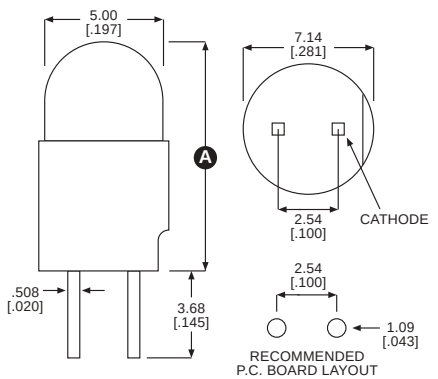
5mm
LED CBI® Circuit Board Indicator
Vertical, Various Heights

Dialight

561-xx0x-xxx



Dimensions in mm [inches]

Features

- Multiple CBIs form horizontal LED arrays on 7.24mm (0.285") center-lines.
- 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
- High Contrast, UL 94 V-0 rated, black housing
- Oxygen index: 29%(all sizes)

Custom Devices

- Contact factory for other LED types or alternate heights

Tolerance note: As noted, otherwise:

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

PART NO.	COLOR
INTEGRAL RESISTOR, 5 VOLTS	
561-0104-xxx	Red
LOW CURRENT	
561-1101-xxx	Red
561-1201-xxx	Yellow
561-1301-xxx	Green
HIGH EFFICIENCY	
561-0901-xxx	Orange
561-2101-xxx	Red
561-2201-xxx	Green
561-2301-xxx	Yellow
HIGH EFFICIENCY, TINTED, NON DIFFUSED	
561-2401-xxx	Red
561-2501-xxx	Green
561-2601-xxx	Yellow
SUPER BRIGHT, DIFFUSED	
561-5101-xxx	Red
561-5201-xxx	Green
561-5301-xxx	Yellow
SUPER BRIGHT, WATER CLEAR (Non-Tinted, Non-Diffused)	
561-5501-xxx	Red
561-5601-xxx	Green
561-5701-xxx	Yellow
BI-COLOR	
561-3001-xxx	Red/Green
561-3101-xxx	Yellow/Green

NEW
NEW

6

PART NUMBER ORDERING CODE

Series — LED Type — Housing Height — DIM. A [+.010-.031]

5 6 1 - x x 0 x - x x x

050 = 12.7 [.500]
060 = 15.2 [.600]
070 = 17.8 [.700]
080 = 20.3 [.800]
090 = 22.9 [.900]
100 = 25.4 [1.00]

Typical Operating Characteristics (T_A=25°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 $2\Theta_{½}$	LED Data sheet	Page #
561-0104-xxx	Red	635	8	5	10	60°	521-9183	6-41

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 #
561-1101-xxx	Red	635	2	1.8	2	50°	521-9320	6-42
561-1201-xxx	Yellow	583	1.8	1.9	2	50°	521-9321	6-42
561-1301-xxx	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 $2\Theta_{½}$	LED Data sheet	Page #
561-0901-xxx	Orange	600	7	1.9	10	60°	521-9704	6-43
561-2101-xxx	Red	635	7	2.2	10	60°	521-9246	6-43
561-2201-xxx	Green	565	32	2*	10	50°	5HD-9270-2	6-49
561-2301-xxx	Yellow	590	10	2.4*	10	70°	5HD-9271-2	6-49

** I_F = 20mA*

HIGH EFFICIENCY, TINTED, 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 #
561-2401-xxx	Red	635	60	2.2	10	35°	521-9247	6-44
561-2501-xxx	Green	565	70	2.3	10	24°	521-9251	6-44
561-2601-xxx	Yellow	583	50	2.2	10	35°	521-9249	6-44

SUPER BRIGHT, 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 #
561-5101-xxx	Red	650	34	2.1	20	50°	5SD-9441	6-53
561-5201-xxx	Green	563	34	2.2	20	50°	5SD-9456	6-53
561-5301-xxx	Yellow	585	34	2.2	20	50°	5SD-9455	6-53

SUPER BRIGHT, WATER CLEAR (NON-TINTED, 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 #
561-5501-xxx	Red	635	125	2.2	20	24°	521-9464	6-47
561-5601-xxx	Green	565	120	2.3	20	24°	521-9465	6-47
561-5701-xxx	Yellow	583	140	2.2	20	24°	521-9466	6-47

