



L111 SERIES

- STANDARD & HIGH BRIGHTNESS LEDS
- T-1 3/4(5MM) SIZE DIFFUSED LENS
- SINGLE OR BI-COLOR LEDS 2 VOLT LEDS AT 20mA

Overview

The L111 Series LEDs are for standard and high brightness LED applications. Units are round shaped, T-1 3/4(5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

Accessory items: Mounting lenses: <u>L810</u> and <u>L811.</u> **Mounting clip: <u>L820B</u>** mounts the LED to circuit board applications. Product specifications on pg. C-14.

Anode(+) 1.063"(27) .00"(25.4) .339"(8.61) (8.61)1.063" 0.232" DIA. .339" (27.0)(5.89)0.197" DIA. (5.0)0.06" 0.100"(2.54) TYP.(1.52) SQ. (.5) Inches (mm)

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.

Can't find it here? We have many more standard and custom solutions.

For information phone Customer Service at 954-425-0123 or complete the "Fast FAX" form on Appendix, page A-1.

Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L111CR	Red	Clear	100	20	2	2.5	5V	625	30°
L111CG	Green	Clear	80	20	2.2	2.5	5V	565	30°
L111CY	Yellow	Clear	80	20	2.1	2.5	5V	590	30°
L111DR	Red	Diffused	10	20	2	2.5	5V	660	60°
L111DG	Green	Diffused	20	20	2.2	2.5	5V	565	60°
L111DY	Yellow	Diffused	20	20	2.1	2.5	5V	590	60°
L111DRG	Red/Green	Diffused	45 / 50	20	2.0 / 2.2	2.6	5V	635 / 568	45°
L111DGR	Green/Red	Diffused	50 / 45	20	2.2 / 2.0	2.6	5V	568 / 635	45°
L111DGY	Green/Yellow	Diffused	50 / 35	20	2.2 / 2.1	2.6	5V	568 / 585	45°
L111DYG	Yellow/Green	Diffused	35 / 50	20	2.1 / 2.2	2.6	5V	585 / 568	45°
L111DRY	Red/Yellow	Diffused	45 / 35	20	2.0 / 2.1	2.6	5V	635 / 585	45°
L111DYR	Yellow/Red	Diffused	35 / 45	20	2.1 / 2.0	2.6	5V	585 / 635	45°





L111-BP SERIES

- BI-POLAR LEDS
- T-1 3/4(5MM) SIZE
- DIFFUSED LENS
- 2 VOLT LEDS AT 20mA

Overview

The L111-BP Series LEDs are for applications that require a bi-polar LED. Units are round shaped, T-1 3/4(5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

Accessory items: Mounting lenses: <u>L810</u> and <u>L811</u>. **Mounting clip:** <u>L820B</u> mounts the LED to circuit board applications. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.

1.063"(2	27) Anode(+) 1.00"(25.4)
0.232" DIA. (5.89) 0.100"(2.54) 0.020" SQ. (.5)	1.063" (8.61) (27.0) .339" 0.197" DIA. (5.0) (5.0) Inches (mm)

Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L111DR-BP	Red	Diffused	45	20	2	2.6	5V	635	45°
L111DG-BP	Green	Diffused	50	20	2.2	2.6	5V	568	45°
L111DY-BP	Yellow	Diffused	35	20	2.1	2.6	5V	585	45°

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L111-FL SERIES

- FLASHING LEDS
- T-1 3/4(5MM) SIZE DIFFUSED LENS
- OPERATING VOLTAGE 2 VOLTS TO 15 VOLTS
- TYPICAL PEAK CURRENT OF 15mA

Overview

The L111-FL Series LEDs are for blinking or flashing LED applications. Units are round shaped, T-1 3/4 (5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

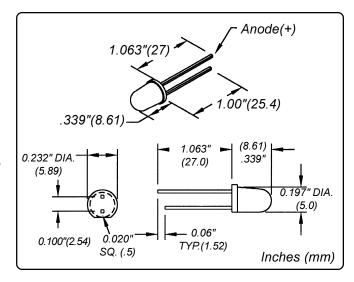
Accessory items: Mounting lenses: <u>L810</u> and <u>L811.</u> **Mounting clip:** <u>L820B</u> mounts the LED to circuit board applications. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



