Red
553-2222-200	Green
553-2233-200	Yellow

* Top-Bottom LED

REVERSE POLARITY OPTION AVAILABLE
See Part Number Ordering Code below.

PART NUMBER ORDERING CODE

Series — LED Type — Color — Polarity Option (0 - Standard Cathode Left; 1 - Reverse Cathode Right)

5 5 3 - x x x x - 2 x 0

Top Position — Bottom Position — Housing Type

Color = 0) Blank 1) Red or Red/Green Bi-Color 2) Green 3) Yellow 4) Yellow/Green Bi-Color 7) Orange 8) Blue

3

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

Typical Operating Characteristics (T_A=25°C)

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

HIGH EFFICIENCY

Part Number	Color	Peak Wavelength nm	I_V mcd	V_F Volts	Test Current (mA)	Viewing Angle $2\Theta_{½}$	LED Data sheet	Page #
553-0111-200	Red	635	10	2*	10	60°	521-9216	4-58
553-0122-200	Green	565	12.6	2.1*	10	60°	521-9210	4-58
553-0133-200	Yellow	585	10	2.1*	10	60°	521-9211	4-58
553-0177-200	Orange	600	7	2.2	10	60°	521-9498	4-58
553-0188-200	Blue	428	12	3.5	10	70°	521-9831	4-57

** I_F = 20mA*

LOW CURRENT

Part Number	Color	Peak Wavelength nm	I_V mcd	V_F Volts	Test Current (mA)	Viewing Angle $2\Theta_{½}$	LED Data sheet	Page #
553-0211-200	Red	635	1.6	1.7	2	60°	521-9324	4-60
553-0222-200	Green	565	1.6	1.9	2	60°	521-9326	4-60
553-0233-200	Yellow	585	1.6	1.8	2	60°	521-9325	4-60

INTEGRAL RESISTOR, 5 VOLTS

Part Number	Color	Peak Wavelength nm	I_V mcd	Test Voltage	Forward Current (mA)	Viewing Angle $2\Theta_{½}$	LED Data sheet	Page #
553-0311-200	Red	635	29	5	10	60°	521-9215	4-59
553-0322-200	Green	565	19	5	10	60°	521-9323	4-59
553-0333-200	Yellow	585	12.6	5	10	60°	521-9322	4-59

4

BI-COLOR

Part Number	Color	Peak Wavelength nm	I_V mcd	V_F Volts	Test Current (mA)	Viewing Angle $2\Theta_{½}$	LED Data sheet	Page #
553-0711-200	Red/Green	635/565	4.7/10	2/2.1	10	50°	521-9459	4-63
553-0744-200	Yellow/Green	585/565	4.3/6.3	2.1*/2.1*	10	80°	521-9478	4-62

** I_F = 20mA*

NON-DIFFUSED

Part Number	Color	Peak Wavelength nm	I_V mcd	V_F Volts*	Test Current (mA)	Viewing Angle $2\Theta_{½}$	LED Data sheet	Page #
553-2211-200	Red	635	29	2	10	45°	521-9432	4-61
553-2222-200	Green	565	50	2.1	10	45°	521-9430	4-61
553-2233-200	Yellow	585	20	2.1	10	45°	521-9431	4-61

** I_F = 20mA*

CBI ARRAYS .200 PITCH

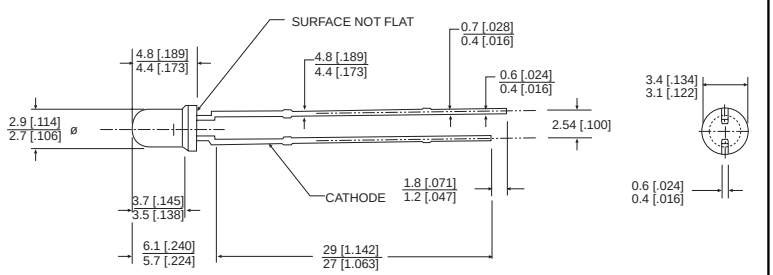
Dialight offers its Multiarray to reduce insertions and to assure indicator alignment. Multiarrays mount indicators on .200 centers. These assemblies are available in arrays of 2 to 6. See pages 4-41 and 4-42 for information. Call factory for information on .185 pitched arrays.