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 #
561-3001-xxx	Red/Green	660/565	90/40	1.8/2.1	20	60°	521-9651	6-46
561-3101-xxx	Yellow/Green	585/565	8.7/8.7	2.1/2.1	20	50°	521-9724	6-46

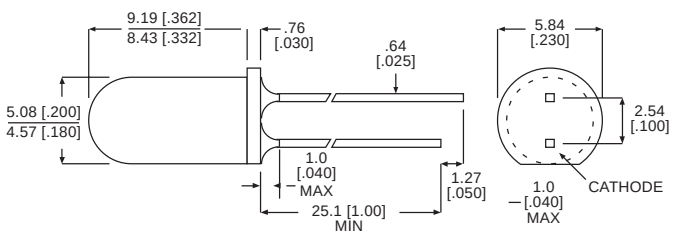
Dialight

 Dialight Corporation • 1501 Route 34 South • Farmingdale, NJ 07727 • TEL: (732) 919-3119 • FAX: (732) 751-5778 •www.dialight.com

5mm Discrete LED Integral Resistor, 5 Volts Diffused

Dialight

521-9183, -9284



Dimensions in mm [inches]

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

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

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)	Red **-9183**	Yellow **-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_A=25°C)		Red **-9183**	Yellow **-9284**
Luminous Intensity (mcd)	Min.	2	2
V_F = 5V	Typical	8	8
Peak Wavelength (nm)	Typical	635	583
λ Peak			
Viewing Angle ($2\Theta^{1/2}$)	Typical	60°	60°
Forward Current (I)	Typical	10	10
V_F = 5V	Max	15	15
Reverse Voltage (V), I_R=100µA	Min.	5	5

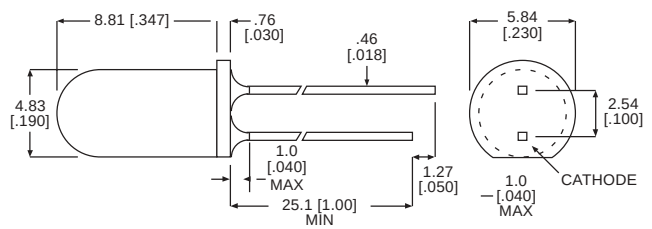
Θ^{1} *is the off axis angle at which the luminous intensity is half the axial luminous intensity*

6

5mm Discrete LED
Low Current, 2mA
Diffused

Dialight

521-9320, -9321, -9327



Dimensions in mm [inches]

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 -9320	Yellow -9321	Green -9327
Power Dssipation (mW)	27	36	24
Derating (mA/°C) *From 92°C*	1	1	1
Forward Current (mA)	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 (TA=25°C)		Red -9320	Yellow -9321	Green -9327
Luminous Intensity (mcd)	Min.	1.2	1.2	1.2
I_F=2mA	Typical	2	1.8	1.8
Peak Wavelength (nm) λ Peak	Typical	635	583	565
Viewing Angle (2Θ ½)	Typical	50°	50°	50°
Forward Voltage (V)	Typical	1.8	1.9	1.8
I_F=2mA	Max.	2.2	2.7	2.2
Reverse Voltage (V), I_R=50µA	Min.	5	5	5

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

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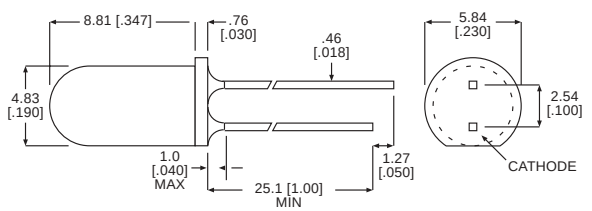
5mm Discrete LED High Efficiency Diffused

Dialight

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



Dimensions in mm [inches]