Part Number	Color	Lens Type	Typical Intensity mcd	Peak Current Typical mA	Peak Current Max. mA	Pulse Rate (Hz) VDD=5V Typical	Pulse Rate (Hz) VDD=5V Max.	Typical Wavelength nm	Viewing Angle
L111DR-FL	Red	Diffused	15	15	40	2.4	3	635	55°
L111DG-FL	Green	Diffused	12	15	40	2.4	3	568	55°
L111DY-FL	Yellow	Diffused	10	15	40	2.4	3	585	55°

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L111-LC SERIES

- LOW CURRENT LEDS
- T-1 3/4(5MM) SIZE DIFFUSED LENS
- LESS THAN 2 VOLT AT 2mA

Overview

The L111 Series LEDs are for low current applications. Units are round shaped, T-1 3/4(5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

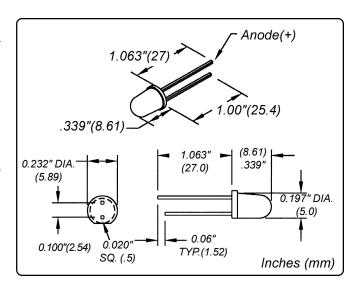
Accessory items: Mounting lenses: <u>L810</u> and <u>L811</u>. Mounting clip: <u>L820B</u> mounts the LED to circuit board applications. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L111DR-LC	Red	Diffused	4.5	2	1.7	2.2	5V	625	60°
L111DG-LC	Green	Diffused	3	2	1.9	2.3	5V	565	60°
L111DY-LC	Yellow	Diffused	3	2	1.8	2.2	5V	590	60°

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L111-5V SERIES & L111-12V SERIES

- 5 OR 12 VOLT LEDS
- T-1 3/4(5MM) SIZE DIFFUSED LENS
- 10mA MINIMUM FORWARD CURRENT

<u>Overview</u>

The L111-5V & L111-12V Series LEDs are for 5 volt or 12 volt applications. Units are round shaped, T-1 3/4(5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

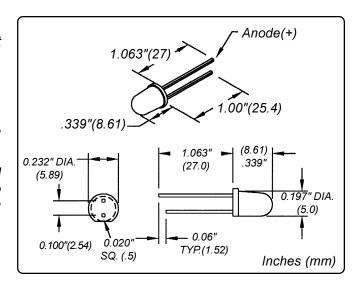
Accessory items: Mounting lenses: <u>L810</u> and <u>L811.</u> **Mounting clip:** <u>L820B</u> mounts the LED to circuit board applications. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



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Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength (nm)	Viewing Angle
L111DG-5V	Green	Diffused	30	12	5	7.5	5V	565	60°
L111DR-5V	Red	Diffused	40	12	5	7.5	5V	625	60°
L111DY-5V	Yellow	Diffused	30	12	5	7.5	5V	590	60°
L111DG-12V	Green	DIffused	30	11	12	15	5V	565	60°
L111DR-12V	Red	Diffused	40	11	12	15	5V	625	60°
L111DY-12V	Yellow	Diffused	30	12	12	15	5V	590	60°





L131 SERIES

- HIGH BRIGHTNESS LEDS
- T-1 3/4(5MM) SIZE DIFFUSED LENS
- 2 VOLT LEDS AT 20mA

Overview

The L131 Series LEDs are for high brightness LED applications. Units are round shaped, T-1 3/4(5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

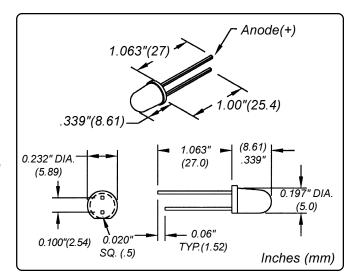
Accessory items: Mounting lenses: <u>L810</u> and <u>L811.</u> **Mounting clip:** <u>L820B</u> mounts the LED to circuit board applications. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L131DR	Red	Diffused	100	20	2	2.5	5V	660	60°
L131DG	Green	Diffused	100	20	2.2	2.5	5V	565	60°
L131DY	Yellow	Diffused	100	20	2.1	2.5	5V	590	60°