3mm Discrete LED
Tinted, Diffused

NEW

Dialight

521-9831



Dimensions in mm [inches]

PART NO.	COLOR
521-9831	Blue[3]

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

3

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE
DEVICES

4

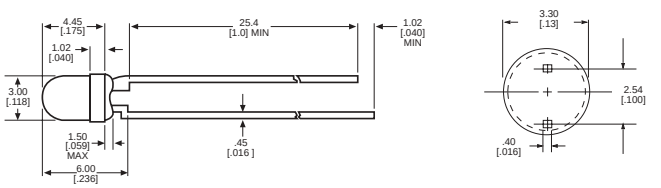
ABSOLUTE MAXIMUM RATINGS (T_A=25°C)	Blue **-9831**
Power Dissipation (mW)	100
Forward Current (mA) Derating (mA/°C) *From 55°C*	20 .44
Operating Temperature (°C)	-40/+100
Storage Temperature (°C)	-40/+100
Soldering Temperature	260°C, 5 seconds, 1.6 mm from case

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

OPERATING CHARACTERISTICS (T_A=25°C)		Blue **-9831**
Luminous Intensity (mcd) I_F=10mA	Min. Typical	6.3 12
Peak Wavelength (nm) λ Peak	Typical	428
Viewing Angle (2Θ½)	Typical	70°
Forward Voltage (V) I_F=10mA	Typical Max.	3.5 4.2
Reverse Voltage (V) IR=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 521-9210, -9211, -9216, -9498, -9636



short lead cathode all colors except 521-9636 Red.
For 521-9636 Red, short lead is anode.

Dimensions in mm [inches]

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

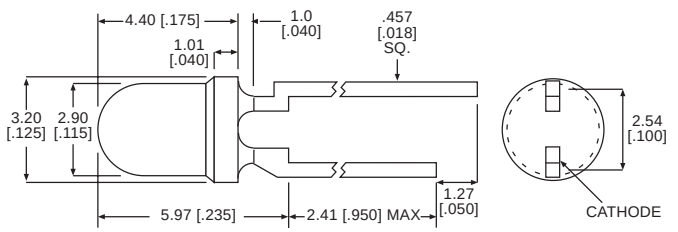
OPERATING CHARACTERISTICS (T_A=25°C)		Green -9210	Yellow -9211	Red -9216	Orange -9498	Red -9636
Luminous Intensity (mcd)	Min.	4.7	7.4	7.4	3.4	8.7[1]
I_F=10mA [1] I_F=20mA	Typical	12.6	10	10	7	48[1]
Peak Wavelength (nm) λ Peak	Typical	565	585	635	600	660
Viewing Angle (2Θ ½)	Typical	60°	60°	60°	60°	60°
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

Θ ½ 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



Dimensions in mm [inches]

PART NO.	COLOR
521-9215	Red
521-9322	Yellow
521-9323	Green

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

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)	Red -9215	Yellow -9322	Green -9323
Forward Voltage (V)	7.5	7.5	7.5
Derating (V/°C) *From 50°C*	.086	.086	.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

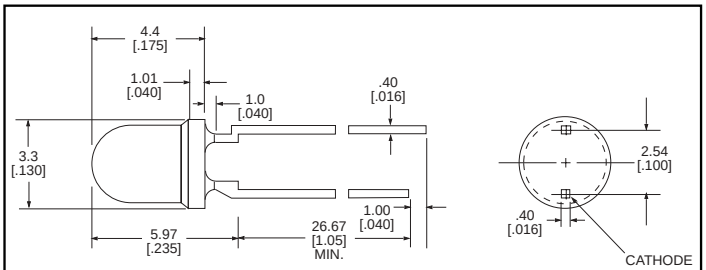
OPERATING CHARACTERISTICS (T_A=25°C)		Red -9215	Yellow -9322	Green -9323
Luminous Intensity (mcd)	Min.	8.7	3.7	5.6
V_F=5V	Typical	29	12.6	19
Peak Wavelength (nm)	Typical	635	585	565
λ Peak				
Viewing Angle (2Θ½)	Typical	60°	60°	60°
Forward Current (mA)	Typical	10	10	10
V_F=5V	Max.	20	20	20
Reverse Voltage (V), I_R=100µA	Min.	5	5	5