PART NO.	COLOR
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°C)	Red -9246	Yellow -9248	Green -9250	Orange -9704
Power Dissipation (mW)	135	85	135	135
Derating (mW/°C) *From 25°C 1. (mA/°C) From 50°C*	1.8	1.6	1.8	.5[1]
Forward Current (mA)	25	20	25	30
Peak Current (mA) *Pulse width = 10µs*	500	500	500	500
Operating Temperature (°C)	-55/+100	-55/+100	-20/+100	-55/+100
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_A=25°C)		Red -9246	Yellow -9248	Green -9250	Orange -9704
Luminous Intensity (mcd) I_F=10mA	Min.	4	4	4.2	4
	Typical	7	8	5.2	7
Peak Wavelength (nm) λ Peak	Typical	635	583	565	600
Viewing Angle ($2\Theta^{1/2}$)	Typical	60°	60°	60°	60°
Forward Voltage (V) I_F=10mA	Typical	2.2	2.2	2.3	1.9
	Max.	3	3	3	2.4
Reverse Voltage (V), I_R=100µA	Min.	5	5	5	5

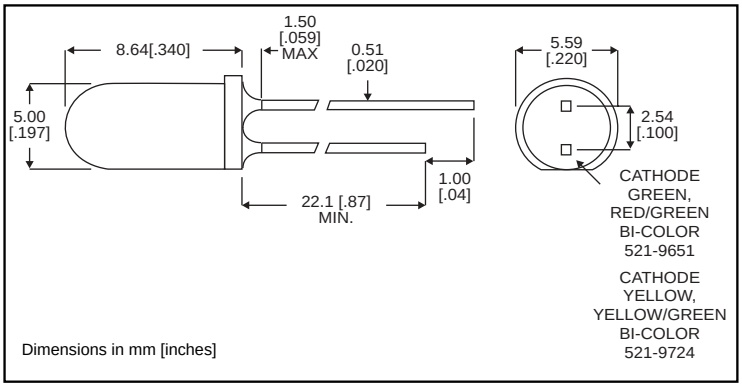
Θ^{1} is the off axis angle at which the luminous intensity is half the axial luminous intensity

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°C)	Red/Green **-9651**	Yellow/Green **-9724**
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 µs*	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°C)		Red/Green **-9651**	Yellow/Green **-9724**
Luminous Intensity (mcd) I_F=20mA	Min. Typical	29/12.6 90/40	2.5/2.5 8.7/8.7
Peak Wavelength (nm) λ Peak	Typical	660/565	585/565
Viewing Angle (2Θ ½)	Typical	60°	50°
Forward Voltage (V)	Typical	1.8/2.1	2.1/2.1
I_F=20mA	Max.	2.4/2.8	2.8/2.8

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

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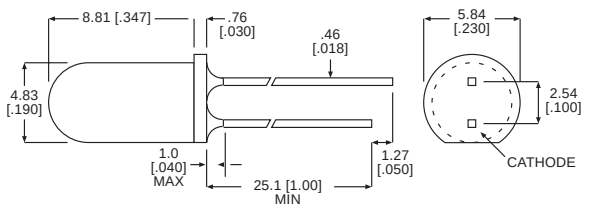
5mm Discrete LED
High Brightness
Non-Diffused

521-9247, -9249, -9251



Dimensions in mm [inches]

PART NO.	COLOR
521-9247	Red
521-9249	Yellow
521-9251	Green

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

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)	Red -9247	Yellow -9249	Green -9251
Power Dissipation (mW)	135	85	135
Derating (mW/°C) *From 25°C 1. From 50°C*	1.8	1.6[1]	1.8
Forward Current (mA)	30	20	30
Peak Current (mA) *Pulse width = 10µs*	500	500	500
Operating Temperature (°C)	-55/+100	-55/+100	-20/+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 -9247	Yellow -9249	Green -9251
Luminous Intensity (mcd) I_F=10mA	Min.	25	25	25
	Typical	60	50	70
Peak Wavelength (nm) λ Peak	Typical	635	583	565
Viewing Angle ($2\Theta^{1/2}$)	Typical	35°	35°	24°
Forward Voltage (V) I_F=10mA	Typical	2.2	2.2	2.3
	Max.	3	3	3
Reverse Voltage (V), I_R=100µA	Min.	5	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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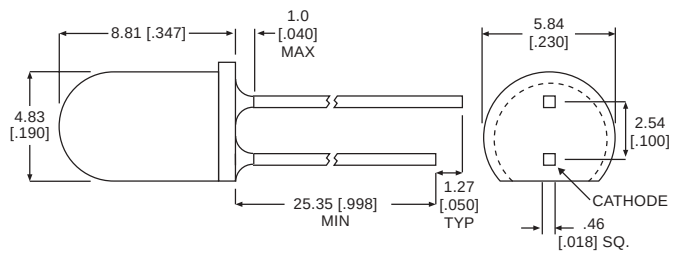
5mm Discrete LED
Super Bright, Water Clear
Non-Tinted, Non-Diffused