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L291 SERIES

- LOW PROFILE LEDS
- T-1 3/4(5MM) SIZE DIFFUSED LENS
- 2 VOLT LEDS AT 20mA

Overview

The L291 Series LEDs are for low profile LED applications. Units are round shaped, T-1 3/4 (5mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

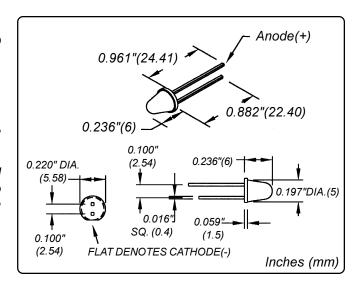
Accessory items: Mounting lenses: <u>L810</u> and <u>L811</u>. Mounting clip: <u>L820B</u> mounts the LED to circuit board applications. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



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Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L291CR	Red	Clear	50	20	2	2.5	5V	625	30°
L291CG	Green	Clear	50	20	2.1	2.5	5V	565	30°
L291CY	Yellow	Clear	50	20	2.1	2.5	5V	590	30°
L291DR	Red	Diffused	12	20	2	2.5	5V	625	60°
L291DG	Green	Diffused	12	20	2.1	2.5	5V	565	60°
L291DY	Yellow	Diffused	8	20	2.1	2.5	5V	590	60°





L311 SERIES

- STANDARD & HIGH BRIGHTNESS LEDS
- T-1 (3MM) SIZE DIFFUSED LENS
- SINGLE AND BI-COLOR LEDS
- 2 VOLT LEDS AT 20mA

Overview

The L311 Series LEDs are for standard and high brightness LED applications. Units are round shaped, T-1(3mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

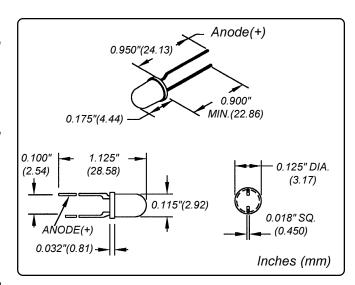
Accessory items: Mounting lenses: <u>L812</u>. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

<u>Lead Solder Temperature</u>

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



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Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L311CR	Red	Clear	100	20	2	2.5	5V	625	50°
L311CG	Green	Clear	80	20	2.2	2.5	5V	565	50°
L311CY	Yellow	Clear	80	20	2.1	2.5	5V	590	50°
L311DR	Red	Diffused	40	20	2	2.5	5V	660	60°
L311DG	Green	Diffused	30	20	2.2	2.5	5V	565	60°
L311DY	Yellow	Diffused	30	20	2.1	2.5	5V	590	60°
L311DRG	Red/Green	Diffused	25 / 30	20	2.0 / 2.2	2.6	5V	635 / 568	45°
L311DGR	Green/Red	Diffused	30 / 25	20	2.2 / 2.0	2.6	5V	568 / 635	45°
L311DGY	Green/Yellow	Diffused	30 / 20	20	2.2 / 2.1	2.6	5V	568 / 585	45°
L311DYG	Yellow/Green	Diffused	20 / 30	20	2.1 / 2.2	2.6	5V	585 / 568	45°
L311DRY	Red/Yellow	Diffused	25 / 20	20	2.0 / 2.1	2.6	5V	635 / 585	45°
L311DYR	Yellow/Red	Diffused	20 / 25	20	2.1 / 2.0	2.6	5V	585 / 635	45°





L311-BP SERIES

- BI-POLAR LEDS
- T-1(3MM) SIZE DIFFUSED LENS
- 2 VOLT LEDS AT 20mA

Overview

The L311 Series LEDs are for bi-polar LED applications. Units are round shaped, T-1(3mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

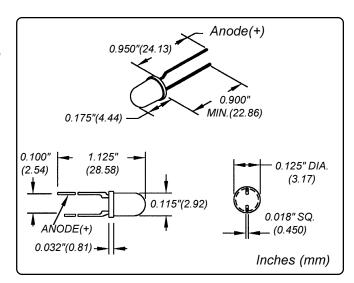
Accessory items: Mounting lenses: <u>L812</u>. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L311DR-BP	Red	Diffused	25	20	2	2.6	5V	635	45°
L311DG-BP	Green	Diffused	30	20	2.2	2.6	5V	568	45°
L311DY-BP	Yellow	Diffused	20	20	2.1	2.6	5V	585	45°