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

4

3mm Discrete LED
Low Current
Diffused

521-9324, -9325, -9326



Dimensions in mm [inches]

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°C)	Red -9324	Yellow -9325	Green -9326
Power Dissipation (mW)	20	20	20
Forward Current (mA)	7	7	7
Derating (mA/°C) *From 90°C*	.7	.7	.7
Peak Current (mA) *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

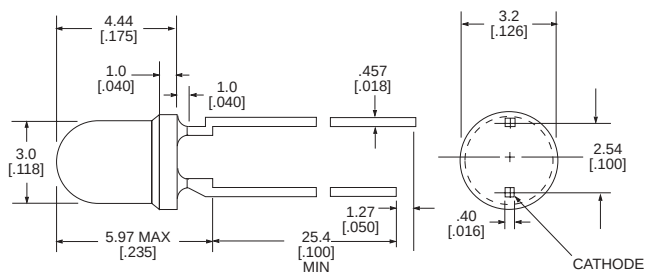
OPERATING CHARACTERISTICS (T_A=25°C)		Red -9324	Yellow -9325	Green -9326
Luminous Intensity (mcd)	Min.	1	1	1
I_F=2mA	Typical	1.6	1.6	1.6
Peak Wavelength (nm) λ Peak	Typical	635	585	565
Viewing Angle ($2\Theta^{1/2}$)	Typical	60°	60°	60°
Forward Voltage (V)	Typical	1.7	1.8	1.9
I_F=2mA	Max.	2.2	2.7	2.2
Reverse Voltage (V), I_R=50µA	Min.	5	5	5

$\Theta^{1/2}$ 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



Dimensions in mm [inches]

PART NO.	COLOR
521-9430	Green
521-9431	Yellow
521-9432	Red

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

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

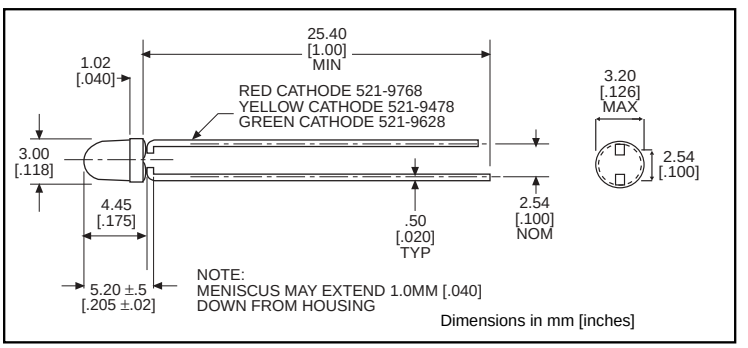
OPERATING CHARACTERISTICS (T_A=25°C)		Green -9430	Yellow -9431	Red -9432
Luminous Intensity (mcd)	Min.	32	10	8.7
I_F=10mA	Typical	50	20	29
Peak Wavelength (nm) λ Peak	Typical	565	585	635
Viewing Angle (2Θ½)	Typical	45°	45°	45°
Forward Voltage (V)	Typical	2.1	2.1	2
I_F=20mA	Max.	2.8	2.8	2.8

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

4

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

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) Derating (mA/°C) *From 25°C* [1] *From 50°C*	20/30 .25[1]/.40[1]	40/30 .5/.4	30/20 .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) I_F=10mA * I_F=20mA	Min. Typical	2.5/2.5 4.3/6.3	3.7*/1.1* 12.6*/3.7*	1.7*/1.7* 5.6*/5.6*
Peak Wavelength (nm) λ Peak	Typical	585/565	660/565	630/585
Viewing Angle ($2\Theta_{½}$)	Typical	80°	200°	80°
Forward Voltage (V) I_F=20mA	Typical Max.	2.1/2.1 2.8/2.8	1.8/2.1 2.4/2.8	2/2.1 2.8/2.8
Reverse Voltage (V) I_R=100ua	Min.	5	5	5

$\Theta_{½}$ is the off axis angle at which the luminous intensity is half the axial luminous intensity

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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