Dialight

521-9464,-9465,-9466



Dimensions in mm [inches]

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°C)	Red -9464	Green -9465	Yellow -9466
Power Dissipation (mW)	135	135	85
Derating (mW/°C) *From 25°C 1. From 50 °C*	1.8	1.8	1.6[1]
Forward Current (mA)	30	30	20
Peak Current (mA) *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°C)		Red -9464	Green -9465	Yellow -9466
Luminous Intensity (mcd) I_F=20mA	Min.	80	80	80
	Typical	125	120	140
Peak Wavelength (nm) λ Peak	Typical	635	565	583
Viewing Angle (2Θ ½)	Typical	24°	24°	24°
Forward Voltage (V) I_F=20mA	Typical	2.2	2.3	2.2
	Max.	3	3	3
Reverse Voltage (V), I_R=100µA	Min.	5	5	5

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

6

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_A=25°C)	Red -9269	Green -9270-2	Green -9270-5	Yellow -9271-2	Yellow -9271-5
Power Dissipation (mW)	60	140	75	200	60
Derating (mW/°C) *From 50°C 1. From 40°C*	.66[1]		.66[1]		.66[1]
Forward Current (mA)	20	40	25	60	20
Derating (mA/°C) *From 25°C*		.6		.8	
Peak Current (mA) *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

6

OPERATING CHARACTERISTICS

(T_A=25°C)		Red -9269	Green -9270-2	Green -9270-5	Yellow -9271-2	Yellow -9271-5
Luminous Intensity (mcd) I_F=10mA	Min.	2.2	4	3.6	4	2.2
	Typical	7	32	10	10	6.3
Peak Wavelength (nm) λ Peak	Typical	650	565	563	590	585
Viewing Angle (2Θ ½)	Typical	50°	50°	65°	70°	50°
Forward Voltage (V) I_F=10mA, *I_F=20mA	Typical	2.2	2*	2.1	2.4*	2.1
	Max.	2.5	2.6*	3	3*	3
Reverse Voltage (V), I_R=100µA *I_R=10µA	Min.	5	5*	3*	5*	3

Θ ½ 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°C)	Red -9672	Yellow -9673	Green -9674
Power Dissipation (mW)	80	60	100
Forward Current (mA)	40	20	30
Derating (mA/°C) *From 25°C*	.5	.25	.4
Peak Current (mA) *Pulse width = 10 µs*	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°C)		Red -9672	Yellow -9673	Green -9674
Luminous Intensity (mcd)	Min.	3.5	3.5	3.5
I_F=20mA	Typical	12.3	12.3	12.3
Peak Wavelength (nm) λ Peak	Typical	635	585	565
Viewing Angle ($2\Theta_{½}$)	Typical	60°	60°	60°
Forward Voltage (V)	Typical	2	2.1	2.1
I_F=20mA	Max.	2.8	2.8	2.8
Reverse Voltage (V), I_R=100µA	Min.	5	5	5

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

6

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_A=25°C)	Green 12V **-9378**	Yellow 12V **-9379**	Red 5V **-9422**	Green 5V **-9423**
Forward Voltage (V) *(T_A=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_A=25°C)		Green 12V **-9378**	Yellow 12V **-9379**	Red 5V **-9422**	Green 5V **-9423**
Luminous Intensity (mcd) V_F=5V, *V_F=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 ½)	Typical	60°	60°	60°	60°
Forward Current (mA), V_F=5V	Typical	13*	13*	13	12
*V_F=12V	Max.	20*	20*	20	15
Reverse Voltage (V), I_R=100µA	Typical	5	5	5	5

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

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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

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)	Red -9441	Yellow -9455	Green -9456
Power Dissipation (mW)	75	75	75
Forward Current (mA)	25	25	25
Derating (mA/°C) *From 50°C* *(mW/°C) *From 40°C*	.66*	.5	.5
Peak Current (mA) *Pulse width = 1 ms*	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

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

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

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