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L311-LC SERIES

- LOW CURRENT LEDS
- T-1 (3MM) SIZE DIFFUSED LENS
- LEDS AT LESS THAN 2 VOLTS AT 2mA

Overview

The L311-LC Series LEDs are for low current applications. Units are round shaped, T-1(3mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

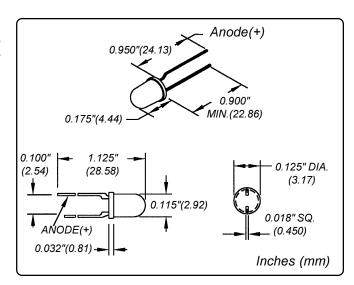
Accessory items: Mounting lenses: <u>L812</u>. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L311DR-LC	Red	Diffused	4	2	1.7	2.2	5V	635	40°
L311DG-LC	Green	Diffused	6	2	1.9	2.3	5V	568	40°
L311DY-LC	Yellow	Diffused	3	2	1.8	2.2	5V	585	40°

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L311-5V SERIES & L311-12V SERIES

- 5 OR 12 VOLT LEDS
- T-1 (3MM) SIZE DIFFUSED LENS
- 10mA MINIMUM FORWARD CURRENT

Overview

The L311-5V & L311-12V Series LEDs are for 5 volt or 12 volt applications. Units are round shaped, T-1 (3mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

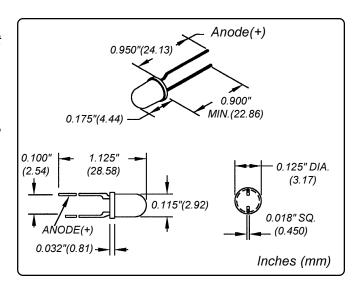
Accessory items: Mounting lenses: <u>L812</u>. Product specifications on pg. C-14.

Operating & Storage Temperature

Temp. Range: -40°C to +85°C.

Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.



Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength (nm)	Viewing Angle
L311DG-5V	Green	Diffused	30	12	5	7.5	5V	565	60°
L311DR-5V	Red	Diffused	40	12	5	7.5	5V	625	60°
L311DY-5V	Yellow	Diffused	30	12	5	7.5	5V	590	60°
L311DG-12V	Green	DIffused	30	11	12	15	5V	565	60°
L311DR-12V	Red	Diffused	40	11	12	15	5V	625	60°
L311DY-12V	Yellow	Diffused	30	12	12	15	5V	590	60°

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L411 SERIES

- STANDARD EFFICIENCY LEDS
- SUBMINIATURE SIZE WITH AXIAL LEADS
- T-3/4 (2MM) SIZE DIFFUSED LENS
- 2 VOLT LEDS AT 10mA

Overview

The L411 Series are standard efficiency, axial leaded LEDs. Units are subminiature T-3/4(2mm) and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

Operating & Storage Temperature

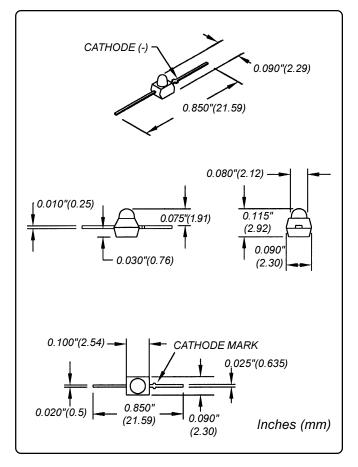
Temp. Range: -40°C to +85°C.

Lead Solder Temperature

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Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength nm	Viewing Angle
L411CR	Red	Clear	12	10	2	2.8	5V	635	34°
L411CG	Green	Clear	12	10	2.1	2.8	5V	565	34°
L411CY	Yellow	Clear	8	10	2.1	2.8	5V	585	34°
L411DR	Red	Diffused	5	10	2	2.8	5V	635	90°
L411DG	Green	Diffused	4	10	2.1	2.8	5V	565	90°
L411DY	Yellow	Diffused	5	10	2.1	2.8	5V	585	90°





L511 & L912 SERIES

- RECTANGULAR 2MM X 5MM LEDS
- WITHOUT FLANGE L511 SERIES
- WITH FLANGE L912 SERIES
- 2 VOLT LEDS AT 20mA

Overview

The L511 Series and L912 Series are rectangular 2mm x 5mm LEDs. Units are available with or without flange and operate on DC voltage.

Other LEDs are available including: ultra bright, circuit board indicators and LED indicator lights. Custom lead forming and cutting services are available.

Operating & Storage Temperature

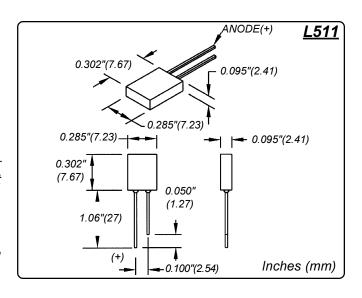
Temp. Range: -40°C to +85°C.

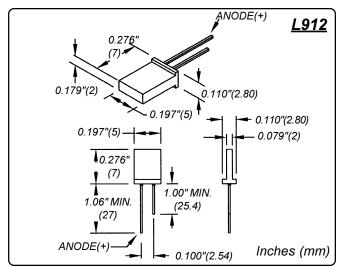
Lead Solder Temperature

Soldering temp. 260°C max. Solder time for 3 seconds for distance from solder case to joint > 2mm or 5 seconds with distance from solder case to joint > 4mm.

Can't find it here? We have many more standard and custom solutions.

For information phone Customer Service at 954-425-0123 or complete the "Fast FAX" form on Appendix, page A-1.





Part Number	Color	Lens Type	Typical Intensity mcd	Test Current mA	Forward Voltage Typical	Forward Voltage Max	Reverse Voltage Max	Typical Wavelength (nm)	Viewing Angle
L511-DG	Green	Diffused	8	20	2.2	2.5	5V	565	110°
L511-DR	Red	Diffused	12	20	2	2.5	5V	700	110°
L511-DY	Yellow	Diffused	8	20	2.1	2.5	5V	590	110°
L912-DG	Green	Diffused	8	20	2.2	2.5	5V	565	110°
L912-DR	Red	Diffused	12	20	2	2.5	5V	700	110°
L912-DY	Yellow	Diffused	8	20	2.1	2.5	5V	590	110°



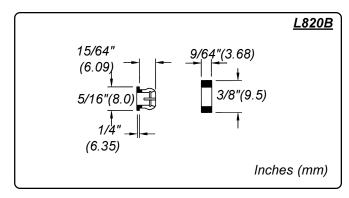


LED ACCESSORIES

- L820B MOUNTING CLIP FOR T-1-3/4 (5MM) LEDS
- L810 & L811 MOUNTING LENSES FOR T-1-3/4 (5MM) LEDS
- L812 MOUNTING LENS FOR T-1 (3MM) LEDS

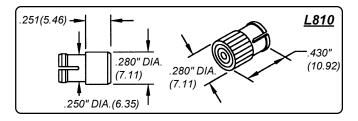
Overview - L820B Mounting Clip

Provides simple and effective mounting method for T-1-3/4 LEDs. Recommended mounting hole .250"/6.35mm with maximum panel thickness .127"/3.17mm. For use with L111, L131 and L291 Series LEDs.



Overview - L810, L811 & L812 Snap-in lenses:

Snap-in lenses for T-1-3/4 & T-1 LEDs. Lens mounting systems are cost effective and easily installed without the need for any tools. Designed with an integral fresnel pattern on the face and side fluting to disperse light. Use L111, L131 and L291 with <u>L810</u> & <u>L811</u> lenses and use L311 with <u>L812</u> lenses.



Part Numbers

Style	Red	Green	Yellow	Clear	
T-1-3/4 Round	L810R	L810G	L810Y	L810WW	
T-1-3/4 Square	L811R	L811G	L811Y	L811WW	
T-1 Round	L812R	L812G	L812Y	L812WW	

.215"(5.46) .280 SQ. (7.11) .280" (10.92) .280"(7.11)

Can't find it here? We have many more standard and custom solutions.

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